INDUSTRIAL PHANTASMAGORIA
SUBCULTURAL INTERACTIVE CINEMA
MEETS MASS-CULTURAL MEDIA OF SIMULATION

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DOCTORAL THESIS
IN
INDUSTRIAL ECONOMICS AND MANAGEMENT,
ROYAL INSTITUTE OF TECHNOLOGY STOCKHOLM, SWEDEN 2010

Akademisk avhandling som för avläggande av teknologie doktorsexamen och med tillstånd av Kungliga Tekniska Högskolan i Stockholm framläggs för offentlig granskning.

Onsdagen den 16 juni 2010, klockan 13.00 i sal F3, Lindstedsvägen 26, KTH i Stockholm.

FAKULTETSOPPONENT: Professor Saara Taalas, Åbo Handelshögskola

STOCKHOLM 2010
INSTITUTIONEN FÖR INDUSTRIELL EKONOMI OCH ORGANISATION,
KUNGLIGA TEKNISKA HÖGSKOLAN I STOCKHOLM
The video game industry has in three decades gone from a garage hobby to a global multi-billion euro media industry that challenges the significantly older and established cultural industries. After decades of explosive growth the industry surprisingly finds itself in a crisis—in terms of sales, future trajectories and creative paradigms. The global gaming culture receives substantial attention from society, media and academia—but the industry itself appears in comparison as an enigmatic terra incognita with astonishingly little dedicated research. This thesis aims to amend this situation by presenting a study at the cross-section of the video game industry, game studies, literary theory, cultural industries and business studies. It deals with the following question: how does the global game industry relate to its own product, in terms of communication and media dimensions, and what are the (business) consequences, in terms of production, strategy and commercial/creative innovation, of this relationship?

This study’s departure point is constituted by a comprehensive description of the industry’s structure, dynamics and processes, based on extensive interviews with industry professionals. It is followed by an examination and comparison of the game industry with other media/cultural industries in relation to their economy and business dynamics. With inconclusive answers regarding the mediumindustry relation, this study proceeds by exploring literary theories from the field of game studies, in order to gain insights into the dynamics of medium and industry. Literary theories from ludology and narratology provide rewarding perspectives on this inquiry, since it is found that the ontological dichotomy of simulation vs. representation present in the interpretational realm of the game medium is also reflected in the industry and its dynamics. This has pivotal consequences for the analysis of the game industry.

This study concludes by positing the current critical condition of the industry as an extremely decisive moment in its history: will it become a truly universal mass-medium, or will it continue down its subcultural path? Subcultural “interactive cinema” meets mass-cultural media of simulation—how will the industry evolve?

**KEYWORDS:** video game industry, computer game industry, video games, computer games, cultural industries, media industries, cultural economy, game studies, literary theory, ludology, narratology, interactive cinema, simulational media, ergodic literature, cybertext, interactive narrative, business studies, industrial economy, hardcore gaming, casual gaming, subcultural industries
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BY MIKOŁAJ DYMEK
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ABSTRACT

The video game industry has in three decades gone from a garage hobby to a global multi-billion dollar media industry that challenges the significantly older and established cultural industries. After decades of explosive growth the industry surprisingly finds itself in a crisis – in terms of sales, future trajectories and creative paradigms. The global gaming culture receives substantial attention from society, media and academia – but the industry itself appears in comparison as an enigmatic terra incognita with astonishingly little dedicated research. This thesis aims to amend this situation by presenting a study at the cross-section of the video game industry, game studies, literary theory, cultural industries and business studies. It deals with the following question: how does the global game industry relate to its own product, in terms of communication and media dimensions, and what are the (business) consequences, in terms of production, strategy and commercial/creative innovation, of this relationship?

This study’s departure point is constituted by a comprehensive description of the industry’s structure, dynamics and processes, based on extensive interviews with industry professionals. It is followed by an examination and comparison of the game industry with other media/cultural industries in relation to their economy and business dynamics. With inconclusive answers this study proceeds by exploring literary theories from the field of game studies, in order to gain insights into the dynamics of medium and industry. Literary theories from ludology and narratology provide rewarding perspectives on this inquiry, since it is found that the ontological dichotomy of simulation vs. representation present in the interpretational realm of the game medium is also reflected in the industry and its dynamics. This has pivotal consequences for the analysis of the game industry.

This study concludes by positing the current critical condition of the industry as an extremely decisive moment in its history: will it become a truly universal mass-medium, or will it continue down its subcultural path? Subcultural “interactive cinema” meets mass-cultural media of simulation – how will the industry evolve?
I would like to fully dedicate this thesis to my father, Doctor (of medicine – the real kind) Maciej Dymek, who unfortunately passed away when I was just beginning my research project in 2002.

I am indebted to my supervisors, which during my PhD project have been: Prof. Mats Engwall (2010), Prof. Claes Gustafsson (2003–2009) and Prof. Alf Rehn (on and off 2004–2010) – thanks for your input.

My family has been crucial during this long process: the best sister and brother of the world – Matylda and Mateusz. They have helped, inspired and comforted me emotionally during this tiresome ride called thesis. They have also taught me one or few things about media, narrative, writing, and independent/solitary work – all very useful things when writing this thesis. I’m also thankful for their patience during several years of writing and claims of being “almost finished”. Of course my eccentric matriarch Mama and wonderful Babcia (who joined me to NY!) have also been important as well as many others of my dearest Varsovian family: Szwagier, Anka, Michał, Marta, Ewa, Mila (cuuutest golden child of the world!), Danusia and Irena (świętej pamięci).

The most influential and helpful fellow academic travellers during this excessively long journey have been the good, old brothers in arms: the “Indek ELIT” group. I would like to thank Sven Bergvall, Thomas Lennerfors, Helena Csarmann (for being my oldest Indek friend), Charlotta Mankert (for her quirky insights into everything from turbo warrant trading to figure skating couture), David Sköld and later with additional “members” Stefan Görling (for “i Lidingö” and endless other corrections), Alexander Löfgren (“riktigt fwäscht!”) and Lucia Crevani (for anti-heroic world conspiracies with a distinctive Milanese twist). Particularly prominent among this group is Sven and Thomas – without them this thesis would have been impossible. They have provided me with endless intellectual debates and practical support for this thesis, but more importantly lots of good laughter, mindboggling fun and free drinks. I am also glad I can call them true friends for the rest of my life.
There are more people I would like to thank in academic circles: primarily Janet Borgerson and Jonathan Schroeder (for showing me how dynamic, exciting and stimulating the academic world can sometimes be – what a tag team!), Jan-Erik (“blixt-Tibbe”) Tibblin, Caroline Petterson/Christina Carlsson (Indek's true gray eminences), Prof. Bo Göranzon (vilken skilln! lirare!), Cali Nuur (never a boring conversation – not even when in the peripheries!), Johann Packendorff/Monica Lindgren (for their persistence), Peter Zachariasson (nice paji!), Vicky Long (for her eccentric energy), Anette Hallin, David Bauner, Marcus Lindahl (the musketeer) and Prof. Douglas Holt (for cultural industries inspirations).

There are also other people who need to be mentioned: Per Nägele (for being my oldest and most loyal all categories (inklusiv flytt) friend – Hej Hilla, Gabriella och Theodor!), Erik Lindfeldt (for your truly unique perspectives and subtle humour), Ulla (Ullis) Bergvall Weinigel, Maximilian (“to the Max”) Nauri, Pan Wyaporn Panna-rye and last but not least Lina Färje (a light in my life!).

And finally myself for delivering this text – zdrówko!

Kungsklippan, 2 v 2010
Mikołaj Dymek
INTRODUCTION
WHY VIDEO GAMES?

In the small hours of 21 February 2006, Swedish entrepreneur Stefan Eriksson was racing an ultra-exclusive Ferrari Enzo (purportedly only 400 such models exist and sold at an estimated price of $2 million exclusively to previous multiple Ferrari owners) down California’s Pacific Coast Highway not far from Malibu – the affluent and glamorous home of numerous stars and executives from the Hollywood show biz elite. Eriksson’s passenger was videotaping the joyride inside the car and speedometer readings in excess of 320 km/h are said to have been recorded (Sullivan 2006). Obviously exceeding the legal speed limit, Eriksson’s Ferrari suddenly hit a miniscule bump, which at those speeds and with the low ground clearance of the supercar, resulted in a drift that slid the car off the road and into the grass and then catapulted the vehicle airborne. The spectacular, death-defying race ended in an finale as miraculous as it was violent: the car slammed into a wooden power pole and the marvellous artwork of Italian technology was brutally split into two pieces. Astonishingly, both Eriksson and his passenger left the multi-million dollar wreck without serious injury. The stunning accident was not only the end of Eriksson’s night race but also to his impressive career, that had brought him from Sweden to the entertainment industry clusters of Los Angeles. The crash also signalled the dramatic end of the company he was employed by, Tiger Telematics, which was active in the video game industry, and more specifically the burgeoning handheld gaming segment. What was this intriguingly complex story all about?

Tiger Telematics was a U.S. company that was the result of some ingenious financial bootstrapping that had transformed a small Swedish GPS-electronics distributor into an international corporation listed on the prestigious NASDAQ stock exchange. By means of a reversed takeover of a Florida-based floor-covering business, listed on the notoriously shady and sparsely regulated Pink OTC Markets, the company managed to attract investor capital that later propelled it into a listing on the renowned technology-centric NASDAQ exchange. By then it had already used up approximately $100 million of investor capital (Smith 2005) de-
veloping the handheld video game console *Gizmondo*. After several failed GPS-based projects, Tiger Telematics decided that the way forward was a GPS-equipped handheld gaming device that would compete with Sony’s *PlayStation Portable* and Nintendo’s *DS* offerings in the global video game market. The Gizmondo console was based on off-the-shelf technologies such as the Windows CE operating system and standard mobile computing hardware. By the time of Eriksson’s crash the company had lost almost $400 million developing and marketing the console (Sullivan 2006).

However, the strength of the people associated with Tiger Telematics was not necessarily game technology or business models (as witnessed by its gargantuan losses), but rather by its hyperbolical PR, IR and marketing skills that attracted massive investor capital, created media hype, and continuously drew the attention of the game industry. For its European launch it created several subsidies as part of massive launch: it setup a flagship store on Regent Street in London, it bought control of modelling agency ISIS to provide beautiful young lady models during marketing events, it sponsored the *Formula 1 Jordan Grand Prix* team as well as Eriksson’s own racing car at the *Le Mans 24 Hours*, and finally its hedonistic launch party at London’s Park Lane Hotel hosted by Danii Minogue, with performances by Sting, Pharrell, Busta Rhymes and Jamiroquai. No expenses were spared during the Gizmondo launch. Its technology was created with all the hottest and right game/mobile/technology industry buzz-generating abbreviations of the era: GPRS, WAP, MMS, MP3, MPEG4 and GPS. It would have been a competitive device had it only reached the market on time (and with a substantially lower price-tag). When the mobile industry was starting to discuss mobile advertising solutions, Tiger Telematics quickly responded with *Smart Adds* that would display GPRS-transmitted advertisements and consequently subsidise/lower the price of the device. Tiger Telematics, with Eriksson, were the right people, at the right time, with the right solution – or so it seemed.

After the crash and Eriksson’s arrest by Californian police, he claimed that he was merely a passenger, and that the driver, supposedly named Dietrich, had run away from the accident site. The other passenger (with the video camera) claimed he had been a passenger in a Mercedes-Benz that had also fled the scene. In the days that followed it also turned out that the wrecked Ferrari was not owned by Eriksson, but by a Scottish leasing bank who thought it was in the UK. In his exclusive Bel Air mansion police found another Ferrari Enzo (this one black) and a Mercedes-Benz SLR McLaren (yet another ultra-exclusive supercar), both with unclear ownership. Furthermore, police discovered that Eriksson was a “Deputy Commissioner of Antiterrorism” for San Gabriel Valley Transit Authority, an obscure bus company in a small Californian town, and that he had used
this authority-like ID badge to acquire guns and allegedly pose as a law enforcement officer.

This would all have been just another bizarre high profile, yet local, case of streetcar racing gone expensively wrong, were it not for a sensational discovery by tabloids halfway around the globe in Sweden. Eriksson was in fact not only a game industry executive, but was previously known as Tjock-Steffe (“Fat Steve”) whose obscure past was as a prominent mobster boss of one of Sweden’s fiercest and most violent crime gangs known as Uppsalamaffian (“the Uppsala Mafia”). When this news reached the U.S. media it developed into a global news frenzy – Eriksson’s game industry career and Gizmondo’s incredible journey crashed as abruptly as his Ferrari Enzo.

The Uppsala Mafia’s main line of business had been drugs, extortion, (violent) debt collection, fraud, counterfeiting and even kidnapping. After an elaborate sting by Swedish police in 1993, Tjock-Steffe was sentenced to ten years in prison, but was released after six. It turned out that Eriksson was not alone – there were at least three other associates from his mobster past involved in the running of the Gizmondo business. Actually, the “brains” and charismatic pitchman of the Tiger Telematics project was Carl Freer, the CEO of Gizmondo Europe, who had earlier started up the small Swedish GPS-electronics distributor that later developed into a listed U.S. corporation. He began inviting his friends from the old Uppsala Mafia, who subsequently started pumping the corporation for various (falsified) services, positions, expense compensation (e.g. an “automobile allowance” of more than $100,000) and even undelivered third party game development contracts in order to inflate their incomes (Sullivan 2006).

Gizmondo Europe, and consequently Tiger Telematics, went bankrupt in 2006 with losses of almost $400 million. The European launch had been a failure and the U.S. launch had taken place less than six months before the bankruptcy. Stefan Eriksson initially faced 14 years in prison for a laundry list of crimes including, among other felonies auto theft, embezzlement, illegal possession of guns and drugs. The fourteen years were reduced to three in a bargaining process that ended in deportation to Sweden where he was sentenced to one and a half years in prison for crimes committed during his Uppsala Mafia days (Johansson 2009). His other associates, mainly Freer, experienced minor legal problems, and went on to prepare the launch of a free, advertising-driven (based on the Gizmondo Smart Adds technology), virtual mobile phone operator in the U.S. called Xero Mobile, which, using the same financial bootstrapping techniques managed to get its stock listed and acquire some investor capital before going bankrupt. Freer has since moved on to other ventures, that have also failed,
including a purported attempt to revive the Gizmondo console with a new and updated version (Ricker 2008).

It is easy to dismiss Gizmondo as yet another high profile scam created by vicious characters at the intersection of the financial markets and entrepreneurship: a classic case of charismatic con men gaining the trust of investors and then escaping with the loot. The appeal of the story is considerably amplified when taking into account the murky criminal past of the Gizmondo directors and the stark contrast it creates to the serious world of corporate finance that they roamed. Actually, Gizmondo would probably have gone down in history as an unknown anecdotal business failure in the game industry had it not been for this sensational context. Yet, nobody knows if Gizmondo might have become a success had it only stayed longer in the marketplace, reinforced by a substantial capital injection (by the time of Eriksson’s crash Gizmondo was to all intents and purposes already bankrupt). In hindsight many reject the Gizmondo as being too late technologically, too expensive, with too little game content and with a non-existent business strategy. This is probably true to a certain extent, but many of Tiger Telematics’ strategic actions were not dubious at all, quite the contrary, they were even sound: it identified the major markets, it understood (early) the potential of mobile gaming/computing/advertising if combined with network access and gpr, it started a programme of content development with dozens of in-house projects and commissioned work (including with the world’s biggest game publisher/developer EA), it acquired stock market-listed UK game developer Wartog in order to expand its industry network, and, most vividly, it understood the importance of strategic PR and advertising. On paper, Gizmondo’s strategy was definitely not optimal, but it most certainly was not abysmal.

This argument is further reinforced if we look at another high profile failure in the exact same market niche, i.e. mobile/handheld game consoles, launched during the same period. It also tried to target the mobile/handheld market niche by creating a device that aimed to tap into the potential of mobile network technologies in combination with video games. Its producer, one of the world’s biggest companies, managed to launch several devices. The inaugural device experienced abysmal sales and was considered by many to be an industrial design nightmare – “taco-shaped” with game cartridges behind the battery, and microphone/speakers on the side of the device (appearing as an “elephant ear” on users). Consequently, it was a mediocre game device and a terrible phone – the worst of two worlds instead of the opposite. The following devices, although previous errors had been rapidly corrected, never quite managed to impress the market. The corporation behind this device was none other than... Nokia, the world’s biggest mobile phone producer. Its push into the video games
market, called *N-gage*, was at least in terms of losses a *bigger* failure than Gizmondo since Nokia lost more money on the *N-gage* project, although no official figures are available, except that it sold a meagre 3 million devices (Snow 2007). It was cancelled only two years after being launched, when Nokia decided that only the software platform would live on in its high-end mobile phones. After five years as a software service it was decided that the platform would be discontinued.

Compared with Tiger Telematics, Nokia had considerable advantages: an established world leader in mobile phone technology, well-funded, experienced executives from the game industry and a global network of distributors and operator network partnerships. Everything indicated that Nokia had all the components to exploit a gigantic market opportunity— but it failed miserably. If a technology-intensive consumer-oriented world leader cannot achieve success in this market, why should Gizmondo have succeeded? Was Gizmondo’s failure due only to the criminal background of a handful of its executives, or was there a bigger problem? A problem that even Nokia and its army of strategy and game industry consultants could not handle? As this study will later elaborate extensively, one of the fundamental characteristics of the game industry is that demand is notoriously inconsistent, and the main strategy is as old as accounting: hedge the “wins” against the “losses” in a book/portfolio. Gizmondo was not able to tackle this challenge, but nor were thousands upon thousands of other ventures ranging from one-man garage enterprises to global media corporations. The game industry is metaphorically located in the middle of an infinite graveyard of dead video game dreams and ventures. In that regard, Gizmondo was no different to Nokia—companies that were unable to tackle the fickle and volatile dynamics of the game industry, and in particular its notoriously erratic demand.

Yet, Gizmondo’s failure captures perfectly many symbolic dimensions of the current game industry landscape. The game industry is a furious, high budget, glamorous, volatile, fast-moving, seductive, global, explosive, technological, artistic, marketing-intensive, lucrative, exotic, *unknown* industry that attracts all types of people. The mobster-cum-entrepreneur Eriksson and his friends saw the perfect opportunity for a get-rich-fast-scheme: plenty of alluring profits and an exploding market expansion, but with cryptic industry dynamics combined with opaque cost structures and a general lack of game industry knowledge on the part of financial institutions and the venture capital industry. Freer and Eriksson competently rode a powerful wave of investor exuberance and general fascination with the potential of the video game medium. Eriksson imploded this wave like a “post-modern Icarus” who flew to close to the Hollywood sun, by crashing a Ferrari that most people can only dream of driving. Not only because it
is prohibitively and ridiculously expensive, but also because it is frequently portrayed in streetcar racing video games that millions drive “virtually” and visualise. His night race was a manifestation of a dream with intertextual origins from the “real” and “virtual” world of so many video games. It is a fascinating story with spectacular transmedial symbolism that will act as a stepping-stone for this study.

Unfortunately for Eriksson, the crash was as real as a 320km/h accident will ever get. It brought down his career, his fortune, and with it also Gizmondo. Eriksson’s crash reminded many that the game industry had long ago lost its innocence: this is no toy industry anymore, but a fierce multi-billion dollar industry with global reach and ambitions. Like Eriksson, it has sprung from obscurity to global fame and affluence in a very short time. However, does this metaphor imply that the game industry will similarly also crash and burn? In its final remarks, this study will, somewhat astonishingly, conclude that this is a fully plausible similarity. To make a very long argument very short: the game industry is at a crossroads and needs to decide where it wants to go: subcultural industry of “interactive cinema” or mass-cultural medium of simulation? A crisis is looming and the game industry needs to take decisive action. This study will be dedicated to a full exploration of this and its consequent issues.

To fully understand this conclusion and what its ramifications are, it is necessary to understand how the industry works, and most importantly how the game medium works and what type of relationship exists between the two. There is a recursive interdependency between industry and product/medium, between (game) hardware and software, between medium and content. The following question will act as a guiding question in this study: how does the video game industry relate to its own product and what are the (business) consequences of this relationship? This study lies at the intersection of industrial economy, cultural industries/economy and game/media studies. It focuses on the commercial production, i.e. the industrial zone of the video game phenomenon and draws from these distinct intersecting fields in order to produce a comprehensive description of the commercial game phenomenon.

The game industry is indeed an exciting and dynamic industry. In less than three decades it has grown from an esoteric academic hobby into a multibillion-dollar industry. Today, the market is expected to reach $76.1 billion by 2013 (Business Insights 2009). Its tremendous growth has eclipsed even the biggest Hollywood cinema openings in terms of revenues (Becker 2004): the highly anticipated video game Grand Theft Auto IV, for instance, sold 3.7 million copies during the first 24 hours it was on sale in 2008, and grossed $500 million in its first week (Richtel 2008) and more than $1 billion by the end of its first year with 13 million sold copies (Bramwell 2008).
Another impressive figure, among thousands of others, is the following: in its first five years the video game console PlayStation 2 sold 100 million devices, and over the next four years (while being replaced by PlayStation 3) sold another 40 million. With a so-called tie-ratio (number of sold games/console) of almost 8 (Sony 2002), this yields a mind-bogglingly staggering 1.1 billion sold games on the PlayStation 2 console alone. The most impressive fact of all is that all this has been achieved within three decades of the commercial birth of the global video game industry! Few other industries have experienced this kind of explosive growth in terms of revenues, sales and geographical expansion. A fact that by this time is well-known and well-established in mainstream society.

The industry is slowly transforming itself from a high-tech toy industry into a cultural industry (Caves 2000; Hesmondhalgh 1998), focusing increasingly on aesthetics, content and end-user experience instead of technology alone. Impressive as this success may be, the video game phenomenon has only fairly recently been noticed by academic research, which focuses primarily on issues of technology (Bates 2004), game design (Salen & Zimmerman 2003), psychology (Anderson & Dill 2000; Griffiths 1997; Grossman 1995; Irwin & Gross 1995; Kirsh 1998), literature/drama theory (Aarseth 1997; Murray 1997) and intermittently most of the social sciences. Over the last decade the video game medium has risen to academic prominence, particularly within the social sciences, primarily due to the infinite academic allure of the so-called MMOGs (Massive Multi-player Online Games) that seemingly create entire “online new worlds” with “virtual societies” begging for a bonanza of academic analysis, theorisation and dissection. While all of the research stemming from this Klondike game research rush cannot be labelled as belonging to one category, the vast majority nevertheless falls into the typical traps of “new” research subjects: it becomes the playground of any established theory with a colonisation/expansion agenda i.e. basically all social theories. The research becomes a thinly veiled excuse for repeating, reapplying and reaffirming the central tenets of one’s theoretical framework/background, i.e. repetition with sparse “video game” ornaments, predominantly in the empirical department. This does not by definition result in bad research, as will be shown later in the theoretical analysis in Part II, but produces a clear and distinctive line: those that expand theoretical frameworks into the video game domain, and those who find their theoretical foundations inside this domain.

With few exceptions, almost no attention, or very little, has been paid to the business, organizational and economic aspects of these thriving developments (Zackariasson 2007). This is indeed a paradox, but part of this trend can be traced to the moralizing dynamics of academic activity
(Gustafsson 1994), which has excluded “frivolous” subjects, such as video games, for many years. The majority of the few existing business/industry/economy/organization-focused game research falls into two categories: pragmatism and theoretical colonialism. The pragmatic type of literature is rarely academic in origin but rather written in the spirit of “how do you make it into the game industry” by seasoned “hands-on” industry professionals/journalists “from the trenches” (LaPlante & Seidner 1999; Laramée 2003; Saltzman 1999; Scheff 1999; Takahashi 2002b). At best, it contains general overviews of the industry with analytical stringency on a par with business journalism. The other category, theoretical colonialism, has a distinctively academic origin, preferably in journal format (Boud-dine & Bourakova-Lorgnier 2004; Cadin & Guérin 2006; Gaume 2006; Readman & Grantham 2006; Szmigin & Reppel 2004; Tschang & Szczypula 2006), anthologies (Kline, Dyer-Witheford, & Peuter 2003), and other formats (Chambers 2005; Kent 2001; Kerr 2006). While this second category contains research of various levels of theoretical sophistication, it can most definitely be labelled “theoretical colonialism” – an established business/economy/etc theory makes a “guest appearance” in game studies or video games make a “cameo appearance” in the journals of the countless subfields of business studies. This study does not oppose this type of research. Nor does it support it. This study seeks to establish theories that explore and explain business aspects of the game industry, with the game phenomenon at its theoretical core, and not on its periphery. This approach is different since it is primarily concerned with explaining the video game phenomenon and not confirming and illustrating an existing theoretical perspective.

In the absence of established economic and organizational perspectives, this research project aims to study the dynamics of the different organizations, companies and entities that make up the global video game industry, by embracing and extending existing views of the notion of video games/gaming which exist within the industry and in the nascent field of games research, as well as sources in the more established perspectives of industrial/cultural economy and organizational studies. The point of departure for this research project is the disparate and dynamic dichotomies that govern, organize and constitute this industry. As the empirical data shows, these tensions are prevalent in the industry, but are also reflected in games research. The most principal of these tensions is the debate over the very nature of what video games are all about: are video games predominantly games, or are they stories? This dichotomy is framed according to particular themes and perspectives that are supported both by findings within the empirical data as well as theory.
This thesis will in a general sense explore business, economic and organizational aspects of the game industry. It will also explore the interconnected aspects of the medium itself: literature theory and (new) media/game studies. The empirical foundation consists primarily of the industry sphere comprising organizations concerned with the production, distribution and sale of video games as well as secondary/affiliated organizations at the peripheries. The boundaries of this sphere entail an industry-level analysis, but also incorporate aspects of the medium and the reader/consumer, since the two latter are vital for a comprehensive understanding of the industry.

However, before such an abstract analysis can be performed there must be a more basic understanding of the game industry fundamentals as such. As it turns out, the video game industry has developed into a fairly classic four-tier industry segmentation in line with many other industries, particularly media industries. This classic segmentation is based on specialisation along the following lines: design/production, financing/marketing, distribution and reselling. In the game industry this is represented by game developers, game publishers, game distributors and game resellers. Developers create video games by designing their visuals, aesthetics and technology, but also the highly technological aspect of writing the actual game software. Publishers primarily finance and market video games. As will be shown later, this role has rapidly transformed and increasingly involves more aspects of the production/development process. Distributors take care of the physical distribution of game (storage) media from publishers/console manufacturers to the final entity, the resellers. As part of the general professionalisation trend in the game industry, a wave of consolidation and vertical integration has encroached on the independent video game distributor’s turf, increasingly becoming integrated parts of the industry’s powerhouses: the publishers. In the game industry there is also a fourth segment of companies: video game console manufacturers. As a result of the recursive interdependence between game software and hardware, they constitute together with publishers the most influential industry entities.

This four-tier model can be identified in practically all forms of creative/cultural industries, where the actual design/production is de facto outsourced – a production commissioned by a patron. The patron creates/attracts a market and sells at a profit, which is then shared with the creator/producer. This is the fundamental publishing model and reflects a fundamental economic property: excessive supply of creators and goods combined with highly uncertain demand for goods. The excessive supply is caused by the nature of artistic/creative production: the main objective of its production is not profitable production, only production itself, i.e. the art. Creators commercialise their products to cover production costs
and to make a living out of them. Consequently, most types of commercial art/creative production becomes a contract between art and commerce, as stringently and rewardingly described in the research done by Caves (2000). There are countless more game creators than profitable game creators, as well as countless games that do not get published/commercialised.

To solve this intrinsically structural issue, game designers/creators team up with a project partner who commercialises the product – in most cases a publisher. There are several possible partner configurations in this industry and they represent the particular dynamics and power relationships that exist in this industry. Paradoxically, it might seem, the creative source of the industry, the actual creators – the game developers – are in a subordinate position compared to publishers, console manufacturers and even resellers. This is partly explained by the excessive supply of developers, and partly by an industry transformation/professionalisation that has favoured publishers at the cost of developers who have historically been excessively technology-oriented combined with a lack of managerial and business competencies.

Historically, until the mid-to-late 1990s, developers were independent (in terms of ownership) entities who created ideas and approached publishers in order to commercialise their ideas, i.e. to arrange financing, manufacturing (on game storage media), advertising and distribution. Fully self-financed independent developer productions also occurred during the first two decades of the commercial video game age (from the late 1970s into the 1980s). Today, such wealthy and well-managed developers such as the legendary Valve Software are extremely rare (if we do not count the armies of “self-financed” and non-published peripheral start-up developers). Developers can be historically characterised as lacking managerial/business competence, and as a result frequently and persistently experience cash flow problems and/or bankruptcy, only to quickly re-emerge in new formations. There are different types of developer studios depending on genre, technology/platform and budget. Without doubt the overwhelming majority of game developers are small, unprofitable quasi-companies, with a handful of unpaid employees, that few have heard about. This study focuses on the other end of the scale: the most commercially successful, prestigious, proficient and avant-garde segment – the so-called AAA Developers – due to their paramount industry position in terms of sales, profits and general artistic influence. These are based on developer teams, which average 20 to 25 members who focus on one single game project. AAA developers rarely exceed four to five parallel teams, although there are rare exceptions with “super-developers” such as Foundation9 and VG Holding, which had up to 800 employees (Letzing 2007). Many teams radically increase the business risk, and there are limited economies of scale in terms
of labour during development—these cost synergies can primarily be found in expensive technologies such as game engines. Due to the lack of limited game industry insight within the financial community the valuations of many assets, and particularly developers, is erratic and inconsistent. External valuations, via stock exchanges, are rare and indicate, among many other things, not only the volatility of game development business models, but also inexperience among these fairly small developer companies in attracting institutional investors via such formalised capital-raising institutions. Exceptions do exist: *Funcom, DICE, Starbreeze, Rage* and a few others have, during some phases, been independent and stock-traded game developer companies.

If and when a successful developer expands to more than a handful of parallel teams and/or becomes stock-listed, it tends to a) be acquired by a publisher due to its valuable game portfolio b) historically, become a publisher itself. Acquisition by publishers is fairly common. The world’s biggest publisher, *Electronic Arts* (EA), for instance, has over the course of two decades purchased approximately 40 studios in 19 countries. These formerly independent developers continue to work as internal studios within the publisher, or in many cases, unfortunately, cease to exist due to management reshuffles and new publisher strategies.

A drastic professionalisation/corporatisation of the game industry has increased the power of the publisher and given rise to the dominance of the work-for-hire and in-house production configurations. The first form is when publishers outsource the production of game software to an independent developer but maintain the creative authorship, while the latter form is the use of a publisher’s in-house studios, which are frequently the result of publisher acquisitions of independent developers. Both forms entail consolidation of idea production—an increasingly vertically integrated, consolidated, streamlined, linear assembly-like, distribution-oriented, sequel-producing, pipeline-organized and more oligopolistic industry structure for game creation and innovation—a structure dominated by publishers and that excludes independent developers. Similar to many other (media) industries, the game industry is heading towards a landscape with a handful of massive global players that dominate most business activity.

Another transformation that has occurred during the last two decades, with ramification to the industry structure, is the massive IP-turn of the industry—a general and industry-wide re-orientation of the business and value-chain focus towards IPR (Intellectual Property Right) issues, i.e. an increased focus on the legal aspects of protecting, managing and acquiring the copyright to game content. This has introduced another type of entity into the industry: the IP-owner. Predominantly, the IP-owner is a publisher, but IP-owners from other domains are also frequent—book, film,
comics, music, toy/other companies that want to commercialise their IPs in the game industry.

Consequently, the industry has migrated from a developer-driven creative/innovation/production process, to a substantially more vertically integrated, corporate and publisher/IP-owner-driven process. The fundamental characteristic hit-driven nature of the game market has not changed, but rather amplified by this transformation. Development and marketing costs have risen sharply, yet the fundamental business model has stayed the same: sell video games to end-consumers via efficient physical distribution channels during a short sales window. The result is an inevitable increase in business risk, but also a radical stratification: the strong are getting stronger, while the weak are being marginalised/eliminated.

The streamlining and professionalisation trend has had a dramatic impact on the actual production organization of the industry – gone are the days of small-scale rock’n’roll ad-hoc improvised productions in the mythical entrepreneurial garage. Their place has been taken by a more standardised development process and set of professional functions that organize the inner workings of the development/production process, as well as the cooperation between different entities along the entire value chain, and most importantly the financing mechanisms. This standardised production process creates a frame of reference for the entire industry and organizes most of its dynamics, but also the pivotal financing aspect. This process is heavily influenced by similar techniques/project models used in the more experienced software industry, but also in the world of venture capital/seed financing. Game development is a massive software project (from a technical perspective), but also a type of equity investment project (from a publisher point of view) and an artistic endeavour (from a game designer/artist perspective) – a process that materialises the game idea into a functional software programme that entertains and stimulates.

Although the organizational requirements differ substantially from one developer to another, and also between types of projects (developing a small mobile telephone game is not the same as developing a global AAA MMOG game), this process standardises production into six distinct phases: initial concept, pre-production, prototype, concept development, production and QA/post-production. A significant variation of this process depends on the production configuration, and more specifically on the project principal/author – e.g. the process is different if it is initiated by an independent developer, compared to an in-house or work-for-hire project, mainly due to the increased verification needs (for financing) when two independent entities cooperate. Central industry vernacular concepts during this process are: concept document, vertical slice, design document, milestone, alpha/beta versions, QA, premaster and gold master. The concept and design
documents are the “scripts” of the video games during various phases of the design and production stages. The concept document presents the gist of the game vision and constitutes a concise pitch to the project partner/investor. Usually, a playable prototype is also required to convince the publisher/investor – a so-called vertical slice presents all the “vertical”, i.e. general, features of a proposed video game. Information regarding budget, projected sales, demographics and project plans is also required.

If the game proposal is accepted a so-called design document is produced, which is an extremely comprehensive type of description containing hundreds of pages of text and images. This entire documentation is also needed in order to produce legal/project planning documents that divide the actual software production phase into subprojects with their own budget and timeline. Each milestone must be verified and validated by the publisher/investor to advance the project to the next milestone phase. Publisher-funded milestone financing is by far the most frequent option, although there are alternatives such as (developer) self-funding, new (developer) share issue, prototype funding (where an external investor finances a prototype and assists with publisher negotiations), completion bond-financing (“movie-style financing”) and others. However, they are not frequently used. When the actual software production phase is coming to an end it goes through various QA (Quality Assurance) stages with internal and external verification teams (depending on production configuration). These verification stages are exactly the same as in “conventional” software production: alpha, beta, premaster and finally gold master versions.

The actual production phase, which primarily concerns the internal organizations of game developers, has also been formalised, professionalised and segregated into the following major specialisation areas: art (non-technical design of graphics), code (highly technical writing/coding of software), design (artistic/technological general game design), project (formalised positions of responsibility/supervision), testing (QA) and other more niched specialisations (such as sound, music, story/script writing etc).

The industry has indeed put its more youthful, improvisational, dynamic, seemingly free, anti-hierarchical, ad-hoc type of organization and leadership behind it, giving way to a more professional and rigid industry structure that operates according to certain protocols, concepts and mechanisms. While this might be considered a negative development by some of the industry’s creative veterans as it inhibits the creative process with excessive structuring, many perceive this development as primarily positive from an industrial, business/economy and investor viewpoint.

Distribution has also been radically transformed by the professionalisation of the industry. Initially, distribution was handled by developers themselves through mail-order and other primitive solutions. Publishers
provided a more organized approach by employing the regional distributors that quickly sprang up (independent enterprises or set up by established distributors from other industries such as toys, music, home electronics etc). These regional distributors were on occasion quite successful and provided marketing, localisation and even some form of rudimentary financing. Due to the growing importance of efficient distribution in an increasingly fast-paced market, aggressive publishers started establishing their own international distribution arms, and/or acquiring independent distributors. Currently, most of the biggest global publishers use a strategic combination of in-house and outsourced distribution solutions, primarily with outsourced solutions in smaller/emerging markets and in-house solutions in the biggest and most profitable markets. Distribution is, and will continue to be, primarily a question of foundations of industrial power structures: it explains the success of the biggest publishers and also sheds light on the reluctance of the industry to adopt electronic distribution. A substantial business strategic advantage is provided, maintained and defended by means of the physical distribution model. Many industry professionals interviewed during this study point to the importance of having an integrated presence in the major markets, with a reach that stretches as far as into the stores with dedicated point-of-sale space at major retailers. Such a global distribution network lowers distribution costs, increases flexibility and boosts overall competitive advantage. This also elucidates, in a nutshell, the reasons why the industry’s power players (publishers and console manufacturers) continue to maintain this particular distribution model, despite paradoxically being one of the first fully “digital industries” – even more “analogue” media industries such as music, film and even printing (!) are more progressive towards electronic distribution models (partially because piracy has forced them to it).

Publishers have refrained from integrating the entire value chain, i.e. including the final step, retailing. This is a completely different line of business, and also a question of credibility and neutrality: even the biggest publishers understand that consumers are interested in games from several publishers, and publishers have no interest in selling their competitors’ offerings. They do, however, since a couple of years back, often provide direct online sales from their websites (further underscoring the paradoxes of physical distribution of digital content). The rest of the reseller field can be divided into three categories: specialised (dedicated to video games, game consoles and accessories), supplementary (electronics/food/department stores and others with “game corners”) and online resellers. Historically, resellers were toy stores, but games have expanded into media, electronics and other stores. Despite a business model with diminishing margins and fierce competition online, the physical store chains such as GAME,
GameStop and others are in powerful positions, and are able to enforce the controversial practices of renting and selling used/pre-owned/second-hand games that in some cases are said to represent 25% of revenues for major reseller chains (Kumar 2008), and consequently redistributes revenues in an unfavourable way for both publishers and developers. Despite attempts by publishers and console manufacturers to legally stifle this type of reselling, they have never succeeded.

The “rationalisation” project of this entire industry’s operations and dynamics, has undoubtedly come from the “top” of the industry: publishers and console manufacturers. These are made up of the “suits”/businessmen that early on understood the business potential of the phenomenon. These capital-intensive segments of the industry needed to attract external risk/venture capital in a way that satisfied the requirements of the financial community. By means of “cultural osmosis” from the venture capital and software industries, publishers/console manufacturers introduced these structures, protocols and mechanisms that have “trickled down” to the developer sector.

Publishers are most rewardingly seen as extremely active and involved video game venture capital funds that also take care of the marketing – this latter concept is used in this study according to the original and broadest definition: to satisfy needs in the market. This involves a dialogue with the market/target markets with market analysis, target group segmentation, positioning and other market activities, and not merely advertising and sales as is frequently misunderstood. There are also misunderstandings regarding the actual role of the publishers: why do they take all the profit for someone else’s work? Retail grabs 20%, 45% of the costs are development costs, 10–15% are marketing costs, and 11% is the console fee, which leaves a margin of 10–15% pure profit for the publisher, as argued by many, particularly the so-called indie-developer/gaming community that criticises the hegemony of the publisher model. As will be shown later, reality is much more complicated, and harsher, from a publisher point of view.

Financing/game development investment is definitely one of the major functions and raison d’être of publishers, as they are able to amass the financial strength and scale to manage a portfolio of tens, sometimes hundreds, of titles yearly. Historically, as has been elaborated earlier, the publishers have moved from being “pure investors” with all of the production outsourced to independent developers, transforming to vertically integrated “game houses” where idea generation, financing, production, post-production, marketing and distribution is done by the super-publisher with its in-house divisions. In cases where outsourcing is still done (independent or work-for-hire productions) the previously described milestone financing is used, in combination with the royalty advance model. In this model, the
developer uses its royalty percentage income ("royalty advances") to repay the entire development budget to the investor (i.e. publisher), who takes the rest of the revenues until the budget is recouped, when the developer starts collecting sales royalties directly. Developers and publishers are supposed to finance/pay their own costs, but developers (even well-known ones) are not capable of self-financing. Consequently, they “borrow” from the publisher using its only valuable security – future royalty revenues – as collateral, hence the name “royalty advance”. Developer and publisher only share future revenues, not equity, despite the fact that each party covers its own costs.

The developer’s royalty percentage is dependent on many factors, predominantly source of financing (co-financing increases percentage), publisher expenses (high expenses decrease percentage), game/IP sales potential (sequels decrease risk/marketing costs), IPR (ownership increases percentage) and game developer experience. The resulting developer’s royalty rate/percentage is one of the industry’s best-kept secrets since it reveals most of the profit margins and revenue flows, but according to various interviews made during this study it lies somewhere between 5-30%, most likely in the lower regions. Since this system is based on revenue-sharing linked to percentages of sales revenues, but based on high fixed as well as variable costs, the profit margins and revenues of developer and publisher vary considerably depending on development budget, marketing expenses, royalty percentages and of course sales. The resulting calculations (which will be presented later) are complex, but some of the conclusions are: developers rarely (practically never) receive any sales royalties (i.e. after the development budget is recouped) due to the high break-even point for developers who frequently require a global hit with sales in the 1 million plus region (which on a yearly basis happens for approximately a dozen titles). From a publisher point of view, much of the seemingly “fat margins” are absorbed by variable/semi-linear costs such as marketing, packaging, distribution, licensing, console fees etc., which represent 30-40% of the retail price and entail a much smaller revenue slice being used for actually recouping the initial ex ante development investment. This results in profit margins of 3 to 7% on fairly high sales of between 300,000 and 400,000. The profit margin ratios reach explosive levels, between 7% and 18%, if/when titles sell more than a million copies. Such rare hits are then used to cover all those loss-generating flops that publishers inevitably have in their portfolios. According to some industry professionals, as many as 75% of all released games do not make a profit. Consequently, the publisher position is not as advantageous as it might seem, and it is hard to evaluate the overall portfolio profit ratio because it depends on the composition of the portfolio. As example: during one of its most successful years (2006),
the world’s largest publisher, EA, had a profit margin of 8%, but during the next three years had ratios of 2%, -10% and -35% (NASDAQ 2009), reflecting the volatility of its changing portfolio.

Much can be said about the marketing practices of the video game industry. Frequently these practices are portrayed as cutting-edge, innovative and pioneering. Many people, however, are probably misled by the bombastic and over-hyped advertising campaigns that are common within the industry, instead of thoroughly examining the industrial practices. If these practices from the first three decades of the commercial game industry were characterised by one statement, it would be: chasing the *Nintendo generation*. The first truly global and successful commercial video game system was the *Nintendo NES* – a console from a company that created, pioneered and defined the commercial console-centric video game industry. With it came a generation of kids, born during the 1970s and early 1980s, that became the pioneering generation of gamers that stretched through most of the western hemisphere and included Japan. With minor modifications, this target group remains to this day the dominant consumer group of gamers. When Nintendo lost the focus of this group, *Sega* re-emerged as the new favourite and finally, *Sony* with its seminal Playstation console, managed extremely successfully to “reinvent” and “discover” the Nintendo generation all over again by targeting an audience, which at that point had become late teenagers, with significantly more adult, “cooler” and lifestyle-oriented type of marketing strategies.

Within this generation the most faithful, most dedicated and most lucrative group was the so-called *hardcore* gamers. They constitute the avant-garde of the gamer subculture: (very) high consumption, engaged, appreciative and most importantly profitable. This group quickly became the industry’s most influential target group. As the Nintendo generation started to mature, the typical hardcore gamer was beginning to emerge: white western male, 18–34 years old. It may have represented a lucrative segment, but it most certainly did not represent the entire potential market audience – it was a sub-segment and a subculture. This subculture grew more powerful and started demanding more esoteric content, which alienated the non-hardcore “outsiders”. It continued expanding for more than a decade due to the geographical expansion, but at a certain point, at the beginning of the 21st century, the industry realised that it could no longer rely on this target group for further expansion. Industry executives purportedly declared the end of the hardcore era and that they were moving on with new types of market segmentation.

The post-hardcore era started with a frenetic search for a new paradigm: it was not only looking for a new segment (such as “women” or “seniors”), but it was also looking for a concept that involved new approaches,
aesthetics and gameplay. Something that would replace the sport, racing, military, sci-fi and fantasy-obsessed gaming concept of the previous era. One of these new concepts was casual gaming. It was supposed to target the audiences that had been omitted by several hardcore-based game paradigms, and would support a light, more casual and less intensive type of game consumption. It was quickly linked to new technology-formats that were “closer” to the life of casual gamers: Web-based Flash-games or mobile phone games. In many regards the casual gaming “segmentation” never became a replacement for the hardcore gamer paradigm that still to this day heavily dominates the marketing strategies of video games. Casual gaming was a diagnosis with a cathartic identification of its main symptoms (lack of women, seniors, third world/emerging market gamers among many others) – but never a tangible treatment and solution. The industry is continuously looking for alternatives, and is currently (2009–2010) yet again reviving the notion of casual gaming, but this time as social gaming were casual gaming is done through social networking sites such as Facebook. Huge popularity and new types of gaming have been attracted, which makes it a promising proposition (as witnessed by massive investments in this segment) but so was mobile gaming, Xbox Live Arcade, and many other previous forms in this category. Only time will tell if becoming a “virtual farmer” (Farmville) or “virtual Mafia boss” (Mafia Wars) or similar will replace the billions generated yearly by the traditional hardcore genres of FPS (First Person Shooter), sport, racing and others.

As mentioned several times, the makers of game platforms are extremely influential and vertically integrated entities. They have their own publishers, studios, distribution networks and sometimes even stores. Their business model, however, is completely different to that of other players in the industry. While publishers, developers and independent distributors must play the market and bet on “winner titles” – console manufacturers own the market, which turns them into intermediaries. Console manufacturers charge a “console fee” (i.e. tax) on every third party game sold for its console – good sales benefit the third party publisher/developer, but also by definition the console manufacturer. The console fee is used to recoup and subsidise the retail price of its game consoles – throughout history few console models have been sold above their production costs. The reason for this is as simple as it is ingenious: a console is (fairly) useless without games, and vice versa. Consequently, the business model becomes a razor-and-blades model reminiscent of how Gillette razors (blades), computer printers (cartridges), mobile telephones (operator contracts) and many other interdependent product pairs are frequently sold.

The raison d’être of the video game console is to provide a more consumer-friendly, mainstream platform for video games. Historically, this strategy
also involved a different type of video game content, which was considered more pedestrian and mainstream by video game aficionados who regarded the PC as the only true gaming platform. Game consoles were superficial video games, whereas PC games were serious computer games. With time the difference began to blur, and has reached a point where PC exclusive game genres are limited to MMOGs (barely) and most others are shared with game consoles. The commercial importance of the PC is declining, and it is becoming a niche hardcore platform but, paradoxically, also casual gaming, which are predominantly played through web browsers on PCs. The success of the game console vis-à-vis the PC is constituted by the game consoles’ simple and consumer-oriented design, standardised hardware/software (unlike the PC’s never-ending upgrade cycle), inexpensive (due to subsidies) and high barriers to developer entry (creating a “walled garden” of quality games). All of these advantages have transformed game consoles into the global gaming platform of the industry.

Game consoles are based on highly specialised, very sophisticated yet “no-frills” technologies. Console designs are always a fine balance between cutting edge technologies, and cost-cutting solutions driven by the objective of reducing the subsidy. Development is prohibitively expensive and predominantly based on complex industry alliances, e.g. Sony invested $1.9 billion developing Playstation 2 and $400 million developing the processor for Playstation 3 (Gibson 2002; Spooner 2002). Due to the fact that the game console is one of the few IT devices that have permanently and successfully entered the living room, many of its manufacturers use it as a stepping-stone into other media technologies that connect to online services, contents and various media devices in the household – the decades-old dream of digital convergence. Many of these plans have not been successful since consumers instead prefer to use their PCs/Macs as “media hubs”. Similarly, online console technologies with multiplayer services and electronic distribution, whose potential has been explored since the 1980s, has, to make a very long story short, never really panned out.

The marketing of a successful game console is in many respects the creation of a game console economy based on a complex interplay of numerous dynamic factors. The success can be described as a positive spiral driven by good games that lead to more consoles that expand the market, which attracts more game development, which hopefully results in better games and pushes the spiral upwards. This spiral is maintained by marketing the console to both consumers and developers since both are intrinsic parts of the positive spiral. Good relationships with the third party developer/publisher community are crucial as they provide good third party titles. If successful the results are mindboggling: Playstation 2 sold more than 100
million consoles during its commercial primetime, and has after the introduction of Playstation 3 continued selling and has to date sold 140 million.

A console goes through a lifecycle in the marketplace that spans six to even ten years. It takes about two to four years to develop a game console. Its technology must constitute a leap compared to competing PC technologies, since the console is projected to remain competitive for six to eight years, unlike the PC which is continuously updated with new technologies. When the console reaches the marketplace the hardware specifications remain (more or less) static during the entire lifespan, but behind the scenes the hardware is continuously rationalised and exchanged for cheaper and more integrated technologies. The aim is to reduce the subsidy, which at launch can be as high as $3–400 (Playstation 3) and after several years of development can reach zero. The console subsidy requires the sale of a certain number of third party games and a smaller number of in-house games (with higher margins), which is called a tie-ratio and ranges from 5.5 to 9 games/console. When the console is being phased out and replaced by a new console generation, the older console is “reused” as a budget/emerging markets console because by then its production costs have reached fractions of the original introduction level.

The development cost of a console, technology alliances, subsidy levels/console pricing, console fee levels, game pricing, developer pricing (for developer software tools), in-house game development, third-party relations, content alliances (for online services) and marketing for end-users/developers – all of these factors have to be carefully managed and optimised to create a successful console. This study finds the razor-and-blades model too simplistic to explain the dynamics of the console industry, and prefers the “closed (medieval) marketplace” metaphor instead. Through standardised technologies consoles create stable marketplaces for games, online services and in a digitally converged future also other forms of media. The console manufacturer becomes a salient and powerful stakeholder in a network of other stakeholders that have a vested interest in promoting and investing in a game platform that encompasses not only hardware, but also software, marketing, online services and distribution networks.

The fundamental structure of console manufacturer–developer–publisher–distributor–reseller provides a general overview of the industry landscape. However, how do we most adequately and rewardingly describe its dynamics and processes? The fundamental research question of this study is to explore the relationship between product and industry, as this will highlight both, instead of a synthetically isolated analysis of one or the other. A fundamental, almost trivial, way is to describe it as a cultural industry, which has already been implied. The game industry, according to this perspective, constitutes a cultural/media industry whose medium is
the video game. This is supported by countless quotes from industry, consumers, mainstream media and some scholars. But what type of insights can be gained from classifying it as such? Can it be classified as such? Furthermore, are the similarities in terms of industry structure only, or do they also concern the medium itself in line with the digital convergence discourse? In order to verify this claim more thoroughly, a cultural industry perspective must be applied on the video game industry.

The cultural industry perspective has its origins in the Frankfurt school of critical thought dominated by Adorno and Horkheimer. Its critique of society and particularly the cultural industries, i.e. media, has been seminal and laid the foundation for an entire field of cultural industry studies with dozens of diversified subfields, countless polemics and numerous perspectives ranging from Marxian sociology, communication studies, ethnography, political economy through post-colonial studies to microeconomics and transaction economics. Hesmondhalgh (2002) defines the “video and computer games” as one of seven core cultural industries, but software programming is not included although “Internet industries” are. The difference lies in the creation of symbols, regardless of technological format, that inform, entertain and even provide enlightenment, based on stories, songs, images, poems, jokes and other things. Sport is considered a borderline case of cultural industry because it is competitive, but somehow video games are not, despite it constituting one of the most fundamental gameplay structures of the medium. This inconsistency emphasises the radical departure of the video game medium based on its interactive dimension: who is doing the symbol creation in the video game medium considering the performative and interactive dimension? Is it the developer or the gamer, or perhaps both in cooperation according to certain principles? Is the notion of (cultural) symbols even applicable to the video game medium? All these questions need to be examined thoroughly to fully understand the dynamics of the game industry.

Hesmondhalgh continues to describe the cultural industries by defining its distinctive features that cause “problems” and their frequent solutions: it is a risky business with high development costs/low reproduction costs of semi-public goods, which is solved by a portfolio (hits offset losses) of artificial output scarcity, which often relies on formatting (stars, genre, series etc.) to reduce risk. The video game industry complies fully with these characteristics, although with some reservations (where are the star developers?) To further understand the dynamics of the business/economical dimensions of the game industry from a cultural industry perspective, a more extensive framework must be identified. It can be found in culture economics, which historically has been a branch of microeconomics but has as of lately partially developed in a more qualitative and descriptive direc-
tion, providing rewarding analyses of the production, industrial organization and economy of cultural industries.

A particularly stringent analysis is given by Richard Caves’ (2000) framework based on the pivotal notion of contracts between art and commerce. Caves’ theories, with roots in contract theory and transaction cost economics, focus on the behaviour of different entities in industries, such as the cultural/creative, with high transaction costs. Building on this foundation, Caves stipulates seven characteristics of all creative industries: demand is uncertain, creative workers care about their product (regardless of financial outcome), some creative products require diverse skills (cooperation between multiple specialisations), differentiated products (no clear differentiation in the marketplace), vertically differentiated skills (producers are highly stratified), time is of the essence (rapidly increasing sunk production costs) and durable products and durable rents (value is theoretically eternal).

If applied, Caves’ framework corresponds fairly accurately to the characteristics of the video game industry according to the data collected during this study. However, there is one critical exception: durable products. Caves claims that the value of a cultural product can be very durable as witnessed by the popularity of Charlie Chaplin films, or music by Chopin and countless other products. Is this fully applicable to the video game medium? Indeed, some games, such as Tetris, have been popular for decades, but is it actually the same game being played? Except for the continuous IPR royalties – what constitutes the durable product/rent if it has to be (expensively) rewritten every time it is launched on a new platform? What is the role of technology and medium in the Caves framework? These answers cannot be found. Despite this omission, this study concludes that Caves’ perspective is indeed applicable to the video game industry and that it provides a rewarding model of its dynamics. However, it does not fully answer the question of this study: what is the relationship between industry and product, and what are its (business) consequences? It describes the industry, but the theoretical relationship to the product is lacking, as witnessed by the faltering durable products property. To fully understand the video game industry its product, i.e. the video game, must be explored. The Caves framework is based on finding similarities between cultural/creative – what type of insights are gained from defining the economical similarities between a Broadway musical, art gallery exhibitions and video game production? This study focuses on exploring the similarities but also the differences between the game industry and other cultural industries. One of the most fundamental differences is the actual video game medium and its different production and consumption requirements. Every media industry has its own specific logic based on the characteristics of the medium at its core. This study endeavours to highlight that core, and emphasise
its importance for the understanding of its context and industry. Consequently, this study proposes to dig deeper and to explore what video games are all about, and how the medium, and its production/consumption influence the dynamics of the industry. An understanding of the product/game medium will provide a more extensive understanding and new perspectives and explanations of the industry.

The place to find most analyses of the video game medium is not surprisingly game studies. Within the very young game studies field the most salient and refined research concerning the game medium, has been done by literary theorists. Game studies, as mentioned previously, contain numerous “colonial” research projects, i.e. perspectives that analyse the game medium with “external” theoretical perspectives, such as psychology, sociology, ethnography, anthropology but also media history, art, computer sciences, narratology, film studies and others. A central question that concerns practically all of these perspectives is what is a video game and what are its consequences? Media theorists should be the most competent people to answer those types of question, and indeed new media perspectives are adamant within game studies. A subgroup of the new media discipline has its roots in literary theory, and this perspective has been quite successful in the analysis of the game medium. Literary theory has, in line with post-structuralist thought, a very broad notion of text – a definition that includes practically any type of “signs”, i.e. images, film, sound etc., which makes the inclusion of video games as (interactive/dynamic/open) “texts” not surprising. Almost immediately the field has been dominated by two polemic perspectives: ludology and narratology. Ludology attempts to establish a new theory of video games, based on the unique game-like features of the game medium. Narratologists on the other hand rely on the extension and development of the established framework of narratology, which has been successfully applied to practically all forms of previous media forms, but also beyond in organizational studies, marketing, history, sociology and countless other fields. Consequently, narratology in game studies can be considered a “colonial theory”, which has been raised as criticism by its opponents.

The main theorists, Espen Aarseth within ludology and narratologist Janet Murray, have independently proposed fascinating and groundbreaking perspectives on the video game medium that shed light on aspects that have ramifications for all other perspectives concerned with video games. No other theorists have proposed equally extensive, as well as sophisticated, perspectives on the video game medium. The two theories differ in many aspects, but surprisingly many are shared despite a decade of polemics. In essence the differences are based on distinctive visions/paradigms of the game medium: ludologists want to develop simulational dynamic text
machines, while narratologists are searching for an interactive representational storytelling/narrative medium. The theoretical “implementations” of these paradigms cause significant differences in terms of medium, reader, writer and that elusive yet pivotal dimension of interactivity.

Ludologists see the medium as cybertexual, rule-based, material, dynamic text machines. *Cybertext* is one of Aarseth’s main theoretical concepts: *cyborg text* machines – mechanical and material machines that produce ergodic texts, which are texts that require mechanical input (beyond eye movements and page-turning). Actually, Aarseth’s theoretical framework encompasses all types of textual communication: from the several-thousand-year-old divination text *I Ching*, through hypertext novels, conversation programs, and MUDs to conventional codex books – these ergodic texts can all be described with Aarseth’s cybertext perspective (Aarseth 1997). To Aarseth, these ergodic texts contain *scriptons* (text that appears on screen/paper/physical medium), *textons* (potential text “hidden” inside the text machine) and *traversal functions* (tools for exploration of text machines) – concepts that define and describe the internal mechanical organization of texts as vital part of the medium. Building on these three components of dynamical texts, Aarseth creates a theory for analysing all types of “textual communication”. It is constituted by a framework of seven dimensions of textual mechanisms. Together these variables create a powerful analytical tool for defining text mechanisms, their characteristics and their effect on the textual communication between author, reader and text. It defines the behaviour of the scriptons/textons, their dynamics/linking, possibilities/access of the traversal function, and user functions. This last dimension is of particular relevance as it defines user functions (*interpretative, explorative, configurative or textonic*) in terms of user-based influence on the dynamic text mechanisms. It provides a stringent analysis of the user-text/player-game relationship based on the internal organization of the text, and replaces a clutter of fuzzy notions of “interactivity”.

Ludologists, most prominently Aarseth, oppose the hyperbolical, almost evangelical “post-modernised” discourse that surrounds many new media perspectives on video games/interactive texts. These claim, among many other things, the death of authority, authorship, emancipation of reader/audience/society, co-production by “*wreaders*” of interactive texts, endless sources of non-linear interactive texts/sign-spaces that redefine mass-medial communication – basically, a revolutionising media with infinite potential to fulfil the promises of a truly post-modern media form. Ludology is by no means reactionary (quite the opposite), but aims to bring down the level of analysis from “post-modern media vindications” to a more tangible level – ludology defines video games as mechanical machines, not metaphorically, but as material entities due to the materiality of
software. Other ludologists (Juul, Eskelinen, Frasca and others) have further developed the ludological focus on rules, play and simulation (Eskelinen 2001; Frasca 1999, 2001a, 2001b, 2003a, 2003b; Juul 2005). All emphasise a mechanical rule/system-based, machine-like nature of the game medium.

Narratologists view the video game medium primarily as a narrative storytelling medium. The focus and vision for the medium is to develop its narrative dimension. Most narratologists acknowledge that the current state of the video game medium is not satisfactory from a storytelling point of view, and aim to develop perspectives and frameworks that might improve this situation. Consequently, most narratological perspectives on the video game medium are based on yet unrealised and futuristic notions such as Virtual Reality, cyberspace, Holodeck or more generally digital/electronic environments (Laurel 1993; Murray 1997; Ryan 2001). Narratologists embrace and incorporate the new properties of the video game medium into their theoretical perspectives, since a classical linear definition of narrative would be incompatible with “non-linear” and “interactive” narrative characteristics. Instead of viewing this as a challenge (or even an impossibility, as its opponents would claim), narratologists see amazing narrative potential in interactive storytelling – basically, it can become the consummate narrative medium that adapts to the choices and preferences of the individual reader/user. Consequently, many of the narratological descriptions of the video game medium are centred around issues of immersion, interactivity (Ryan 2001), or procedural, participatory, spatial and encyclopaedic properties (Murray 1997). Others, stemming from the tradition of narrative media, most prominently film theorists (King & Krzywinska 2006), have also applied their theories to the video game medium. Due to the more extensive body of work within film studies in relation to games studies, in particular the formal analysis, and the visual similarities between the video game medium and film, some theorists (e.g. King and Krzywinska) conclude that the game medium is suitable for an analysis based on an extended/modified film theory framework.

The position of the reader of interactive texts/video games is one of the most contested and debated, due to the revolutionary and emancipatory claims being put forth by some new media theorists. In the narratological perspective the reader is an interactor (Murray 1997) – an active, post-modern self-reflective reader of a narrative landscape of choices and “what-if” scenarios. He or she is afforded a medium that provides new forms of reader aesthetics: immersion, agency and transformation as a result of interactivity. However, Murray and other narratologists complain about the current state of underdeveloped narrative agency in video games, and even go as far as to claim that game structures might even be counterproductive to narrative structures.
The overall focus of narratology is to position the reader in relation to the interactive narrative of the video game. In comparison with ludology the interactive reader is analysed more extensively, reflecting a narratological tradition of reader-focus.

Aarseth defines the reader with the more neutral label of *user*, since the reader is a “political” position created and maintained by the narratological perspective. The user/reader is a *cyborg* (cybernetic organism) where he or she becomes part of and is extended by a dynamic text machine. The position of the user in this cybernetic system depends on the internal organization of the dynamic text mechanisms. Four levels of user, and also developer, positions are given that range from interpretative exploration of the text to the possibility to add/extend the text or even modify the textual exploration (traversal) functions. This classification is based on the cybertextual framework and in particular the user position dimension, which stipulates the text exploration possibilities afforded to the user. Aarseth opposes the emancipatory/revolutionary claims concerning the reader and interactive texts, since technology and reading are merely tools in the hands of their users and can be used according to the users’ intentions, good or bad.

The position of the author is also under debate – is it “dead” as has been extensively claimed by many post-modern, poststructuralist and new media theorists? This line of reasoning is based on the assumption that the emancipation of the reader through interactive texts by definition dethrones the author from his or her privileged position of communicational power. Unfortunately, these types of claim ignore the position of technology/text which guard the flow of communication – “power” *i.e.* communication flows are directed, influenced and defined by technological properties of the text. In this regard both ludology and narratology agree – the ability of the reader/user to independently explore a dynamic text does not eliminate the position of authorship, or reduce it to the same level as the reader, thus transforming the reader into a wreader who writes/reads by exploring the interactive text. The positions of the user/interactor/reader and author are transformed by interactive texts, but the question is *how?* This question represents the major difference between the theories. Once again, Aarseth and the ludologists reiterate that the position of the author depends on the particular internal text organization that he/she has created, and that the position is dynamic and impossible to define in terms of a static communicational position. They also strongly protest against any notions of “interactive authorship” promoted by narratological perspectives, since it involves transferring the role of the author into the machine – a story generator that understands, analyses and dynamically adapts to the choices and preferences of the reader. The narratological perspective on the author is on the other hand comprehensive: Murray imagines a *procedural authorship*...
ship inspired by oral bards, Propp’s morphology objected/frames-oriented AI and “moral physics engines” (Murray 1997); Laurel presents a theatre-like “playwright” system that creates Aristotelian narrative drama wholes (Laurel 1993), while finally Ryan foresees a VR system that simulates narrative worlds (Ryan 2001).

These narratological perspectives share a belief that the computer/digital environment/cyberspace will be able to assume certain aspects of authorship by automating it. This provokes objections and debates from ludologists since they will always find automated storytelling technologically infeasible since it is impossible to predict, manipulate and adapt to the aesthetical and narrative preferences/responses of the reader/interactor/user – if film directors struggle with this assignment with a static narrative/passive audience, why should AI/computer systems be able to manage this task in real-time with a dynamic narrative and participative user? Besides this technological objection there is also a more literature-theoretical counterargument: when does a narrative become a simulation, or a play with options, where the user can take thousands upon thousands of decisions that influence the dynamic text? What is the point of “interactive narratives” if they bestow upon the user/reader a level of freedom that is more similar to a simulation of a reality rather than a representation of it? As famously compared by Aarseth, a game of football is not a narrative even though stories can be told about a football match. Murray, and other narratologists, respond by stating that an interactive narrative is an “authored environment” of “narrative possibilities” that are limited by the design of the digital environment.

Most of the differences between the two perspectives stem from the fundamentally different views on the elusive notion of interactivity. This is a concept that defines the game phenomenon on practically all levels: narratives, stories, fiction, media, entertainment, industry – all are frequently combined with the prefix interactive. This concept is also a salient concept of new media vernacular, where in many cases it epitomises all the wishes, visions and aspirations associated with new media – it signifies digital/computerised, personalised, democratic, many-to-many communication, (artificially) intelligent, adaptive, participative, non-hierarchical, network-oriented, egalitarian and countless other “positive” meanings. The term is not only industry jargon – in academia it is used in countless fields from highly technical (human-machine interaction, computer sciences etc.) to social sciences (communication, media, sociology etc.) and also the arts. Depending on application the concept has radically different meanings, which only emphasises the lack of a cohesive and stringent definition (Kiousis 2002).
Ludology, and primarily Aarseth, dedicates considerable effort to criticising the concept to the point of invalidating it. It lacks academic stringency, and attempts within new media (e.g. Lippman and Bøgh Andersen) provide definitions that are inconsistent, or that functionally equate the computer with its user, which would require considerable development of artificial intelligence to be feasible. The concept is unqualified to describe the game medium and particularly if it is combined with notions of narratives and/or fiction. Since fiction is a type of lie, Aarseth considers interactive fiction to be a lie of interactivity since a lie that continuously adapts to a believer who explores it by trial and error is no longer experiencing fiction but something completely different. Aarseth instead provides his cybernetic model that defines what in the text machine is affected by the user, how and with what type of mechanisms. Interactivity depends on the internal text organization – for instance, some hypertext novels, hailed as interactive narratives, are actually less “interactive” than a traditional codex text book since parts of the text are hidden behind restrictive access points (“riddles”) that must be solved before they can be read. Other dynamic texts, such as MUDs, allow the modification of texts and the creation of entire mechanisms within it. The focus, according to Aarseth, should be on defining the text mechanisms that “interact” with the user instead of hiding this communication within the fuzzy umbrella term “interactivity”.

Narratology, on the other hand, embraces interactivity fully into the core elements of their theoretical frameworks. Murray defines it as one of two dimensions: interactivity and immersion (Murray 1997). Interactivity consists of procedural and participative properties, yielding a definition of interactivity as the “codified rendering of responsive behaviours” which constitutes the primary representational property of the game medium (as photographic rendering of action and time is to camera and projector). Ryan these two dimensions also constitute a fundamental description of the medium. Ryan goes further and develops various types of interactivity: weak/selective (non-productive selection of text options) and strong/ productive (leaves “durable mark” on the text), that work on two levels: medium (or by technological support), and the other on a level intrinsic to the medium itself (e.g. the “Internet medium” vs. Internet text documents).

Ludology and Aarseth’s ultimate objective is to invalidate notions of “interactive narratives” and the application of narratological theories on the video game medium, by replacing it with a more game-focused perspective (the term ludology is derived from the Latin word for game, ludus) based on a rule-oriented, mechanical model of the game medium. The reason for this, according to Aarseth, is that the video game medium disrupts narrative communication by breaking the communication not only between author and narrator (“the voice of the narrative”) but also between
narratee (“the main character”) and reader. The author does not fully control the narrator (as in traditional narratives) because of the “interactivity”, while the reader/gamer loses traditional narrative communication with the narratee due to the disruptive communication style of video games – the text is explored by trial and error where the main character often dies, “loses a life” and resurrects in order to repeat (sometimes dozens of times) an identical text “passage” with the aim of solving a mission and advancing the text/game. The disruption is in both cases caused by its ergodic properties i.e. “interactivity”, and in Aarseth’s view invalidates the use of narrative as a model for video games. The search for an answer/solution and meaning, and the resulting insights/revelations within video games are according to Aarseth one of the medium’s most fundamental characteristics: aporia and epiphany – the master tropes of hypertext dynamics and the dialectics between searching and finding inside games in general. In those games that do contain some storytelling ambitions – as will be shown later this includes a vast number of cutting edge AAA games – Aarseth presents his final replacement piece of the puzzle: the intrigue. In those games which require the user’s character to take part in a type of “interactive narrative”, Aarseth finds it more theoretically rewarding to explain this communication as a type of structure where the intriguee (the user’s character) is the object of an intrigue created by an intriguant (a type of author with unknown position and with little interest in the outcome). The intrigue-intriguant-intriguee concept represents the final argument for substituting the erroneous notion of interactive narrative in the video game medium.

Murray, Ryan, Laurel and other narratologists are historically not as argumentative and confrontational as the ludologists. Narratologically inclined game theorists share a vision of the video game medium as essentially a storytelling medium that needs to shed its shackles of primitive shooting and racing and enter into a new world of interactive storytelling that will not only be on par with previous media forms but will exceed it in terms of narrative quality. It constitutes a genuine concern for the game medium, but also a fascination with the immense creative and innovative potential associated with it. This concern, however, is perceived as an arrogant form of theoretical colonialism from ludologists who share the fascination for the new medium, but differ on how to achieve its advancement: by means of storytelling or as a simulation/game? Does not the game medium represent a radical departure from all previous forms of narrative media and consequently deserve an original interpretation and theoretical framework?

The polemic evolved and started involving all of the main narratologists and ludologists. Ludology can be criticised for several things, among them as a zealous form of contrarianism to narratology. Most of its pro-
ponents have a background in literary/narrative theory. Furthermore, narratology accuses ludology of being a form of computer game formalism (part of structural narratology) with an extreme focus on structures that ignore aspects of visual context, appearance and symbolism. Narratologists might be accused of being detached from realistic perspectives on technology, but ludologists are sometimes excessively attached to the current state of game technology/medium. Aarseth’s cybertext perspective is practically devoid of 3D graphics and spatial dimensions – most of his theories are based on the text/prompter-based video games popular during the 1980s and up until the mid-1990s, when Aarseth’s cybertext theory was published. Aarseth, and ludologists, have extended and developed their perspectives to include these shortcomings, but they certainly lack the alluring and lucid visions of the narratologist camp, who all analyse a fascinating futuristic medium that is yet to be constructed. Narratology, on the other hand, can be accused of theoretical colonialism which expresses a concealed form of determinism: “if it’s media it must tell stories”, but also “it’s inevitable for narratives to become interactive”. Its visionary style also has its disadvantages – how does a developer transfer insights from the “moral physics engine” inside the Holodeck to pragmatic game design? The technologies of the future are most beautiful when they are beyond the current technological horizon.

But what on earth has this to do with the video game industry and the purpose of this study? In short: everything. If the game industry was all about business and technology, the future of the medium could be found deep inside the laboratories of leading technological institutes and corporations. But they are not – even mining equipment and medical equipment contain a pivotal dimension of aesthetics. This lesson was learnt the hard way by Swedish telecom giant Ericsson who could not understand to the bitter, almost bankrupt, end why people were not buying their technologically superior mobile phones instead of Nokia’s flashy models with slightly inferior technology. The difference was that Nokia understood very early the importance of good product design, user interfaces, attentive consumer-focus and innovation beyond just technology – all the fluffy aspects. In technology-intensive industries, particularly consumer-oriented varieties such as video games, these “fluffy” and soft aspects are of pivotal, and substantially more salient than technology in many cases, as will be shown later. Historically, the video game industry has been accused of being excessively focused on technology, where technologically sophisticated titles with abysmal gameplay were released. This is to some extent still a valid accusation, although the professionalised industry has evolved in its own esoteric direction where aspects of technology, aesthetics and fluffiness
(user experience, gameplay, storytelling etc.) are combined and reinforced by industrial/business mechanisms into a highly particular form of amalgamated video game techno-aesthetics.

To analyse these fluffy aspects and to explain why and how the industry has arrived at its current state, the insights gained from narratology and ludology are crucial. As mentioned earlier the industry has probably reached a point where its phenomenal growth will stop and not only the issue of continued expansion but also the future evolution of the medium must be dealt with. The industry is approaching a crossroads and must decide where it wants to go: subcultural industry of “interactive cinema” or simulational mass-medium? As will be shown later, the industry’s dilemma consists of continuing along a safe subcultural path, or attempting to transform the medium into a truly mainstream phenomenon – a significantly riskier proposition. Several other valid forms of explanation for this situation are possible: political economy, industrial dynamics, business strategy, marketing perspectives and numerous others. They could all provide rewarding answers to this study’s research question, but by highlighting various other aspects such as competitive advantage, industry clusters and countless others. Few of them, however, would involve the issue of medium, aesthetics and media communication. It is a fundamental belief of this study that these aspects cannot be artificially isolated from the analysis, but must be included at its core since they have paramount influence over the future of the medium and industry. This study attempts to provide the broadest possible explanation – and must therefore include these ephemeral and fluffy aspects of game aesthetics and narratology/ludology.

Let us begin by outlining the current state of the global video game industry. To put it bluntly, the video game industry is in many regards a dysfunctional and extremely path-dependent industry. It produces a repetitive and confined range of content based on the same handful of themes: stereotypical pre-modern polarised depictions of excessively violent, militarised, motorised and athletic masculinity that conquers over evil, predominantly in the shape of WW1 soldiers, wizards or aliens. This monothematical focus generates a perpetual cycle of increasingly ultra-expensive sequels and competitor-plagiarised “genre games”. Sequelisation stifles innovation while most innovation goes into the technological area with ever-increasing detail and visual photorealism. The industry predominantly targets a semi-adolescent subculture of young, affluent, white, men in the western hemisphere obsessed with themes of sport, violence, guns, wars, car racing, science-fiction and fantasy. The industry claims it has left the hardcore gamer era behind, but the myriad of hardcore titles and entire consoles (e.g. Xbox 360 and partially Playstation 3) tell a different story. Development and marketing costs escalate, creative innovation is stifled
by sequilisation, industry increasingly consolidates/integrates, but the business model stays the same—sell as many copies as possible using one window: retail sales. This situation is maintained by a mechanism of media business, technology and medium related factors.

What type of mechanism is this? The two main components are hard-core subcultural industry spiral and creative conservatism. The first concept describes a reoccurring mechanism within the industry that locks marketing strategies, business models, third party dynamics, media/content development and general console industry dynamics onto a path-dependent trajectory. It partially reflects the relationship between game hardware and (game) software since hardware sets the stage for and limits the possibilities of software. However, the industry spiral is mainly caused by industry strategies that are meant to reduce and manage the high intrinsic risk of the game industry. It is a powerful process that originates with the influential console manufacturers that design a console platform, which constitutes more than a technological platform but is mainly a business platform with a dynamic network of external industry stakeholders in the shape of third party developers and publishers. Console manufacturers set the (hardware) stage for (third party) game production, but also define target groups and specific content guidelines through content approval processes, influential in-house publishers and “recommendations” (e.g. “this is the season for network games!”). Consequently, the hardcore subcultural industry spiral becomes an industry discourse that is propagated from the console manufacturers, through publishers/developers, into the market and to the gamers. This process also leverages the business strategies of the console manufacturer: if X billions are invested in console development then third party publishers/developers are expected to provide content/titles that will quickly recoup this investment. This cost is ultimately paid by the gamers. The console manufacturer’s strategy determines development budgets, profit margins, pricing points and overall business environment for third party game development. The discourse is maintained, reinforced and modified as it disseminates through the industry out into the hardcore gamer subculture and back into the industry. The hardcore gets harder, while the vast majority of potential audiences are alienated and marginalised by the increasingly esoteric content and aesthetics. The hardcore subculture and the industry spiral are two formations with symbiotic relationship.

One of the main consequences, and also a contributor, to this industry spiral is the creative conservatism phenomenon. In short, it describes the state of innovation in the current industry landscape: a low level of creative innovation in terms of content, gameplay, marketing and medium, while maintaining an extremely fast-paced level of innovation in the areas of
technology, content variation (i.e. sequels) but also business models (e.g. MMOGs, in-game economies etc.) and advertising. It reveals the computer nerd/engineering origins of the game industry with a “don’t fix it if is not broke” attitude that is fully understandable: the growth and success of this industry is mindboggling and this creates a confidence bordering on arrogance – “a laddish hardcore mentality” as one of the executives interviewed during this study put it. It is a mixed type of creativity, partly extremely innovative and partly inhibited by an extreme form of rigid and formalistic conservatism.

Combined with the industry spiral this produces a dysfunctional path-dependent industry, whose inertia might halt the industry inside its current subcultural position, where it will only face inevitable decline unless the industry starts exploring true creative innovation that will redefine the medium, attract new audiences and expand the medium beyond its current subculture into a global mainstream mass-media culture similar to books, music, film or “Internet”. The explosively fast adoption by “mainstream” society of various new Internet/media trend technologies (blogs, chat, social networks, micro-blogging etc.) proves that it does not take a century to build up the momentum of the traditional cultural industries, at least in terms of adoption, cultural impact and overall popularity.

This study will later show that this situation of a hardcore subcultural industry spiral of creative conservatism is upheld and aggravated by a collective, institutionalised and massive case of inferiority complex towards the film medium and its industry – “cinematic jealousy” as it is later defined. It is expressed inside the game industry as a relentless (historical) comparison to Hollywood/the film industry, in terms of production, industry and most importantly medium. It is as if the game industry has gladly embraced the epithet “bastard stepchild of the film industry” (Martin 2010), not fully realising that it is used pejoratively. This phenomenon is not limited to a type of symbolical positioning within cultural industries, but has tangible and extensive repercussions on the development of the video game medium. Most vividly it is manifested by what this study calls the interactive cinema vision. In short it is a vision of the video game medium as an interactive, cinematic, narrative storytelling medium – an interactive cinema medium. It is being implemented with various technologies and with mixed success. Increasingly the game industry is investing vast resources into fulfilling the dream of an interactive form of cinema where the gamer can “finally” take charge of the main character and the story line and create a movie of their own. To achieve this objective, thousands of hours of dialogue and motion capture scenes are recorded with real actors to produce film sequences (fms) inside the game, based on stories in extensive “script trees” written by professional Hollywood scriptwriters. Even though this
type ("aaa games") of extremely expensive production does not represent
the quantitative majority of game title releases, it represents the qualitative
majority in the state-of-the-video-game-art. These are the most influential
cutting edge titles that develop genres, medium and audiences. Their high
development and marketing budgets also require hit sales to recoup – if/
when this happens as a result of massive advertising campaigns, it strongly
reinforces the “validity” of interactive cinema in the upper creative and
management echelons of the industry, and as a consequence a “safe sure-
bet” sequel starts looming in the production pipeline.

The problem with interactive cinema-type titles is that they rarely pro-
vide innovation in terms of gameplay mechanisms – the ergodic internal
mechanisms of the video game text. Visually impressive as they might be
with almost photo-realistic graphics (even of human bodies and faces),
these interactive cinema “decorations” are glued on top of the same type
of gameplay mechanisms that have dominated the industry for decades,
usually variations of the fps (First Person Shooter). This is creative con-
servatism in action – impressive visuals, new story spaces, but underneath
lurks the same types of textual mechanism. Even in terms of narratol-
ogy, the interactive cinema vision is dubious. Although sympathetic to
the narratologic notion of video games as a storytelling medium, these
interactive cinema games are by no means story generators, “Holodecks”
or “playwrights”. An impressive set of video sequences of quasi-photo re-
alistic game graphics does not magically generate “interactive narratives”.
It is merely a branching hypertext/media tree of video sequence nodes
not much different from hypertext novels from the 1970s in terms of text
mechanisms, as any ludologist would be quick to point out. Furthermore,
even if the production of these interactive cinema branching story trees
were to somehow be automated by some miraculous space age technology,
would not that in the end produce a… simulator, a machine that produces
the possibility to explore a multitude of perspectives and decisions? Con-
sequently, the interactive cinema vision does not contribute to the devel-
opment of a narratological or ludological vision of the game medium. Nor
does the sea of sequels and copycat competitors that follow the interactive
 cinema games.

Why is the industry chasing this vision? Is it a phantom, an unobtain-
able Holy Grail of a rainbow vision? Why is it all about fantasy dragons,
intergalactic warfare, monotonous street racing and substandard imita-
tions of B-movie dramaturgy? Why is this interactive cinema consid-
ered by many in the industry to be the future of the video game medium?
Thankfully, there are alternatives in the marketplace, but what are they and
what is their impact? What type of vision are the alternatives presenting in
terms of redefining the medium and expanding the audiences?
These questions cannot be answered by theories from cultural industries, marketing, political economy, industrial dynamics or other fields – they require a comprehensive perspective that incorporates media aspects into its analysis. It can be found in game studies and particularly narratology and ludology. The video game industry has reached a crucial and extremely decisive point in its history: an exhausted hardcore gamer era has probably stopped expanding, alternatives (casual games) exist but are hardly as lucid. Where is the industry heading? Will it continue dysfuntionally supporting the same hardcore subculture that has successfully developed it into a $76 billion industry? Or will the industry redefine its own medium, find new visions and paradigms that will broaden the audiences and develop it into a truly universal and global medium, and multiply the industry size? Can any insights be gained from other cultural industries with similar subcultural dynamics, such as the comics industry, or historically the film industry? The game industry is on the verge of breaking out of its subcultural position into the mainstream and becoming one of the truly great media in history – bigger, more captivating, more educational, more profitable and most importantly, more entertaining than all previous media forms. Can the industry accomplish this? And finally: is the decades-old interactive cinema vision the correct paradigm for this new post-hardcore era that will bring the medium into the mainstream?

All of these questions, and more, will be answered in the following chapters.
THE AIMS of this study is to broadly and extensively analyse the video game industry and its dynamic. This could be performed with any major perspective within business/economy: organizational studies, industrial dynamics, cultural industries, strategy management, industrial economics, economic history etc. Every perspective would describe the industry in a different way and rewarding answer different sets of questions as defined by the major tenets of their respective fields. However, what these perspectives would most likely provide is confirmation, reapplication and extension of their own beliefs – theoretical “colonialism” as discussed previously. The disadvantages of this approach are lack of theoretical originality, while the advantages are given by the theoretical wealth and maturity of established perspectives. In order to find a novel approach and an unexplored theoretical niche within this landscape of potential industry analysis, this study turns to one of the obvious “white spaces”: the medium. It is not only a case of conveniently relying on originality, but this focus also makes sense from an industrial and analytical point of view. The question should rather be inverted: why should not the medium be included in the analysis of the industry?

This study is a Quixotic attempt to combine possibly disparate, but blatantly interconnected, dimensions of the game medium, production and industry: aesthetics and production/economy are intimately interlinked. Although this trivial relation is a theoretical foundation of cultural economics (Caves 2000) it is rarely attacked head-on due to a fundamental obstacle: de gustibus non est disputandum – there is no disputing about tastes. Since the definition of a “good” video game as opposed to a “bad” one, is such an extremely subjective opinion it is kept outside the analytical and academic research of cultural industries/games studies. There is indeed no academic point to discussing the merits of such fickle personal topics as aesthetic video games preferences. Nevertheless, those who understand this interconnected logic are those who are successful artistically as well as profitable: a “good” game receives positive reviews and enjoys impressive sales. Bad ones do not. This study does not attempt to define “good games”,
but endeavours to analyse the medium and find clues to production-oriented, industrial mechanisms. It is a rewarding study to explore this intersection and find nuances, mechanisms and explanations beyond those provided by perspectives that avoid this pivotal issue. Although this might be framed as a typical marketing inquiry into the video games market, it will be elaborated later that this is only partially part of the explanation.

Consequently, the question for this thesis study is as follows:

How does the global mainstream video game industry (predominantly game console centric) relate to its own (video game) product, in terms of communication and media dimensions, and what are the (business) consequences, in terms of production, strategy and commercial/creative innovation, of this relationship?

Some clarifications are needed: this study focuses on the commercial, i.e. profit-driven, side of the video game industry. As mentioned previously, this probably (due to lack of reliable research) represents a minority of the entire industry – there are countless “invisible” game developers who “invest” in development using their own “free” labour and extremely scarce resources. The reason for focusing on the profitable and “global mainstream” industry (i.e. the recognised and established segment with global reach) is analytical realpolitik: the commercial side is by far the most influential in terms of impact, budgets, popularity, sales and media development. Within this commercial industry the most professional and business-oriented are those within the video game console segment. Other platforms such as PC/Mac, handheld consoles, web games, mobile games, etc are indeed included in this study, but their business models are in most cases merely slight modifications of the game console model, and their importance and impact is significantly lower. Furthermore, this study includes partially but not extensively the impact of online games, which during the last decade have become a major profit generator. However, as mentioned at the beginning of this chapter, they are the subjects of a vast majority of game research done over the past decade, due to the alluring research prospect of unexplored online societies. From a business point of view they differ on three major points: development budgets (significantly larger due to increased complexity), service production (maintaining online service infrastructure) and subscription revenues. Interesting research in this field has already been done (Zackariasson 2007). Nevertheless, the issues that are raised in this study are also highly relevant and applicable to this sector.

The study focuses on the relationship between the industry and its own product in terms of communication and media dimensions, which are, among many others: what are video games all about according to the industry? What is interactive entertainment? Is it a text? What is the role of
the developer/author and reader/gamer? What similarities can be found in relation to other media forms? What are the major paradigms and guiding visions for this industry?

And finally, the “consequences of this relationship” are reflected in the entire industry, but the focus in this study is on three key areas, since they are most affected: production (development), strategy (mainly marketing of consoles and/or games) and commercial/creative innovation (product innovation and game content).
METHODOLOGICAL DESCRIPTION

This will (hopefully) be the only chapter where this study uses the less scientific form of the personal pronoun “I”. I have chosen this form since the choice of methodology, contrary to many claims, is a highly subjective and personal one. One does not select “the best” methodology, but a methodology that “feels” right according to deeper personal convictions concerning knowledge creation, science, epistemology and ontology, and is the result of numerous factors such as upbringing, education and scientific influences. I have chosen my own personal interpretation of established methodologies that “resonate” with my fundamental scientific beliefs.

INSTRUMENTS/DATA COLLECTION

The instruments used in this study are interviews and secondary-data collection. This empirical data has been collected from several different sources such as interviews with industry professionals and representatives of video game related associations and organizations, video game industry conferences, literature and trade magazine studies, online news sources, annual reports for various video game company resources, online discussion forums and similar. The primary data-collection instruments were semi-structured interviews with video game industry professionals, industry organizations, organizations associated with the video game industry, and finally video gamers, who in total number 28.

The first phase of the study was part of my Master Thesis. During this first empirical phase, general and fundamental data and insights were gathered in interviews with game developer company executives and game developer programmers, complemented with extensive literature studies during 2002. The interviews were always conducted at the offices of the game developer companies, and ranged from 30 minutes to 2 hours. The interviews were recorded and notes were taken as well. Subjects were chosen according to company size, experience and managerial position with
insights into the business and management aspects of the industry. The rationale of these selection criteria was the assumption that senior professionals responsible for business aspects would be the most knowledgeable and fruitful interview subjects for issues concerning business aspects. This first empirical phase resulted in general insights about the structure, processes and dynamics of the game industry, which I incorporated into my Master Thesis and later expanded into the book Polygonmakarna – Spelbranshens högteknologiska upplevelseekonomi (2003), which has, among others, been used as literature for several undergraduate courses at the Royal Institute of Technology in Stockholm.

The second empirical phase of my research project, which was initiated in the fall of 2003 after the completion of the Polygonmakarna book project delved deeper into more fundamental issues of the industry and its market. I wanted to identify and explore issues affecting the industry, and the origin of these, I discovered, was not necessarily always internal, but quite often external to the industry. Hence, this phase required a broader perspective. In connection with various papers and my ongoing thesis project, I collected empirical data continuously from different industry professionals, and also extended the scope to organizations related to the game industry in various degrees. During the process of researching for a conference paper I also collected data, using (quasi-)unstructured interviews, from consumers i.e. gamers. Throughout my research project I have had contact with the gaming community, either directly or through secondary sources such as online discussion forums. This data source provided insights into the global gaming (sub)culture and its discourses, which extensively affects, on many levels, the dynamics of the video game industry.

It was during the second empirical phase that I decided to focus on the fundamental tensions in this expansive industry. To fully understand this industry it is necessary to understand the medium of video games and the challenges, tensions and logic associated with its creation. The theoretical perspectives that I had amassed during the course of my entire research studies evolved my understanding of the previously collected empirical data and I decided to conduct a third round of interviews to focus more extensively on narrower issues and tensions elucidated by the previous empirical phases. During this phase I also used semi-structured interviews and continued interviewing game industry professionals, chiefly executives.

When analysing my interviews I have transcribed the recordings manually. I have not found it useful to make use of software tools to structure my transcribed data into larger groupings. I have instead chosen to highlight different interesting segments with colour codes (in Microsoft Word) for easy retrieval, as more complex structuring has not been needed for this study.
THEORETICAL INTERSTICES WITHIN METHODOLOGY

There are several theoretical interstices and influences within methodology that have guided me through the process of analysing and exploring the video game industry and its medium: frivolity, empirical approaches, qualitative research and social constructionism.

Frivolity

During the summer of 2002 I became associated with the Pink Machine project at the Department of Industrial Economics and Management of the Royal Institute of Technology in Stockholm. The Pink Machine project was lead by Professor Claes Gustafsson and Alf Rehn, and involved nine research fellows. It focused on phenomena where “unserious” notions of frivolity, play and entertainment are combined with “serious” notions of economy and technology. These issues are found in several areas of research: improvisation in project management (Gustafsson & Lindahl 2001), roller coaster rides (Csarmann 2003), aesthetics of software writing (Piñeiro 2003), computer viruses (Görling 2004), electronic gift economies (Rehn 2001) and finally the video game industry (Dymek 2004a, 2004b, 2005b; Dymek & Bergvall 2004; Dymek & Rehn 2003) – a phenomenon which impressively contains all of the perspectives of the project: technology, culture, frivolity, play and alternative rationalities.

The foundation and genesis of my project is the work done by Gustafsson (1994), which focuses on the moralising dynamic of academic activity. Why is it that business studies have historically analysed “serious” and “useful” industries? Why is the automotive or energy sector overanalysed when many “frivolous industries” (such as the game industry) are barely noticed by academia? The central argument is that academic activity, and in particular economic research, creates moral hierarchies of seriousness and usefulness. While this could have become a central theme in my project it has not since it would involve other priorities and frameworks: the philosophy, sociology and essence of play in games have been analysed by many prominent theorists (Caillois 2001; Huizinga 1998; Suits 1978; Sutton-Smith 1997) and could have been theoretical components of my project. However, the point of this study is not to define why people play, and what play is, but rather the more earthly aspect of how the manifestations of play are produced in a commercial setting such as the video game industry. In other words, these theories are rewarding, but not on the analytical level of this study.

Admittedly, this research project is a highly qualitative research project and consequently this approach affects methodological issues. This is not
unique: a large proportion of Scandinavian management and business research studies are performed within the boundaries of qualitative research. A preferred method of writing a thesis in this tradition is in essay form, with its increased focus on purveying a cohesive narrative of qualitative arguments and considerations in a developed line of thought, instead of the opposite which is seen, in slightly exaggerated terms, as more report-oriented thesis forms where text structure is presented according to traditional perspectives with isolated and highly specialised chapters. This form of writing increases the readability of the thesis and its line of argumentation for those adhering to such a tradition, but does not necessarily always constitute interesting reading.

**Empirical Approach**

This study is in essence based on empirical research *i.e.* founded on observing, experiencing and engaging with this social reality. I find the best way to approach social processes and phenomena, from a research point of view, is to observe them myself, or through secondary sources who have documented their observations. Experiencing and engaging with reality involves talking, interviewing and participating in the activities that constitute part of the observed social phenomena. I believe in being close to reality, instead of distancing myself from it by simulating or hypothesising around this reality. This is fully in line with the Scandinavian business/management research tradition, which is predominantly qualitatively empirically oriented.

My personal preference and interpretation is to focus on the *material* dimension: things I can touch with my hands such as documents, people, video games, technological artefacts and similar. The easiest way to analyse a culture is to first study its physical manifestations and then continue with more ephemeral aspects such as statements, interpretations and perspectives. Material perspectives within methodology have their roots in the philosophies of the Age of Enlightenment with its fundamental dualistic dichotomy of material vs. spiritual (Christians 2000). My intention is to study how people (developers, publishers and others) create a physical technological artefact (video game) using tools, documents and mechanisms (with physical manifestations). Some claim that studies of material goods, artefacts and technologies are predominantly esoteric and focused on highly specialised topics, and propose that:
[...] the study of physical objects, memorials, and technologies be thoroughly incorporated into more general field studies of work organizations, informal settings, cultural production, domestic settings, and so forth.

(Atkinson & Delmont 2000)

I fully agree with this statement that technologies and physical objects need to be more thoroughly incorporated into the study of cultural production. What could be more relevant in one of the most technologically focused of cultural industries, the game industry? Technology and its material dimensions must be incorporated into a comprehensive study of the (cultural) economy of video games. Nevertheless, this does not mean that I refrain from theoretical analysis of the culture that surrounds its material “foundation”. The material has no significance without culture, which gives it meaning, function and purpose.

A research method that is (predominantly) qualitative, material and highly empirically oriented within social sciences is the perspective of grounded theory (GT). The GT perspective is based on a highly empirical collection of data (usually text), which is then divided into important key “codes”, further grouped into “concepts” and “categories” and finally a “theory” as described by Glaser and Strauss in their famous book *The discovery of grounded theory: strategies for qualitative research* (1967) or more specifically in the case of business and management research (Goulding 2002). I strongly concur with many of the fundamental “bottom-up” assumptions of the GT approach. Qualitative research should most definitely be based on strong empirical data and the generation of new theory should be based on empirical data and the new theory should fit this empirical data and increase its workability, relevance and modifiability. It requires a *tabula rasa* like approach where many initial phases of the research process are “isolated” theoretically with no pre-research literature review (Gummesson 1991, p. 55). However, I do not fully subscribe to the entire GT approach with its specific guidelines for how to encode data, groups this data, increase the abstraction again by grouping the groupings etc, as described by many of its followers. In my view, this approach assumes an almost positivistic hierarchical characteristic of all knowledge and theory generation, which is epistemologically challenging. According to the GT perspective all knowledge can, should and must be organized in a hierarchical fashion – a characteristic that I do not find universally applicable – at least not in my research project.
The most relevant insight from the GT perspective in my project has been the inductive, bottom-up oriented approach to theory. Inductive research within social sciences, and particularly economics, has been strongly influenced by John Stuart Mill’s philosophies of utilitarianism:

In the pursuit of truth, generalizing and synthesizing are necessary to advance inductively from the known to the unknown. Mill seeks to establish this function of logic as inference from the known, rather than certifying the rules for formal consistency in reasoning.

(Christians 2000)

This study adheres to this logic by focusing on the “known” and using this knowledge to explore the unknown, instead of creating knowledge about the unknown using hypothetical assumptions consistent with previous logical assumption concerning related topics. However, purely inductive research assumes a tabula rasa disregard for pre-existing knowledge and theories, which is practically impossible in my case. Similarly, my project is not pure deduction research either, since my analysis is strongly guided by my empirical data. Alvesson and Sköldberg (1994) claim that most researchers erroneously assume that induction and deduction are antipodes, but that both are frequently and simultaneously used. Abduction is probably closest to my form of research, being a form of synthesis between the two forms, which is similar to the notion of fit within GT: abduction produces reasoning often based on incomplete sets of data and indicating a hypothesis/theory that is the likeliest possible explanation for the set.

**Qualitative Research**

My research project is highly qualitative. A good definition of this type of research is:

Qualitative research is a situated activity that locates the observer in the world. It consists of a set of interpretative, material practises that make the world visible. These practises transform the world.

(Denzin & Lincoln 2000)

Qualitative is the opposite of quantitative research. Qualitative research asks why and how instead of why and how many, as in quantitative research. I respect and even include some quantitative research in my study with indicative purposes, but generally I do not subscribe to the “magic of numbers”. Quantitative research assumes that every scientific inquiry can be quantified i.e. turned into numbers, which later using the supreme tools of statistics is transformed into “truth” crystallised as mathematical functions.
that propose a perspective of reality with mesmerising beauty and simplicity (behind all the layers of complex equations). I do not subscribe to this perspective on research, not only because of these incompatible epistemological assumptions, but also since the most decisive (and joyful) process of interpretation is reduced to a mathematical exercise, instead of being a highly exploratory process of imagination, creativity, and association in combination with rigorous theoretical framing and grounding. According to Denzin and Lincoln (2000), the difference between qualitative and quantitative research methodology can be described using the following five points of differences:

1. *Use of positivism and post-positivism.* What many tend to forget is that qualitative research started within the positivist paradigm, but has transitioned into a post-positivist way of capturing reality with multiple methods and approaches including post-modernist thought which denounces both perspectives. This cannot be said about quantitative research.

2. *Acceptance of post-modern sensibilities.* Quantitative research rarely acknowledges the post-modern turn within practically all major social sciences during the last forty years. A positivist belief in mathematically deduced “truth” does not resonate well with post-modern doubt, irony, fragmented, multiple and intertextualised views on reality.

3. *Capturing the individual’s point of view.* Qualitative and quantitative are not necessarily very different in this point. The main difference is its manifestation: quantitative want more accurate and “truthful” data from individuals, but qualitative claims to be closer by relying on interviews and observations instead of statistical data collection.

4. *Examining the constraints of everyday life.* Qualitative research gets closer to the “action” by embracing and acknowledging subjects of everyday life that affect many, or, in other cases, only a small population. Quantitative research on the other hand endeavours to provide statistically proven general theories that concern a very large population.

5. *Securing rich descriptions.* Qualitative research believes that rich descriptions provide insights and research values. Quantitative research believes that more statistical data provides more insights.

My research aims to ask questions and elaborate and problematise topics and insights that I discover during my research. My intention is to explore,
describe and interpret my empirical data and research – much in line with the Geertzian notion of *thick description* (Geertz 1973). An interpretive perspective is basically a *sine qua non* for qualitative research. Data and theories are interpreted, which later guide and affect my further interpretation of new data and theories, giving rise to a hermeneutic circle: (Alvesson & Sköldberg 2000; Kincheloe & McLaren 2000; Smith & Hodkinson 2000). It is an approach to the analysis of texts that stresses how prior understandings and prejudices shape the interpretive process.

The problem with this kind of highly qualitative research is the limited possibility for comparison. The problem resides in its fuzzy and “custom made” research methodology, requiring that every assumption be closely examined. Instead of focusing on whether someone has followed every particular detail of a highly specific methodology (such as GT or certain discourse analysis methods), this type of qualitative methodology requires a more thorough examination of every assumption in the thesis that is deemed relevant by me, and what assumptions have been omitted.

**Social Constructionism**

As with most business/management/organization studies research in Scandinavia, I subscribe to the notion of *social constructionism*. This is a compelling theory that claims that reality as we perceive it is socially constructed, *i.e.* created by a social group who share a set of beliefs. This theory partially answers the question of what “reality” is and how it is shaped.

The notion of social constructionism was launched by Peter L. Berger and Thomas Luckman in their highly influential and seminal book *The Social Construction of Reality – A treatise in the sociology of knowledge* (1967), in which the authors argue that all knowledge, including basic knowledge of everyday reality, is generated and maintained by social interactions. The central notion here is *reality*, which is seen as a more fundamental concept than simply an “agglomeration of knowledge” within different social contexts:

Sociological interest in questions of “reality” and “knowledge” is thus initially justified by the fact of their social relativity. What is “real” to a Tibetan monk may not be “real” to an American businessman. The “knowledge” of the criminal differs from the “knowledge” of the criminologist. It follows that specific agglomerations of “reality” and “knowledge” pertain to specific social contexts, and that these relationships will have to be included in an adequate sociological analysis of these contexts. The need for “sociology of knowledge” is thus already given with the observable differences between societies in terms of what is taken for granted as “knowledge” in them. Beyond this,
however, a discipline calling itself by this name will have to concern itself with the general ways by which “realities” are taken as “known” in human societies. In other words, a “sociology of knowledge” will have to deal not only with the empirical variety of “knowledge” in human societies, but also with the processes by which any body of “knowledge” comes to be socially established as “reality”.

(Berger & Luckmann 1967, p. 3)

Berger and Luckman endeavour to identify the fundamental processes by which any knowledge establishes itself as reality, and not only the varying spectrum of knowledge agglomerations that exist in every society. Their study is therefore a more nuanced and bold attempt to define and represent more clearly the fundamental consequences of relativistic philosophy within social sciences, and sociology in particular.

Berger and Luckman go to great lengths to intricately describe how in their opinion social interactions are shaping our perception of reality through different processes such as *objectivation*, *institutionalisation*, *legitimation*, *internalisation* and different degrees of *socialisation*, and what the consequences are to for sociology:

The analyses of objectivation, institutionalization and legitimation are directly applicable to the problems of the sociology of language, the theory of social action and institutions, and the sociology of religion. Our understanding of the sociology of knowledge leads to the conclusion that the sociologies of language and religion cannot be considered peripheral specialties of little interest to sociological theory as such, but have essential contribution to make to it.

(Berger & Luckmann 1967, p. 185)

The authors stress in this quote that their account of the sociology of knowledge, and its inner workings, have effects on how we perceive language, actions, institutions and religion and consequently is applicable to a vast selection of fields within the social sciences, making this theory considerably fundamental for this type of science.

In my research project I find it rewarding to assume a social constructionist approach as my fundamental perspective on social science and research methodology. For me, and my research project, it is considerably more fruitful to adopt such a perspective as this diametrically changes the way important questions are asked during the research process. Instead of asking: “Can I prove that my subject is telling the truth?” – it is more appropriate to ask the question: “How can I explain what my subject is telling me?”. Ontology, the notion of “truth” and its possible extra-human existence is of great importance, but establishing links to these notions is
not always the central component of conducting social science research – and in particular my kind of research. What is more important is to find the “local” truths, their logic and how to explain them.

Social constructionism has its limits though. Due to its prevalence in many social sciences and its numerous interpretations and applications, its meaning has, as a consequence, begun to deteriorate according to Ian Hacking’s renowned *The social construction of what?* (1999), where he does not reject the notion of social construction, but claims that the umbrella term of “social construction” is far too broad to be discussed (or dismissed) as a single concept. The term “social construction” should therefore be carefully analysed and applied prior to becoming a central component in the theoretical framework of a thesis.

**MAJOR THEORETICAL FRAMEWORKS**

A number of major theoretical frameworks and important theoretical concepts will be applied in this study. These have inevitably indirectly affected my perception of research method and approach to scientific inquiry.

*Industrial/Economy, Business/Organization/Management Studies*

Although not within its mainstream this study is part of the broad field of economy, and more specifically industrial economy. My background (M.Sc.) is the field of industrial economy from the Royal Institute of Technology, where engineering/technology and a “hard” foundation of quantitative economics is combined with a “soft” supplement consisting of organization, management and business studies. It is this latter “softer dimension” that this study focuses on. Due to the interdisciplinary and qualitatively eclectic approach of this study, it does not easily fall into a strict categorisation of industrial economy, organization/management or business studies – this study is a cross-disciplinary inquiry into the economy and industry of video games. It can be considered part of games studies, although there is no established discipline of video games economy/ics. Fundamental industrial economy based cost and investment analysis will be presented in later chapters to illustrate certain pivotal mechanisms within the industry, and particularly the intricate consequences of the financing function. Furthermore, the focus of this study is firmly on the industrial dimensions of the video game phenomenon. Nevertheless, it cannot be categorised as a fully fledged industrial economics thesis.
Games studies is a new discipline that since the late 1980s has analysed all aspects concerning the video game phenomenon: from its technology (Saltzman 1999), through its design and production (Charles et al. 2005) to media, literary theory (Brand & Knight 2005; Frasca 2003a; Mateas & Stern 2005; Murray 2005; Pearce 2005), sociology and many others. Initially, it was dominated by new media theories that had studied digital texts much longer, but with time game studies has begun to establish itself as an independent field. Literary theorists have always dominated prominent perspectives on issues at the intersection of new media, digital texts and video games. As will be shown in the second part of this thesis, one of the main theoretical frameworks in my study have been two perspectives from the field of game studies and literary theory: ludology and narratology. Ludology is predominantly represented by the writings of Espen Aarseth (Aarseth 1997), while narratology consists of several theorists, the most prominent being those of Janet Murray (Murray 1997). Although this is an investigation into the economy of video games, I have based much of my theoretical framework and analysis on literary theory. This discipline, and in particular the subcategory focusing on video games, provides extremely fascinating perspectives on the game medium and the relation between author/developer, medium/text and reader/gamer. It also sheds light on the elusive notion of “interactivity” which has tremendous salience not only in this industry but also within game studies. These insights provide further impetus for analysing more broadly the cultural industry of video games. The second part of this thesis will be presented like a literature review of literary theories, combined with an extensive and critical analysis of its claims and with my own perspectives on issues raised by these claims. By examining these theories separately several unique insights will be gained, and consequently an analysis of the game medium will be performed. This analysis will also involve the analysis of other ludological perspectives, film theory approaches, new media theories and affiliated perspectives.

Cultural/Media Industries

Video games can be seen as a category of cultural industries since they constitute a new media form (Hesmondhalgh 2002). Although even a child playing video games can see the resemblance to television and/or film, it is not obvious that the game industry can be considered to be one. The issue of media industries has been salient since the influential work of the Frankfurt school of critical theory. It has developed into a broad spectrum of approaches due to the plethora of relevant issues: communica-
tion, cultural evolution, emancipation, education, enlightenment, political power, technology, democracy etc. The game industry will be thoroughly analysed using theoretical tools provided from this broad field of cultural industries, and more specifically culture economics and its more qualitatively oriented theories put forward by Caves (2000). An analysis of the video game industry from a cultural industries perspective will be presented, as well as an evaluation of these models as answers to the research question of this study.

Secondary Inspiration Sources/Theories

Other less dominant sources from new media studies, hypertext studies and film studies are applied to elaborated relevant perspectives from affiliated fields – particularly Bolter and Grusin’s prominent remediation theory (Bolter & Grusin 1999). In addition, Bourdieu’s prominent sociological theories are applied to illustrate a claim concerning the pop/low culture status of the game medium/industry.

CORE CONCEPTS

Industry

It is assumed that the video game industry, i.e. producers of video games, constitutes a cohesive and well-organized entity – it does not. The video game industry is a loose alliance of a plethora of different types of organizations and companies scattered all around the globe, rarely with governmental support (like most major industries, including cultural) or central industry organizations – a peculiar patchwork of highly independent small to midsize companies. Many companies work at the intersection of other industries/clients (graphics, sound, animation, software technologies etc). Furthermore, most game developers in the world are “invisible” and driven by enthusiasts who one day attempt to enter the video game industry. Similarly, reliable statistics and data from the entire industry have been scarce and often incomplete geographically. As the industry has matured and professionalised this situation has improved somewhat, but still remains underdeveloped. This study identifies a number of fundamental categories of companies active in this industry: console manufacturers, publishers, developers, distributors and retailers. Most of the thesis will be focused on analysing the activities of these categories.
Throughout this study the term *video game medium*, or just *medium*, will be used quite frequently. The second part of the study will analyse in more detail what the video game medium is. In this study it is used in the context of a communication platform that is created by an author/developer and then communicated/transmitted to a wider range of users/gamers that read/use the medium. A commonsensical approach is that the medium is usually displayed on television/computer screens, is based on digital hardware/software and involves input from users/gamers in a process usually referred to as “interactivity”. As will be shown, practically all of these assumptions can be questioned, redefined and replaced by more rewarding concepts. It is also assumed that video games *can* be treated as a mass-medium, and not merely as play, dance, sport, collaborative process etc. The medium is created by a number of stakeholders who all perceive and use the medium differently: the “medium” is different for a scholar, publisher, developer, not to mention different types of gamers, or casual non-hardcore gamers. This study will not elaborate all contextual perceptions of the game medium, but will focus on the views inside the industry and how these can be interpreted using the existing theoretical perspectives within game studies.

*Interactivity*

This concept is practically *the* most salient concept in game studies, and the entire industry, which sometimes refers to itself as an “interactive entertainment industry” that produces an “interactive medium”, and even sometimes “interactive narratives” which are characterised by their “non-linearity”. In many regards the notion of interactivity cuts to the most pivotal of cores of the video game phenomenon: it is the difference that makes it stand out from all other media forms, and perhaps even provides revolutionary possibilities that can redefine communication and media as we know it – the ultimate personal, individualised and engaging form of communication, yet, no one can define and explain its magic. There is indeed something that provides “interactivity”, but what is it, who generates it, who is the author, who “reads” it, what is interacting with what, what is the difference compared to a reactive medium, and what are the consequences of all this? All of these questions will be answered in his study.
Author/Developer, Reader/Gamer

If the video game is a “text” then its author is the developer and its reader is the gamer. The author, reader and text form a fundamental trio concept for the analysis of all forms of media. In the case of video games, their fundamental property of interactivity causes this trio to be disputed and redefined: is it possible to speak of an author if the reader decides how, when and in what sequence to read the text? Is the author consequently dead, has the reader become both reader and author (wreader) and is the text a reader-emancipative weapon (“wreapon”)? Others transfer some, or all, of the author “into the machine” – is the medium perhaps becoming the new author? Interactivity seems to wreak havoc on the entire communication triangle. This is also vital from an economy perspective as the author-reader dichotomy is matched by the producer-consumer equivalent. Interactivity in this case does not transform the roles in conventional game production, but in some specific cases, e.g. MMOGs, most of the “value” is created by other gamers in the online world, and users are able to create and build objects inside the world, which blurs the boundaries between producer and consumer. The developer/author provides “tools”, i.e. the interactive games that are used by gamers/readers to experience play, entertainment and fun. All of these aspects will be analysed.

LIMITATIONS

There are some empirical and theoretical limitations to this study. Most of the relevant empirical data of this study has been predominantly collected in Sweden. I am based in Sweden and have mainly interviewed Swedish game professionals, but also from some other countries (Canada, Japan, UK, Poland). Sweden is not a bad place to conduct a study since the game industry is big in Sweden, but primarily (practically only…) with game development – there are no publishers or console manufacturers in this country. Nevertheless, I have attempted to remedy this situation with reliable secondary data collected from a broad range of sources.

Due to conflicting wishes of interviewees concerning anonymity I have taken the decision to anonymise every respondent in the study. Respondents will only be presented by their professional titles and date of interview. This has been done to avoid any legal/ethical problems. The reason for anonymisation is quite understandable in this highly secretive and perhaps even paranoid industry.

The focus in this study is predominantly, although not exclusively, on developers of AAA games. The reason, as stated earlier, is pragmatic: they constitute the avant-garde of the industry in terms of budget, aesthetics,
influence and artistic development. The independent games movement, academic perspectives and the gamer subculture should not be ignored in this regard, but the commercial game industry is practically the only channel through which video games can be realised.

This study prefers a material perspective on the video game medium i.e. to focus on the physical mechanisms of this communication channel instead of sign-signifier spaces, post-modern weak identity construction projects in digital media, or interpretative dimensions. These aspects are captivating but are beyond the scope of this study. I might for instance criticise the monotonous content selection of the current game industry, but I do not attempt to build theories around these observations and connect them to themes, discourses or other sociological mechanisms in the video game industry. I prefer to study the way an idea is materialised into a video game through a dynamic production chain. I also prefer to analyse what/how a user/gamer can influence as regards the in-game character, instead of interpreting the symbolism of this interaction. The focus is generally on the more material and tangible dimensions of the video game medium.

Similarly, the notion of interactivity could be described with an extremely sexy intertextual and post-modern perspective. The distributed, intertextual, cross-media, anti-hierarchical, “democratic”, ambiguous and multi-layered video game medium literally begs for post-modern perspectives. This has been done by several new media theorists (e.g. Bolter 1991; Landow 1992; Landow 1994; Moulthrop 1994) and would hardly improve the originality, or purpose, of this study. Despite the alluring potential to do so, I have refrained in order to keep this study deliberately practical, by keeping it close to the material “reality”.

This also applies to the description of the industry – the material dimensions are prioritised. For instance, instead of analysing the social, interpretational and political dimensions of developers having a certain (subordinated) position in the industry, I prefer to illustrate and analyse this with the mechanics of the milestone royalty advance financing model which distributes profits in the same way that developers do.
PART I
GAME CREATION AND ITS ORGANIZATION
The first of three parts in this study will explore, analyse and outline the organization of the global video game industry. Part I comprises six chapters, and presents practically all of the empirical data collected during this study. It consists primarily of interviews with industry professionals, complemented and reinforced by secondary data collected from various sources. The first chapter will deal with the core of this creative industry: the game idea. It will analyse how a game idea is typically channelled into the industry structure, and what types of consequence various paths entail. The second chapter will analyse and present the typical production phase of a video game, i.e. the process of materialisation from idea to finished video game title. The third and fourth chapters deal with the post-production phases of video game commercialisation: distribution and marketing/publishing. The latter process is pivotal for understanding the structure, dynamics, cash flows and general nature of the video game industry from a business point of view. As a software-based industry, it is impossible from a business perspective to isolate it from its hardware. A comprehensive understanding of the game industry must involve an analysis of its hardware and its manufacturers, the console manufacturers, which are extremely influential entities in this industry. The final chapter in this part of the study will evaluate the cultural industry perspective, and more specifically the culture economics perspective, on the video game industry. Based on empirical data, and trivial observations, the similarities between the video game industry and other types of media industries deserve an evaluation and analysis – is the game industry a cultural/media/creative industry like any other, and what are the consequences of this? Does the cultural industry model provide valuable insights into the explanation of the industry, and the research question of this study?
FROM IDEA TO DESIGN

THE ENTIRE video game phenomenon, and the industry that surrounds it, begins with the creation of an idea. It is the essence of the creative process that constitutes this industry. This chapter will not deal with this process head-on in terms of aesthetics, artistic processes or similar, but rather how it is channelled into the structures of the industry. How can an idea become a commercial product? What types of entity exist in this industry, and how do they cooperate? This chapter is organized according to the process that takes an idea to the design process and then later to actual production.

As established earlier, the major entities of the game industry are game developers, game publishers, distributors, resellers and game console manufacturers. In this chapter, with its focus on idea generation, the most important entities are developers, publishers and IP-owners. All of these can cooperate reciprocally in various configurations. An overview of these production configurations is presented in the next subchapter and forms the framework of this chapter.

The genesis of a video game is always an idea in a human creator’s mind. Machine-generated video games are currently not possible, though it is within the trajectory of current technological development to assume that in a not too distant future large yet limited portions of the development process will be performed automatically by machines. There are already examples of computer-generated art such as music (e.g. Brian Eno’s “generative music”), poetry (so-called e-poetry), fiction (e.g. the famous Racter software), paintings and video art (fractal or algorithmic art). They provide interesting and occasionally provocative explorations of the boundaries of these artistic mediums and illustrate the precarious position of the author in a technologically induced post-modern world. Although these pioneering innovations provide new forms of expression possible only within certain wide definitions of these respective forms, it is the firm belief of the author of this thesis that these examples of machine-based “generative” art will not (ever) constitute a viable alternative equal to human production. Artistic expression is a human activity that requires intelligence of an
extremely refined (possibly exclusively human) nature, which is impossible to fully grasp, define and theorise – not to mention attempt to translate this creative process within the confines of the mathematical universe of binary logic that constitute the foundation of computers and information technology.

The human-generated idea evolves into a concept, or more akin to a proto-concept that can be described in a few sentences. Or it might even evolve into a fully fledged concept document that describes the video game concept in detail. Regardless of the maturity of the concept, the pivotal question is, “to whom does the author of the concept turn to in order to hopefully develop it into a commercial video game?” This is a typical feature of creative industries such as the video game industry – there are more than plenty decent ideas/concepts floating around within and in affiliation to the industry. A minority of them are feasible for potential production consideration and a miniscule fraction are realised as finished video games. Simply put, there are substantially more ideas than there are possibilities to produce and realise. The concept author turns to a producer, who becomes a partner in the development and production phase. All sorts of theoretically possible arrangements are possible in this situation, although some are more plausible and frequent than others.

**CLASSIFICATION OF VIDEO GAME PRODUCTION CONFIGURATIONS**

A tentative classification of video game idea/concept initiation configurations, is presented in the table below:

<table>
<thead>
<tr>
<th>Producer</th>
<th>Concept Author</th>
</tr>
</thead>
<tbody>
<tr>
<td>Developer</td>
<td>Developer, Publisher, IP-Owner/Other</td>
</tr>
<tr>
<td>Publisher</td>
<td>Independent, In-House, IP-Commercialisation</td>
</tr>
</tbody>
</table>

There are three fundamental entities in this initial concept initiation process: developer, publisher and IP-owner/other. Game developer is an entity that takes care of the actual design and production (i.e. software programming) of the video game product. The (game) publisher takes care of the financing, marketing and supervising aspects of video game production. IP-owner/other is a relatively new entity that has emerged in the last decade as an influential video game idea author, which is a result of the trend towards media industry content convergence, marketing synergetic cross-media productions and the overall “cross-pollination” of content ideas in
the globalised mass-media landscape. The general organizational structure of the video games industry will be analysed later. These three types do not represent all, or the most decisive, entities of the industry – they constitute the typical type of initial concept authors in the case of commercial video game production.

Given these three types of concept author entities, there are six possible configurations. The IP-owner/other is usually not capable of producing, i.e. writing the software, and is hence not included as producer: pioneering, work-for-hire, exotic, independent, in-house and IP-commercialisation

**Pioneering (developer → developer)**

The “pioneering” production form is one of the oldest types of constellation in the video industry and is still, on rare occasions, a viable configuration in the contemporary video game industry structure. In these pioneering cases, the developer turns to another developer (usually itself) to develop and produce the video game concept. In the initial and emergent phases of the video game industry, prior to the establishment of institutional forms of cooperation, most video games were developed in this way. The archetypical video game author who decided to develop the idea with his/her own company in scarce settings, such as the mythical entrepreneurial basement, where passion and vision are the main driving forces.

The reasons for this type of configuration are twofold: structure/competence and financing. As in any nascent economic phenomenon there is a lack of institutions, well-established procedures and clearly defined mechanisms of cooperation between entities. In a context with loosely defined and unclear structures this type of confusion was also reflected in the business models, competences and overall level of specialisation. Lack of industry procedures and process gave rise to the “one stop shop” approach to competence and business models. The competence of the video game developer was originally not only to author the video game concept, but also to produce it fully on its own Many early video game “authors” were required to act as game developers, game publishers and even distributors, in many ways resembling a kind of fully integrated video game solution provider. Nowadays, this type of configuration is less frequent, due to the increased level of competence/specialisation, more defined structures of industry cooperation procedures and a more salient and separated financing function.

Initially, video game financing was not as arduous a task as it became during the 1990s. This is related to the fact that commercial video games initially required modest investment in terms of labour, technology, and
marketing. For instance, the legendary video game Tetris (Pazhitnov 1988) was developed by one software engineer in the Soviet Union, Aleksei Pazhitnov, and most of the genre defining video games from the “golden age of video games” in the 1980s (Kent 2001) were developed by a handful of software programmers. Today, the “pioneering” configuration is limited to a handful of extremely capable and successful video game developers. With the escalating power of the financing function in the video game industry, it has become increasingly challenging for a single entity to maintain game development and financing of its own video game titles within the confines of its core competence and business model. A video game developer runs significantly increased business risk with full self-financing since a commercial failure would jeopardise the entire business. Financing has become substantially more complex today due to economies of scale and requires a much wider operational range to be financially viable.

Case: Core Design, Valve Corporation and Funcom

Despite these financial and competence-based challenges associated with being a self-financed video game developer, there are famous, almost legendary, cases of such configurations. Some might cynically (and slightly jealously) claim that the success of these developers is to some degree a result of tremendous luck since many are built on the success of initial blockbuster titles. These developers/studios have since then often ridden on initial success by producing follow-ups and sequels. These claims might indeed be partially true, although an initial success is by no means a promise of continued success, as illustrated by the legendary English video game developer Core Design that created the initial Tomb Raider series of video games (e.g. Tomb Raider, Core Design 1996). Based on the curvaceous fictional heroine Lara Croft, the video game and its iconic character epitomised a new era of more mainstream and pop culture oriented video games with more adult and violent content that arrived with the breakthrough of the three-dimensional graphics paradigm. After having designed and developed six sequels and a range of other titles, with varying degrees of success, the game developer languished, the development of Tomb Raider-franchise was transferred by the publisher Eidos to a different game developer, staff members resigned and the studio was later sold to Rebellion (Rebellion 2008) without the rights to the Core Design brand name or to the Lara Croft franchise, which remained with publisher Eidos.

The quintessential case of the successful independent self-financing video game developer is the legendary company Valve Corporation. Founded in 1996 in the USA (Valve 2005), it is one of the world’s most renowned
and successful computer game developers. Valve’s first game *Half-Life*, released in 1998, was an instant global hit and lauded as one of the best FPS (First Person Shooter) games of all times. Its realistic graphics combined with immersive and intense storytelling resulted in a groundbreaking game that re-invented the whole FPS genre. The so-called “graphics engine” (the software that generates the computer screen graphics) of *Half-Life* evolved into a software platform on which anyone could programme new FPS games. A global community of net-savvy third-party programmers sprang up, creating new extensions, tracks and whole new games, so called *MODs* (*modifications*), based on the *Half-Life* graphics engine, as was the case with *Counter Strike*, originally a MOD whose tremendous underground success resulted in a separate video game officially endorsed by Valve and published by Sierra Entertainment and long considered “*the #1 online action game in the world*”.

Valve has achieved something that a vast majority of other game developers do not have – independence. The huge success of *Half-Life* and its spin-offs has not only generated substantial revenues, but also created a global community and market of devoted fans and modders. Subsequently, when the highly anticipated sequel to *Half-Life* was being developed, Valve was in the financially privileged position to be able to self-finance its high development costs (Autrijve 2004) – a possibility which few other game developers in the world can afford.

As of 2002, Valve embarked on an even more ambitious project: to create a global video game content distribution platform for video games. At a time when others were merely discussing electronic distribution as futuristic options, Valve created an extensive distribution platform, called *Steam*, based on sophisticated cutting-edge so-called *Peer-to-Peer* (P2P) network technology (Dymek 2005b). *Steam* not only included Valve’s and its affiliates’ video games (based on the *Half-Life* graphics engine) but also third-party video games from such well-known sources such *Eidos*, *Take-Two*, *Codemasters*, *Activision*, *Capcom* and others (Magrino 2007), thus expanding the catalogue from the FPS genre to action, adventure, strategy, sports and racing. In addition to the possibility to buy (through a web shop) and download new video games, features like chat-client, community features, discussion forums, Digital Rights Management (DRM), software updating were also included. This success spawned *Steamworks* (Valve 2008), a set of publishing and development tools directed at game developers, thus establishing the platform as a technological and business system.

Other types of solution to development financing are through alternative sources, usually venture capital and/or IPOs, *i.e.* outside the established financing structures of the video game industry. An illustrative case is the Norwegian video game developer and publisher *Funcom*. It focuses on de-
veloping and running MMOGs such as its most famous title *Anarchy Online* (Funcom 2001), which it also published alone. As of 2007, the company has also stopped distributing its video games through physical media in favour of electronic distribution (Haugnes 2007), mimicking Valve’s Steam platform. Founded in 1993, the company has managed, through external investors and stock exchange listing (in Oslo, Norway), to maintain an independent “pioneering” position with self-financed development, production and its own (electronic) distribution/marketing.

The case of Valve, and distribution solutions such as Steam or Funcom show how it is possible for certain video game developers to finance their own game development, but that innovative and risky business strategies and solutions have to be adopted. Game development financing has never been a problem for Valve due to the success of Half-Life, and most likely also a fortunate royalty revenue contract with its game publisher. The marketing/distribution issues traditionally handled by the publisher, have been solved by the Steam platform. In contrast to the original “golden age” of pioneering game developers, developers of today are not able to act as fully fledged publishers of their own titles. The initial “pioneering” developer faced an immature, ill-defined and explosively growing market that in many cases did not require a sophisticated marketing strategy. In many cases marketing was by word of mouth and sales took care of themselves. Products were distributed by regional middleman companies (usually also newly formed). Due to the “pioneering” nature of this form of video game production, this study defines it as such.

Development financing, marketing and distribution have become substantially more sophisticated due to significantly higher sales break-even points, which have forced an expansion of marketing into a global and more diversified market. Investors/publishers cannot rely on regional distribution/sales and primitive marketing strategies. It is increasingly required to be present in all major global markets and on all video game platforms, but also marketed accordingly with budgets often exceeding the actual development budgets. The video game industry has lost its “age of innocence” where the pioneering production configuration was viable and popular.

*Alternative Pioneers*

Other examples of alternative “pioneers” are cases of new “video game industry paradigms”. Whenever a new innovative technology is introduced that claims to radically modify the industry structure, it attracts external investors hoping to seize the window of a perceived underdeveloped mar-
ket opportunity. Mobile phones, handheld games, online games have all lured new investors to the industry, with varying results. For instance, mobile phone games purportedly heralded in an era of unrivalled advantages such as a radically larger market (theoretically every modern mobile phone in the world), less sophisticated technological requirements due to limited mobile phone hardware, consequently generating lower barriers to entry from a technological and economic perspective. Thus far, mobile phone games have not become the revolutionary mass-market low-budget game platform they were outlined to become, as proved by mobile phone giant Nokia’s costly N-gage failure, although the world’s largest independent game publisher Electronic Arts did commit to mobile phone gaming by acquiring the largest mobile phone game publisher JAMDAT (Gibson 2006b).

The general investment climate in the world economy also affects external investments in pioneering developers/technologies. A famous recent example is the IT bubble or “dot-com bubble” at the turn of the 21st century, when exorbitant fascination with innovative IT/Internet technologies and their purported ability to generate profits, led to conspicuous speculation that first inflated and then erased approximately $5 trillion in valuations on stock exchanges in the US alone (LA Times 2006). Due to the technological proximity between many of the IT bubble era ventures and the video game industry, some of that irrational investment exuberance was diverted into the game industry. Many ventures established online distribution and gaming sites in an era when broadband Internet connections were limited and dial-up connection was the standard. The extremely popular Pogo.com and practically all the major Internet portals teamed up with online game providers or produced proprietary alternatives. Significant revenues were unfortunately nowhere to be seen. Since then so-called browser games or “Flash games” (named after the graphics plug-in-technology called Adobe Flash) have re-established themselves as an arena for low-budget and advertising-driven video games, which produces many popular games but also provides an entry-point into the more established video games production with larger budgets.

Excessive macroeconomic liquidity can also affect the valuation of companies from an investor and creditor point of view, giving rise to mergers/acquisitions which in less (macro)economically favourable times would not have succeeded. This was the case of the renowned 2005 merger of game developers BioWare and Pandemic by private equity firm Elevation Partners (with high-profile founders and investors, such as pop/rock star U2 lead singer Bono), in order to create a “super-developer”. The panache of rock star fame and cheap interest rates produced a quite unexpected, maybe even illogical, acquisition and then merger of two independent stu-
dios. Less than two years later, after investing $300 million and considering a stock market flotation (Fahey 2005a), the combined entity was sold to publisher Electronic Arts (Androvich 2007a), indicating a failure of the independent “super-developer” concept.

WORK-FOR-HIRE (PUBLISHER → DEVELOPER)

Work-for-hire, together with the in-house productions, is becoming the dominant form of production configuration in the video games industry. The game idea/concept is originated within the publisher, who controls the complete process from idea through financing and marketing to finished title. Publishers basically outsource production since they are not able to cope with an in-house production configuration.

There are two aspects to this type of outsourcing: competence and cost flexibility. The first is fairly evident: certain studios/developers with a proven track record are more capable than others of developing certain type of video games. With development budgets reaching an average of 100 million SEK, cautious publishers value track record, experience and competence rather than price. Experienced game developers from countries with high labour costs (such as Sweden) are not easily dethroned by price-cutting game developers from regions of the world with low-cost labour. This is elaborated by the CEO of a Swedish game developer when asked if price dumping is prevalent in the game developer market:

No, I would say that the most important aspect for the publisher is the fact that they are betting 100 millions on someone, and that this is a proven team that has worked together for a long time and done one or several hits, and that his team can put together a good game. That is where we at [name of game developer] are right now after [break-through title]. It’s almost the same team that has been working together. The core team is 8 years old. We’re a pretty safe option for publishers. On the other hand, the difference between various developers in terms of cost per man-month isn’t that huge. Let say that European, also American, developers take between $8000/man-month and $12000/man-month. Then there’s maybe some really big star that charges 13 or 14, I don’t know. I believe that $12000/man-month is the best you can get. And then there’s some in Eastern Europe that are satisfied with 5 or maybe someone in Asia who accepts even less. The Eastern Europeans and the Asians in most cases haven’t really had any hits yet. Then you probably rather choose someone who costs… who is more proven. Someone that is known…

CEO of major Swedish game developer (2006-03-03)
This quote shows that a proven track record, extensive longevity of teams, well-known team members, and a good reputation are the most essential success factors for game developers in the AAA market. Lower-wage regions (here identified as “Eastern Europe” and “Asia”) are at a disadvantage due to difficulties creating a reputation based on experience, and not merely lower price points.

The second aspect of work-for-hire is a traditional outsourcing advantage: cost structure flexibility. With external entities (independent game developer) performing essential work functions for an organization (publisher) the fixed costs of the functions are locked in the external entity and thus do not affect the finances of the main organization. A publisher would assume an enormous development payroll if all of its production was in-house. Its fixed costs would rise drastically, as would also the business risk since a development production pipeline with optimal in-house staff employment is challenging to maintain due to the extremely uncertain demand in the video game market. Outsourcing, i.e. work-for-hire configurations, become a more flexible solution. The financial risk associated with employment efficiency is thus offloaded onto the game developer.

The fundamental setup for the work-for-hire configuration is as follows:

Most [developers] have of course done “work-for-hire” – when you accept a concept and receive running payments during the course of the development. There are of course two business models in the trade, basically. You accept a concept from a publisher where somebody else owns the brand and then you develop, maybe not as a consultant, but in principle. You develop the game, you receive a lower royalty rate and then you receive a certain mark-up on the game development, maybe 5% to 10%. And then you deliver it and then there is a fairly high breakeven point for earning royalty. We have chosen to develop our own brands, and then we get paid, but we often invest more than we receive in development advances and then we achieve a higher royalty. So it’s our brand and we continue developing it ourselves. And then we make our bets on our own stuff… Assuming that we deliver good quality and good products – then we make more money of course. If we don’t on the other hand, then we have taken a greater risk.

Vice-President and cro of major Swedish game developer (2006-02-10)

Two fundamental business models are identified: work-for-hire and “own” productions. Work-for-hire is when the developer “receives” a concept from the publisher and is expected to function almost as an external consultant. The royalty rates (which will be analysed separately later) are lower, and consequently also the break-even point for royalty earnings (practically impossible to achieve). This results in a low profit mark-up for the developer. The other option is to develop “own brands” where the developer
assumes a more decisive position in the creative development process. This arrangement is also more rewarding from a revenue perspective: higher royalty rates and lower break-even points. On the other hand, it involves greater risk by requiring the developer to invest their own funds in game development. The respondent does not distinguish between independent and pioneering productions, and assumes that “the second business model” involves ownership of IP and own development budget, which most obviously is not always the case. This will be discussed in the section concerning the Independent (publisher-developer) configuration.

One of the reasons given by industry professionals for the increased popularity of the work-for-hire production configuration is an extensive publisher focus on ownership of IP (Intellectual Property) as evidenced by the following quote:

A couple of years ago it was easier for a developer to approach a publisher and say: “we have a game concept, we continue owning the IP but you can finance us and market it”. Nowadays the publishers basically slam the door in your face if you declare it, because “no, sorry” all publishers have in principle fundamental policy decisions to only accept IPs that are owned by themselves. If you approach them and say “we want to own this” then “no, sorry – you’ll have to work with someone else, because we are not allowed to do that”. They have taken that decision on the highest level. Because there have been several cases where something has become a hit and the developer continues owning it. Then they demand a little too much, and then the publishers get sulky since they don’t own that IP and think they did the great push. And [another famous Swedish game developer] with [successful title] were really one of the last great ones, so to speak, to have succeeded in owning an IP. And managed to maintain it. They had really worked internally with the project for a long time. No publisher was interested. And then basically when it was done, then they shopped it around. And they found themselves in a very advantageous position and actually succeeded in owning the IP.

CEO of major Swedish game developer (2006-03-03)

IP ownership has grown more protectionistic. High-level publisher policies necessitate transfer of IP to the publisher. These policies are based on costly experiences where considerable value has been lost by overlooking issues of IP ownership. Publishers lose out on IP value increases, but also lose bargaining power if/when IP rights are reused for sequels or/and licensing. Publisher product pipelines become unstable if content is controlled by external entities. In general, the respondent’s quote indicates a massive “IP turn” by the video game industry, where core value creation is seen through the prism of ownership and management of IP rights.
EXOTIC (IP-OWNER/OTHER → DEVELOPER)

This type of configuration is not frequent in the commercial video game industry. The IP-owner or other external non-game-producing entity turns directly to a video game developer in order to produce a video game that is not taken to a publisher. This excludes the mainstream of commercial activities in the video game industry.

Media Convergence

The “exotic” configuration did, however, exist to some extent in the younger and more pioneering days of the industry, when it caught the attention of international media corporations of various kinds. Film, music, book or media conglomerates all attempted to enter the video game industry at various times in the initial developing stages. With established marketing/distribution infrastructure and cross-promotional potential the conglomerates created “alternative structures” outside the mainstream channels of the game industry. This produced exotic development configurations where external entities initiated game concepts (predominantly based on established and external IPs) and then contacted game developers to produce a video game title.

Usually, media conglomerates would form separate “multimedia” divisions that targeted video game markets. The results were mixed:

> There was a huge wave from 1992 to 1997–98. Even further back really. Bertelsmann and grand French publishers started multimedia companies. The book sales were of course going down all over Europe and claims like that. It was sort of “it’s all because young people play video games”. And then they started these multimedia publishers since they’re publishers with all the money, budgets and decision-making. […] So all these damn multimedia publishers went bust! They lost so many billions – even approaching telecom proportions! [laughter]

Former CEO of Swedish game publisher (2006-02-09)

The respondent claims that fears of falling sales in core businesses and a belief that the future of media was in video games, motivated the media conglomerates to create “multimedia publishers” that went head to head with the incumbent video game-only publishers. Most of these ventures were allegedly extremely unsuccessful. “Telecom proportions” refer to remarkable multi-billion dollar/euro losses suffered by speculative telecommunication investments at the turn of the century. The multimedia publishing failures were results of misunderstandings and underestimation of the video games industry and its business logic.
Q: You think they misunderstood the product?

A: Yes, exactly. A misunderstanding of what the product is really all about. A misunderstanding of how to reach that target group. It’s often that way when change… in paradigm shifts usually new players pop up in some new ways. There isn’t one single publishing group in all of Europe who do this… I mean the classical publishing groups, who do games with the exception of Havas of course. Because they bought Blizzard. That was a smart move.

Former CEO of Swedish game publisher (2006-02-09)

The French media corporation Havas owned a major game publishing group that was sold off and renamed Vivendi Universal Games and then Vivendi Games. To this day its most valued unit is Blizzard Entertainment, which after several mergers retains managerial independence as a subsidiary. After the merger with game publisher Activision it is now called Activision Blizzard, thus signalling even more strongly the prominence of its most valuable asset.

Failures of traditional media corporations are also elaborated by another game industry executive:

Those who have been burnt the most are the film companies. They’ve entered with a film approach and totally failed. Warner Bros, Universal, Fox were catastrophic. It all depended on their “old” approach: books, music. It also doesn’t work to take industry know-how from the film industry and apply it to the book business. It requires distinctive competences.

CEO of (former) major Swedish game developer (2002-09-20)

The film companies’ failures were the result of “old” approaches, i.e. applying industry know-how from one industry to another industry.

The entrance of media corporations into the video game industry signalled two things: media recognition and media convergence. The first was an identification of the video games industry as a media industry by the established “traditional” media industry. The video game industry had up to that point been predominantly associated with the toy and electronic industries rather than Hollywood studios and global media industry. The second signal was the adoption of media convergence notions— a belief that all media forms are converging and that media boundaries are being erased and redefined, a vision inspired by an evolution towards a multi-media-based future with transmedial consumption and production. For instance, a video game would contain content also present in a film and TV series, accompanied by music tracks that can be downloaded as mobile phone ringtones, and purchased on an e-commerce web site. However, visions of media convergence, “interactive television” and others were to
large degree failures and abandoned. Only recently, with the diffusion of broadband Internet, have they become technologically viable. As a business strategy in video games, exotic production configuration was also a failure and its era is largely over, replaced by IP Commercialisation (see the respective chapter) as the preferred strategy.

Advergames

A more frequent and contemporary example of exotic production configuration are so-called advergames. These are video games that combine advertising and games and are usually distributed for free as part of a marketing campaign for a product from an external and unrelated industry, thus obviating the services of publishers. Financing and marketing are done by the advertiser. Distribution is strongly facilitated by the gratis and advertising-driven nature of this genre/game type. Budgets and complexity of advergames are predominantly lower than mainstream video games, consisting of Flash-based web browser games, downloaded games or games distributed on free CD-ROMs/DVDs. They are inevitably a simpler and more primitive genre of video games from a video game aesthetics point of view. Due to the combination of advertising and the purported more profound impact of video games (from a pedagogical point of view), these types of video game are controversial as they often target children and young people (Dahl, Eagle, & Baez 2006).

A typical example might be illustrated by the free web-browser-based Flash video game Moberowe berety (House 2005) that was part of a marketing campaign for Polish youth fashion brand House. The player was allowed the opportunity to ridicule, using not so subtle allusions, certain aspects of a controversial and outspoken religious/radical political movement. On completing the game, the player was rewarded with discount coupons redeemable in the House fashion chain. The game generated immense popularity for the campaign, which was of course rewarding from House’s advertising perspective. Others perceived it as blasphemous provocation and some members of the Polish parliament demanded boycotts and legal investigations, which only added to the hype surrounding the game (Poznanski, Kowalski, & Iwanciw 2005). Ignoring the politico-religious dimension of this particular game, this case illustrates how advergames are used as efficient components of marketing and communication campaigns for entities external to the video game industry, thus constituting an exotic production configuration.

One notorious example of advergames is America’s Army (U.S Army 2002) developed by the U.S. Army as an official public relations initiative
for recruitment. Based on the First Person Shooter (FPS) *Unreal* graphics engine, the gameplay is of a similar (violent) nature. The player must go through game-based basic training camp to become a soldier, who then engages in combat environments. The game’s immense success spawned game console, mobile phone, and Windows, Mac and Linux versions (published by major game publishers *Ubisoft* and *GameLoft*), via download or on free DVDs. Further developments of the franchise, *America’s Army 3.0*, have been announced (U.S Army 2007c). 9 million players have downloaded *America’s Army* (U.S Army 2007b). The game is controversial: as a free download, created and promoted by the strongest military force in the world which is actively waging war in several conflict regions, it targets a young audience with the intention of recruitment. Consequently, it is being criticised for constituting a U.S. Army propaganda tool, with renowned developer Harvey Smith calling it “the most political game anyone’s ever made. It is a complete commercial for the right wing” (Gibson 2007). The U.S. Army defends itself by claiming that the game is not only a recruitment advertisement, but also a pedagogical tool that communicates the values of the U.S. Army:

> In the game, as in the Army, accomplishing missions requires a team effort and adherence to the seven Army Core Values. Through its emphasis on team play, the game demonstrates these values of loyalty, duty, respect, selfless service, honor, integrity and personal courage and makes them integral to success in America’s Army.  

(U.S Army 2007a)

From a strictly industrial perspective the case of America’s Army illustrates that using an exotic production configuration can result in highly successful video games. Through its own financing, external technologies (graphics engine and others) and own marketing channels it provided alternative structures for reaching the video game market.

**INDEPENDENT (DEVELOPER → PUBLISHER)**

This is the quintessential production form of the video game industry, or generally in any cultural industry: the “creatives” (game developers) turn to the producers (game publishers) and propose a project that they wish to actualise. Art meets commerce. If successfully executed both parties win: “creatives” see their vision become art (with some salary), while producers receive profits and prestige. This represents a historical division of labour in any creative/cultural industry (book, theatre, music, film, opera, ballet, etc) with creation/development and production/publishing as separate func-
tions and structural entities. Artistic production has always (or at least since the days of Gaius Maecenas) enjoyed the support of art patronage, which provides more than well-needed funds, but also an arena for developing art and meeting the public.

The *raison d’être* of the three-tier industry structure with creation, production and distribution as separate entities/markets, is driven by specialisation within the artistic and commercial domains. The video game industry equivalent of this principle is best illustrated by the following concise quote:

Q: Describe the typical development process from idea to merchandise.

A: We sell a concept to the publisher. We sign a contract and develop the game. The publisher markets and distributes the game.

*CEO of major Swedish game developer (2002–08–05)*

When asked the exact same question as previously, the *CEO* of another game developer responds:

There are two types of businesses. First: a publisher comes to us and has an assignment. We examine it and create a pitch and tell how we would like to do the game, how it would work, when we can deliver it, what technology, price and royalty. You pitch for a contract in much the same way as advertising agencies do to sign client contracts. Three to five other developers get the same offer, and pitch for the same contract. The other type [of business]: when we create an idea ourselves or IP that we want to transform into a game, alternatively an IP we have bought the rights for. […] We use this material to sell to the publisher. Up to that point we take the risk ourselves. We finance the prototype.

*CEO of (former) major Swedish game developer (2002–09–26)*

The respondent provides an analogy to advertising agencies whose core competence is a creative activity (within market communications), confirming the constant comparison of video game industry with “creative” industries. The respondent confirms the existence of two types of business models (for game developers) – “contracts” and “own ideas” – as was established earlier. Variations of these two (mainly depending on financing options) do exist, and will be elaborated later. Finally, a third game developer CEO reflects on these two fundamental business models:

Q: Would you agree that there are basically two types of options on the market [for game developers]: work-for-hire and own IPs [Intellectual Properties *i.e.* independent configuration]?

A: Yes, but own IPs are almost going away, I would say. It is hard to develop for an independent developer. And it is so difficult to
manage distribution and marketing on your own. It is difficult during the final stages [of development] to approach a publisher and say “Hi, could you distribute this one?”. Then it’s not approved and grounded with the publishers. If an external title is just brought in – then it’ll be treated unfairly by the publisher, even if they buy it at the end. It’s not the way they would like it anyhow. If they’re allowed to give some input from the beginning, then they’ll truly believe in it and bet generously. Then they can put up a global marketing budget that is often on a level with the entire development budget. So maybe an additional 100 million sek in marketing budget. To do this as an independent developer... There are some such as Valve and id and the like who have done this to some extent. But they have often gone back and worked with the publishers again.

ceo of major Swedish game developer (2006-03-03)

This quote indicates that in the contemporary globalised video game industry (for AAA titles) it is increasingly difficult for a game developer to create their own concepts and ideas. Even self-financed concepts will lack support and input from the game publisher, since they insist on having an overarching supervisory role during the entire process. Furthermore, “own IPs are almost going away”, signalling the demise of independent production configurations, which is contrary to the statements of the first two ceos. The difference in opinion might depend on the changing landscape of the video game industry, considering the interviews. were four years apart The previous console generation required development budgets (NB not including marketing) ranging between 20 and 30 million sek (ceo of major Swedish game developer, 2002-08-03), current console generation budgets are said to amount to 50-100 million sek (ceo of major Swedish game developer, 2006-03-03). In other words, budgets have almost doubled in 4 years.

End of an Era?

Not only have budgets increased, but the general (IP) strategies of the publishers have also changed drastically. With expanding development budgets publishers cannot rely on content that is not fully controlled by them, especially in a highly sequel-driven market place for video games. It reflects a general turn towards an IP-based perspective on value creation by the entire industry. IPs have been well known within the industry for a long time – the Mario IP has been a key success factor for Nintendo for three decades – but it is only recently that its relevance has grown to become one of the major (business) perspectives of the industry. When the industry was expanding extremely rapidly in the 1980s and 1990s the
relevance of IPs was lower for several reasons: marketing and development budgets were significantly smaller, concept plagiarism was (and still is to some degree) rampant, time to market was much shorter due to less complex technologies and content, the number of new title releases was significantly higher. As a result of this, IPs were considered more exchangeable. Today, successful titles establish themselves as brands, with substantial resources invested in development and more importantly in distribution, marketing and publicity, thus creating considerably higher barriers to entry than previously. To guard these precious and successful titles/brands from competitors, publishers use IPs as “defence shields”. It signals the end of the “passive publisher” who acted merely as passive investor and marketing intermediary. Publishers nowadays are more active relying on a selected range of accomplished game developers with proven track records, or alternatively (acquired) in-house teams. Even independent production configurations are developed together with the publisher who also retains the subsequent IP. New IPs are more difficult to establish nowadays, as the studio development director of Swedish game developer Avalanche Studios elaborates in an interview:

Q: You not only built the technology from scratch, but Just Cause was also a new IP. Did you find it difficult to establish a new brand in the market?

A: It is difficult. It’s tricky to reach an audience and break through the media noise. And it’s also tricky internally to define what the game is, what it should look like, how it should play. With Just Cause it was always a struggle working in-house on how the hero should look. And also working with the publisher on that, because marketing and PR come in and a lot of people want their ideas included and it’s tricky to find that perfect balance. It’s a big risk when you’re working on a new project like that.

(Martin 2008a)

Publishers want to be more active in the development process, and completely new IPs by independent game developers are more difficult to realise in the current industry environment.

The end of the “passive publisher” does not entail the internalisation and monopolisation of the idea creation process by the game publishers. Publishers still rely on fresh new ideas from external sources such as game developers or IP-owners. What has changed is the organization of this process. While the previous organization could be best described as a “market of ideas”, the current situation is more of an oligarchic system of idea generation. The initial “market of ideas” generated a market full of potential ideas and the number of publishers/investors was also greater (due to smaller development budgets): regional publishers, independent
distributors, other (successful) developers venturing into the publishing business, to mention just a few. The market for video games was still expanding explosively, and many regional markets were still untapped.

Today, with significantly larger development/market budgets, global markets, a consolidated publisher/financing segment, and a smaller market of independent game developers with extensive AAA title experience, many in-house game studios (acquired by publishers), the organization of the idea creation has been modified and re-organized. There is no “free market of ideas”, there is only a semi-dynamic system of dependencies among established entities. Indeed, the industry has lost some of its innocence, as witnessed by this quote:

One of the current trends is risk minimisation, from a publisher point of view. Ten years ago, the publishers had many developers. A game cost 1 million SEK to develop. The publisher invested 10 million SEK on ten developers, five didn't deliver, five games sucked, two were really good hits that financed the total development and generated a profit. Today, it doesn't work that way. It's expensive, a good game costs 20–50 million SEK. You don't invest that sum with an unknown developer. There are no new developers since there is no financing to be arranged.

CEO of major Swedish game developer (2002-08-05)

Inevitably, the current system raises question about the innovative power: is an industry with an oligarchic system of idea generation capable of providing adequate innovation to develop the industry and its markets? Nonetheless, it should be noted that this oligarchic system applies to the upper echelons of the game industry – the so-called AAA titles, mainly published on video game consoles and PC. There is a plethora of alternative platforms and genres in the current industry landscape, such as handheld game consoles, Flash-games, Java-games, mobile games, casual games, low-budget games, serious games etc. These represent fascinating new arenas for video game development and in many cases repeat the structural dynamics of the video game industry during its “golden age” with the “market of ideas”. The question is what type of economical and cultural impact these alternative video games have in comparison with the global mega-production of AAA games. Do they constitute viable and influential options to the quasi-hegemony of the AAA productions? These aspects of innovation and power will be analysed thoroughly at a later stage in this study.

**IN-HOUSE (PUBLISHER → PUBLISHER)**

The popularity of the in-house production configuration has been shifting during various phases in the evolution of the industry. At some points
it has been advantageous to make predominantly in-house productions, while at other points outsourcing through independent production configurations has been the optimal position. Currently, the industry is moving from a period of fairly extensive use of independent/outsourcing productions to a phase of possibly escalated use of in-house productions.

There are several reasons for this historical fluctuation. The first type of commercial viable video games were coin-operated arcade games where the “game software” was hard-wired into the hardware and new games could not be “installed”. The first generation of video game consoles sometimes offered the possibility to play many different games that were saved on cartridges that could be plugged into the home consoles. The next commercial step, the second generation of video game consoles allowed third-party video game software. Prior to that, “game companies” consisted of hardware manufacturer, publisher and developer in one integrated organization. The video game industry was still in its infancy – technologically as well as economically. After the market had been flooded by low-quality/price games in 1983 it collapsed and took down almost the entire fledgling video game industry. Publishing was primitive as usually one independent software programmer was paid a one-off income. Sophisticated business/cooperation mechanisms such as prototypes, design documents, milestone financing, royalty sharing etc. were not employed. Primitive forms of in-house development were also employed. Industry segments such as publisher, in-house or independent game studios had not yet been institutionalised. “Game companies” that handled console manufacturing, development, publishing, distribution and marketing using all types of configurations and solutions populated the industry. The industry was inevitably in an embryonic stage.

After the industry rebounded from the industry collapse of 1983 it had to understand the complex relationship to third party developers. This was the era ushered in by Nintendo and its legendary Famicom video game console that became a global success and changed the industry forever. Nintendo introduced proprietary chips in cartridges that allowed controlling access by third party games to game systems – a possibility previously unavailable. Third party developers now had to pay license fees and produce cartridges at Nintendo’s special cartridge factories. It transformed Nintendo into a gatekeeper of the (potentially) lucrative world of third party Nintendo games. Nintendo’s access control established the console manufacturer as a salient entity in the industry. A transformation from advanced cottage industry into more professional and streamlined industry organization commenced, with segmentation into specialisations of development, publishing, distribution, reselling and game console manufacturing.
With the arrival of the third generation console Famicom, Nintendo realised that adding third party games generated positive economic network effects. The more games developers released on a certain game console, the more valuable it became. Nintendo realised that this network effect should be managed and controlled, otherwise it could become an accelerating negative force (as in the 1983 industry collapse). Video game consoles became the main value generators in the industry and also the paramount organizational force in the industry – a position they still enjoy day. Nintendo and other game console manufacturers did not need all types of games, they needed entertaining games that fit the profile of the Famicom console. These requirements raised the expectations of the business professionalism of developers wanting to join the Nintendo console universe. They needed publishers who assumed the role of “uncontracted” providers of network effects, i.e. third party publishers.

Case: Electronic Arts

An illustrative case is the one of Electronic Arts (EA). During most of the commercial history of video games it has been the biggest and most successful independent game publishers (in this context meaning with no game console manufacturing) in the world. Founded in 1983 by the legendary Trip Hawkins (a former employee of Apple Computer during its start-up years) it started out as a publisher, and not as a game developer. The company received investments from several venture capitalists, among them renowned Silicon Valley firm Sequoia Capital (Fleming 2007), and began publishing video games created by independent one-person game developers. In the beginning of the 1990s changed strategy and started acquiring independent external game developers transforming them into in-house development studios/subsidiaries. EA had initially preferred to focus on video games for personal computer systems such as Apple II, Macintosh, Amiga, Commodore 64, IBM PC, Atari 800 and Atari ST (Fleming 2007). The reason was higher profit margins since no licensing fees had to be paid to Nintendo. It signalled an era of increased focus on vertical integration of the production process. EA had already created a massive international distribution organization that slowly internalised the function from independent distributors.

However, the arrival of the Sony Playstation introduced yet a new era in the industry. The focus rapidly shifted towards “cool” and violent games with pop cultural impact such as Lara Croft, Mortal Kombat, Doom or Duke Nukem, away from childish fairies and brightly-coloured harmless mascot-
like characters. Video games were becoming slightly more mainstream and effective marketing was becoming pivotal. Such ephemeral market conditions were more challenging compared to the more predictable tastes of children (after all, the Walt Disney Company has been successfully marketing almost identical children-oriented content for nearly a century). As a consequence, idea creation and innovation had once again tilted in favour of external game developers, and independent production configurations made a comeback within EA. With the arrival of newer console generations EA has modified its outsourcing strategies several times. Over the years EA has acquired and transformed developers into in-house studios in the following countries (some of which might have been re-organized/closed): USA (19 studios), UK (4 studios), China, Canada (5 studios), Singapore, Germany, Spain, Romania (2 studios), India, Australia, Japan and Sweden. The Vancouver-based Canada studios alone have over 1,200 employees (Vancouver Enterprise Forum 2005).

The key strategic factors for acquiring game developers and turning them into in-house studios, from EA’s (and any other publisher’s) point of view, are the following: competence, technology, innovation and IPs.

**Game Developer Competence**

Valuable game developer competence can be expressed in several ways: experience, individuals, organization and technology. *Experience* is simply often expressed as a documented history of successful decisions made by the game developer as a team despite the fact that many of its members may have been changed – thus it possesses some form of organizational competence. However, prominent individuals in leading positions are also pivotal. The publishers even examine their background, as witnessed by this quote:

> With expensive games today, they check what the [developer] company and its management are like. They come here and interview people from the team, check their background and experience, check technology, what type of development method we use, tools. Then they look at the game. They examine the production unit first, then they check if the team members have the appropriate experience. They [publishers] have very good people [at doing this].

*CEO of major Swedish game developer (2002-08-05)*

This illustrates four major competence factors examined by publishers: individuals (“people from the team”, “their background”, “team members”), experience (“appropriate experience”), organization (“team members, “management”, “development method”) and technology (“technology”,

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tools). The CEO clearly stresses the existence of organizational factors that are independent of individual team members, such as development method, management and technology. Nevertheless, it can be safely assumed that in a creativity-driven industry such as the video game industry, competence is predominantly focused on individuals and their creative capability to design and deliver entertaining video games. Legendary video game designers as Shigeru Miyamoto, John Romero, Peter Molyneux, Will Wright, Miller Brothers, Hideo Kojima and a few others are developers whose fame transcends their game development teams. Similarly to other creative industries they embody the notion of the enlightened artistic genius that possesses divine inspiration and creativity – a concept with roots stretching back to the artistic movements of Romanticism in the 19th century.

Game developer competence is often provided as motivation for acquisition. For instance, EA’s purchase of German development studio Phenomic specialising in Real Time Strategy games was commented on by EA’s president of worldwide studios in the following way:

The team at Phenomic is an outstanding group of developers. Their track record for building quality RTS games and creating original IP is impressive, and we share a strong common vision for the future of the strategy gaming market.

(Loughrey 2006)

EA’s representative acknowledges the developer as a “group” with an impressive “track record” for quality and originality in own IPs sharing “a strong common vision” thus signalling a (purportedly) friendly alliance between the two entities. It would seem that strong development teams with creative competence are the driving force behind many acquisitions, and the subsequent transformation into publishers’ in-house divisions.

**Role of Technology in Publisher-Developer Relations**

The fact is, though, that acquisitions are often motivated by access to developer technologies that provide competitive advantages in the game developer marketplace. Most valuable developer technologies are the so-called “game engines” that reside at the core of video game software. These software packages attempt to create a modularised platform for fundamental and generic tasks, such as graphics rendering, animation, physics calculations, game mechanics, sound, artificial intelligence and more basic software technological functions such as networking, scripting, memory management and similar. The game engine becomes a material manifesta-
tion of game developer competence – an artefact that is (largely) independent of its creators and can be used by others. However, game engines are often “organically intertwined” with the rest of their game software, and difficult to simply “cut out” and release as commercial standalone game engines. They have to be adapted to the requirements of their genre, market, developer community and technological specifications. Consequently, “packaging” is required, i.e. standardising/modularisation in accordance with technological expectations by “generic” developers. Prominent examples of game engines such as RenderWare (by Criterion Software), Source (by Valve), Unreal (by Epic Games), Havok (by Havok), id Tech (by id software) and others are all based on game development projects that have later spawned commercialisation of the underlying game engine technology.

Case: EA’s Acquisition of Criterion

One famous case of technology-motivated acquisition is EA’s purchase of British game developer and middleware provider Criterion Software. The company began as a spin-off from Canon European Research Lab to commercialise its 3D graphics rendering technology (Fahey 2004a). They later started developing their own games, noticeably the car racing game Burnout and FPS Black. Their game engine RenderWare was extraordinary in its success, adopted by dozens of video game developers and widely recognised as the “industry’s favourite middleware system” (Fahey 2004c). RenderWare provides a cross-platform solution with support from all the major video gaming platforms such as Windows, GameCube, Wii, Xbox, Xbox 360, Playstation 2, Playstation 3 and Playstation Portable. Development with RenderWare’s graphics engine saves development resources if the game is translated i.e. “ported” to other platform, which is crucial when trying to reach as many market segments on the most popular platforms. For instance, EA’s high profile title Madden NFL 08 (EA Tiburon 2007) was released on eleven platforms from three platform categories: PC (Windows, Mac), game console (GameCube, Playstation 2, Playstation 3, Wii, Xbox, Xbox 360) and handheld console/mobile (Nintendo DS, psp, mobile). Porting the game to every platform is significantly streamlined by the use of middleware graphics engine technologies such as RenderWare, which provides synergetic possibilities to have the same graphics (and the software code that produces it) rendered on all separate platforms.

RenderWare also provides a bridge solution for the often precarious and economically volatile phase between game console generation transitions. According to some industry observers this was the main reason for EA’s acquisition (Fahey 2004a), as RenderWare’s platform provided a
convenient technological transition tool between older and newer console generations. Despite fervent counterclaims by EA, some industry professionals indicate that after the acquisition the RenderWare platform has practically been removed from the market and internalised into EA’s in-house teams (Gibson 2006a), thus providing further indications that access to Criterion’s cross-platform technology constituted one of the main driving forces behind the acquisition, as opposed to the development competence of the Criterion's game developers.

**IPR Strategies in Relation to Developers**

Various IP strategies often represent a salient factor for making in-house productions/acquiring independent game developers. During the initial phases of the industry evolution, IPR were not as pivotal as they are today. Eventually, the industry began to focus on IPR and franchises. Sequels have intrinsically lower market risk than unknown titles due to the higher level of brand/title recognition. The curiosity raised by the sequels provides sufficient marketing impetus that reduces the risk by providing a certain level of sales which cannot be presumed in the case of unknown original titles. The “sequelisation” of video game concepts and content has certainly constituted one of the main contributing forces for the IP turn in the industry. In an age where the Mario franchise has resulted in more than 200 game titles and constituted the face/brand/mascot of Nintendo for almost three decades, the value of successful IP cannot be underestimated.

Subsequently, it can safely be assumed that IPs are the dominant paradigm for perceiving value creation from a publisher point of view. If a developer owns IPs or has the proven track record for generating selling IPs then the developer company becomes an interesting acquisition for a publisher. The acquisition and subsequent transformation into an in-house unit, becomes a way to assure ownership of the IP, or the team competence that generates IPs. Many respondents from various industry sectors have given off-the-record accounts of how publishers, somewhat cynically, have acquired developers for relatively small sums when during cooperation/publishing discovering the high (underestimated) value of developer-owned IPRs. Since game developers are rarely listed on stock exchanges, or subject to any other type of “objective” value assessment, their value is highly negotiable. The inexperience of financial analysts to evaluate such relatively new and “exotic” production forms, and the historical lack of experienced business management at game developer companies often lead to subpar evaluations during acquisitions.
Vertical Integration

The management of publisher-acquired developers is a strongly debated subject—a question of creative control: is it fully in the hands of its creators, the developers, or does the publisher ultimately control the creative process? EA has historically been criticised for applying a “one-management-size-fits-all” (Kohler 2008a) that inhibits creative development and enforces a centralised management style that erases the independence of the acquired developers. Not only has this had a negative effect on creativity, but according to some also affected the financial performance of EA. The company’s CEO admitted these errors in 2008 by stating:

I think that the idea that you’re going to have a top-down process that uses a lot of centralized tools to try and build a common brand with a lot of centralized creative calls is just not a good idea.

(Schiesel 2008)

The CEO laments the previous strategy of centralised creative management focused on “building a common brand” (EA) that ran over different creative skills. Some famous cases of EA acquisitions that have been centralised, and eventually annihilated, are Origin Systems (famous for RPG Ultima series), Westwood Studios (Command & Conquer series) and Bullfrog Productions (created by the legendary Peter Molyneux) that after EA’s acquisition ceased to exist despite their once pioneering game developer status and well-known franchises.

There is no question that Origin and Westwood and Bullfrog don’t exist today, and you don’t generally buy things in order to close them. [...] Those deals obviously didn’t work the way we anticipated. The leaders in those organizations got set up where they thought we were bringing in a bureaucracy. We were bringing in centralized tools and technology that homogenized the output and slowed them down. They weren’t listened to.

(Schiesel 2008)

EA’s CEO reiterates the lack of respect for the integrity and creative freedom of their acquisitions. Their centralised management ultimately led to prominent members leaving EA and setting up new studios (such as Peter Molyneux who later created Lionhead Studios, which in its turn was bought by publisher Microsoft Game Studios), leaving EA with their IPs. As a solution the quoted CEO has of 2007 introduced a so-called “city-state” or “label model” in the widespread EA organization where labels within EA have great autonomy and can remain in touch with their creative leaders,
thus purportedly remedying the shortcomings of the previous management philosophy.

Acquiring developers and then using them as in-house units makes more sense if the IPs/development competence provides potential long-term revenues. This strategy gives control over development of IP/franchises, but also control over costs, which is a classic SCM (Supply Chain Management) argument for vertical integration. As a principle independent developers have higher profit margins (compared to in-house units), and these higher margins have to be paid by publishers as “development costs”, but are conveniently eliminated if the developer is acquired. Game console manufacturers integrate practically every step of the traditional industry value chain: game console design, hardware manufacturing, publishing, development, manufacturing, distribution/marketing and to a certain extent even reselling.

The traditional disadvantage associated with vertical integration consists of higher fixed costs as it involves absorbing more infrastructure and employees. The primary argument for vertically integrated in-house production configuration is risk reduction – or more correctly risk transfer. Vertically integrated entities can use their clout to transfer risk “outwards”. Starting with consumers, through retailers, distributors and publishers, and ending with game developers – risk has historically been pushed outwards. Retailers offload their inventory risk onto distributors/publishers through buyback agreements. Publishers, who are in the “risk reduction business” transfer elements of the production risk onto game developers. The structural oversupply of (independent) game developers gives rise to flexibility/risk-tolerance, which publishers capitalise on by enforcing work-for-hire configurations. Game developers cannot renegotiate this disadvantageous position, as there are legions of other game developers who will gladly take their contract instead. Simply put: “IDEAS ARE CHEAP!” due to the oversupply of developers in the game industry, according to a report by Spelplan – Association of Swedish Game Developers (Strömbäck 2007). Independent game developers are consequently also needed by publishers from a risk-reduction/outsourcing perspective.

**IP-COMMERCIALISATION (IP-OWNER/OTHER → PUBLISHER)**

This production configuration is gaining in popularity. The basic setup is as follows: an IP-owner (or other external entity) turns to game publishers in order to transform an external IP into a (commercial) video game concept. If an IP is successful in one medium (film, TV, comics) and is transformable artistically/technologically into a video game, then the project gener-
ally involves a lower risk due to the awareness created by the initial IP’s success. In the clutter of hundreds of video games released every year, an instantly recognised title provides an admirable advantage compared to other video game releases.

The industry distinguishes between original IP and licensed IP (Del-la Rocca 2003). An original IP is a concept invented, developed and authored within the game industry. Licensed IPs, on the other hand, are those video game concepts that are created outside the video game industry, predominantly by the film industry, professional sport series and to some extent literature and comics creators. The commercialisation involves transforming an artistic concept into a video game concept, from one medium to another—a process that is often precarious due to the differences in the expressive potential of different media.

This often involves interpreting a linear narrative of a book/film, and then turning it into a video game. A plethora of challenging questions are raised by such an endeavour. Can video games tell stories in ways similar to film or fiction? Who is doing the telling—the developer or the “interactive” player? How is “play” related to “narrative”? Is the video game medium a narrative at all? Then there are technological aspects such as: can we make human characters look realistic in a video game? How “smart” is artificial intelligence in video games? Finally, there are also economic/industrial/production-related issues: who is in charge of the transformation process from IP to video game? Many of these issues are touched upon by the respondent in the following long quote:

I believe […] that the IP focus has partially peaked for game consumers. It’s harder to make a good IP-based game. It’s easier to make a really good game based on an original IP for three reasons: partially the time factor which can sometimes complicate matters when specific dates have to be met. Though it’s not always the same thing with these evergreen IPs, like Godfather—that’s an ideal IP or Scarface or Warriors or something that people have known for a long time. Usually though, the time problem is the greatest issue. […] The second factor is the difficult approval process on IP-based games because they’re usually a film company or someone else from outside the game industry who has to agree to stuff which they don’t fully understand. Then they provide input that really doesn’t belong in the game industry, and that complicates matters further. The third factor, which is related: even if it’s based on a sequel there are limitations based on what has been established previously. It’s been established in a different medium which can’t be optimised freely here and now, and other aspects have to be considered. Often in the game world for instance… it’s better with “more”. To achieve progression in a game, new abilities are added. New superpowers are added or something. In movies there are higher expectations as regards realism—they expect a regular character with regular abilities. This can grow pretty boring with time. With games
it’s more fun if you... well... gradually get more weapons. That’s the reason why it’s good with a sci-fi setting or fantasy setting because you can continuously invent new abilities. World of Warcraft wouldn’t be as much fun in a contemporary setting because it’s difficult “to level” 60 times and invent new abilities in a contemporary setting. This makes an original IP better equipped to become a really good game. If you look at the biggest game hits such as World of Warcraft, Grand Theft Auto, Sims, Halo – those are original IPs, which became big hits.

CEO of major Swedish game developer (2006-03-03)

The CEO presents fascinating interconnections between IP licensing, project schedules and purely subjective aspects of video game aesthetics, which all influence the business dimensions of game development. It is claimed that licensing of established IPs has peaked for three reasons: challenging time schedules, lack of (video game) competence with IP-owners, and artistic limitations/incompatibilities caused by translating to the video game medium.

Scheduling difficulties in game development are a phenomenon predominantly related to film-based IPs. Video games based on film-IPs are (mostly) released simultaneously as the film premieres. This cross-media strategy is based on marketing synergies – a film is released with an advertising campaign in the press, TV and radio. PR events are organized and broadcast in different mass-media. Simultaneously related media products are launched: a “novelisation” is released in bookstores, a music soundtrack of the film is released, a title song is heavily promoted on music TV channels and radio, and finally a video game is released through the usual game industry distribution channels. In some Hollywood high budget cases it is also customary to license the film IP to merchandise: t-shirts, toys and countless other products such as co-branding deals with soft drinks or hamburger chains. The release of the core IP – the movie – is the inauguration of an avalanche of products that attempt to capitalise on the film’s popularity, but by doing so they also reinforce the marketing push of the original IP. Every product “rides” on the wave created by the others, but also reinforces its impetus. These campaigns constitute complex and dynamical cases of marketing-related economies of scope. Efficiencies are associated with demand-side activities related to marketing – every additional product taps into the efficiencies and has to spend less on advertising/marketing. These types of synergies entail a higher level of risk due to the sheer magnitude of its endeavour. If the core IP fails to establish a successful positive spiral of popularity then all the related products and their marketing campaigns suffer.

These campaigns are based on one paramount dimension: synchronisation. From a game development point of view this puts extreme pressure
on the time planning – the game developer and the publisher cannot afford delays beyond the film release date. Moreover, most film productions have shorter production lead times than 12–24 months, as is the case with video games, which complicates matters more. These aspects contribute to the production of video games that are of limited gameplay and technological quality – a claim that is aesthetically subjective and difficult to verify other than with frequent bad reviews of “movie games” (e.g. Kesten 2007 or Sundberg 2007). Or as veteran game developer Scott Miller puts it:

In my opinion, the vast majority of games licensed from movies, TV, novels, and comic books… are a waste of time for the games industry to pursue.

(Della Rocca 2003)

*Cases: E.T, Lara Croft, Chronicles of Riddick, The Godfather and Others*

One of the earliest and most noted attempts to create a “movie game” was the 1982 game *E.T. The Extra-Terrestrial* (Warshaw & Atari 1982) released on the Atari 2600 video game console. Based on the iconic Steven Spielberg-directed science-fiction film of the same name, the video game was rushed to market with poor quality and subpar sales as a result. It is famously quoted by several sources as being one of the worst games of all time (Townsend 2006). Atari, owned by Hollywood studio Warner Communications, thought the game would be an instant success in line with the hugely popular E.T. movie, and ordered 4–5 million copies of the game (Kent 2001). According to unconfirmed sources, due to abysmal sales Atari was stuck with several millions of returned/unsold game cartridges. This was solved with what has been infamously called the “Atari video game burial” where thousands of copies of the E.T. game and other titles were destroyed and buried in a landfill in New Mexico, USA. The event quickly became a symbolical ending to the golden age of (arcade) video games and a fitting representation of the North American video game industry’s collapse of 1983.

Another example of disappointing artistic synchronisation was the launch of the second movie in the Lara Croft series. Based on the legendary video game franchise, *Paramount Pictures* had decided to release a sequel to the highly successful *Lara Croft: Tomb Raider* movie (West 2001). The sequel, *Lara Croft Tomb Raider: The Cradle of Life* (De Bont 2003), was launched simultaneously with the sixth installation of the Lara Croft video games series, *Lara Croft: The Angel of Darkness* (Core Design 2003)
together with the usual range of merchandise, soundtrack and even co-branding deals with mobile phone manufacturer Sony Ericsson. The video game, however, was a huge failure despite an ambitious game concept – it received the lowest average rating of all Lara Croft games, according to game review database Gamerankings.com (Gamerankings.com 2008). Within a month the Lara Croft movie was released to matching dismal reviews and public reception. Paramount Pictures’ distribution president described the issue as follows:

The only thing we can attribute that to is that the gamers were not happy with the latest version of the Tomb Raider video game, which is our core audience.

(Varanini 2003)

The failure of the cross-media marketing synergies became a fact.

However, opposing cases do exist as proven by the global breakthrough title Chronicles of Riddick: Escape from Butcher Bay (Starbreeze Studios 2004) based on the film Chronicles of Riddick (Twohy 2004). Despite dismal reviews and disappointing revenues for the film, the video game received positive reviews and claims that it was even better than the movie. The game became a huge success for Swedish game developer Starbreeze and illustrates the fact that “movie games” are not directly linked to the success of their IP.

The initial quote gives examples of “evergreen IPs”, such as Godfather, Scarface or Warriors, where the time factor is neutralised since the public awareness of these IPs is extremely high and no release dates have to be met (except maybe cases of re-releases or similar). However, these high profile “evergreen” IPs entail specific challenges, such as gaining approval and licensing rights from every cast member of the original IP. For instance, EA managed to sign almost all the original actors from The Godfather film (Coppola 1972) when making The Godfather game (Electronic Arts 2006), with the noted exceptions of Marlon Brandon who died during the voice recording of dialogues for the game, and Al Pacino who declined the use of his likeness or voice. Instead, he allowed his likeness (but not voice) to be used in the remake of another gangster film classic, Scarface (De Palma 1983), which was called Scarface: The World Is Yours (Radical Entertainment 2006). The EA project of course suffered greatly because of his decision.

The issue of (narrative) IP-commercialisation touches upon highly fundamental aspects of the video game medium and its very interpretational essence. It entails fundamentally two things: firstly, the video game medium is interpreted as a narrative or storytelling medium, and secondly as a direct consequence, narratives from other media forms can be transformed
into the video game medium. The licensing of such classic film IPs as The Godfather and Scarface might be interpreted as a sign that the video game medium is maturing thus embracing more “sophisticated” content, i.e. narratives from the film medium. This assumes an almost deterministic perspective on the evolution of the video game expression form – going from childish puzzle-games and cartoonish talking mushrooms, through adolescent gory shooting frenzies, to the final stage of sophisticated and balanced storytelling that can start comparing itself to the expression forms of film and literature. A fundamental evolution from play to “interactive cinema”.

Such an evolutionary perspective involves paradigmatic consequences for the entire video game industry. It touches upon every aspect from aesthetics, gameplay, technology, marketing, development budgets, publishing process, segmentation, content dynamics and the shaping of the video game medium as an expression form and cultural force in society and the global media landscape. In other words, it is a question of how the video game medium should be fundamentally interpreted and shaped in the future, and what types of consequences this has for the public, i.e. the video game consumers, and more broadly society as a whole. These issues will be thoroughly analysed at a later stage in this study.
MATERIALISATION OF SOFTWARE

The previous chapter established the relationships and possible production configurations of project initiators, developers and publishers when producing a video game title from an initial concept/idea. This chapter will elucidate the organization of the process from idea to software product from a more detailed perspective. It involves various stages of game design at the game developer, the actual production of the software code, and finally the overarching publishing process followed by manufacturing and distribution.

It is generally speaking a materialisation of the game concept into software, and not only in a metaphorical sense but also in a highly tangible sense – a game is made into software that is manufactured onto storage media and then played on hardware. No matter how ephemeral, abstract and “cyberspace-like” software gets, it only exists as part of physical hardware. Software is a *machine* that is enacted by hardware. This study prefers to see the process of game development as an intrinsically material process of creating a system of rules, mechanisms and representations that constitute a video game software programme.

Understanding the organization of video game production is an essential part of this study’s research question. It is pivotal to understand how a typical game production is organized and how this is interconnected to the more structural aspects of the industry. The explanation of the production process in many ways explains most of the terminology and internal mechanisms employed in this industry. This chapter will answer the following questions: what are the typical production and project phases that a typical game development project goes through? What types of standardised function exist in the industry, what are its specialisations and when during the production process are they employed? Are there any differences depending on production configurations (defined in the previous chapter)? How is the value chain that cuts through the developer and publisher at various points organized and how is it financed?
GAME DEVELOPMENT VS. SOFTWARE DEVELOPMENT

A short theoretical disclaimer: the video game software development process inevitably resembles other software development processes. However, this process also differs radically from other types of software projects. The creative dimensions of video game development introduces a novel dimension, while other aspects present in other types of software development do not occur. One might even claim that game software development is possibly not the same as traditional software development. These are fascinating scientific questions indeed, but are far beyond the scope of this study. Whether games development is or is not equivalent to other types of software development is irrelevant for the purpose of this study – the end product is software. Software development terminology, technologies, development methods and software project management models from traditional software development are all frequently used in the video game industry. What matter are the differences between game development, and these will be elaborated in this segment. Consequently, this study assumes that as regards the software development process, video game development is, within certain frames, the same as conventional software development.

Another, theoretical disclaimer concerns the variety of video game development organizations. The video game industry has quickly matured from a garage industry into a more professional industry, but the growth of the industry still gives rise to volatile and fast-paced environments with a wide range of pioneering solutions and attitudes. As a consequence it is highly challenging to stringently claim that video game development “is done” in a certain and specific way. There are multitudes of ways to organize and develop video game software. It also depends on the platform, type, genre and development budget of the video game project. Developing a puzzle game for mobile Java platforms is a completely different process to developing an AAA franchise for X360 which includes recording dialogues, motion-capturing elaborate movements with dancers/actors, developing extensive AI, graphics engines, building digital wire frame models etc.

Nonetheless, there are numerous elements that are universally common – a type of standardised protocol for game development – the way “the system works”. No doubt this has been introduced, by means of a “trickle-down effect”, from the “top” of the “corporate” game publishers down to the foundations of game developers as part of a professionalisation evolution. Standardised concepts such as concept document, vertical slice, design document, milestone, alpha/beta versions, QA, crunch, pre/gold master, royalty percentage are all part of the fundamental game industry vernacular. The purpose of this chapter is to elaborate these standardised concepts within the video game development process and illustrate their chronology.
During the first phase various entities (developer, publisher, IP owner) formulate the idea/concept and turn to a producer/production partner in order to advance it. A concept is defined in words by (usually) the most experienced game designers at the concept author. Various perspectives on genre, competition, market situation, platform(s), budget requirements, difficulty level and other more advanced aspects, are taken into account at this point.

The previous chapter defined a matrix of six types of video game production configurations: pioneering, work-for-hire, exotic, independent, in-house and IP commercialisation. A general trend during the last couple of console generations has been a transition from the first to second column, i.e. a concentration of concept authorship within the game publisher and away from independent game developers. Various strategies of increased control over the production process and value chain have made the publishers more risk-averse towards external game concepts/projects from independent game developers.

The concept is developed into words, texts, images and sometimes even software prototypes. The purpose is to elaborate and communicate the video game concept to the production partner who often, but not always, constitutes the financier/investor of the project. The object of this process is to create a concept document/paper which provides the following specification:

A game-concept document expresses the core idea of the game. It’s a one- to two-page document that’s necessarily brief and simple in order to encourage a flow of ideas. The target audience for the game concept is all those to whom you want to describe your game, but particularly those responsible for advancing the idea to the next step: a formal game proposal.

(Ryan 1999a)

In other words, it provides a simple presentation of the video game concept: description, key features, genre, platform(s) and optionally concept art. Perhaps ironically in such a digital and electronic environment, most of the concept art is done using paper and pen by the game concept artist (a permanent position at large developers) who draws illustrations (by hand and/or computer) to act as visual guiding stars for the rest of the development teams. A respondent defines the concept document/paper as follows:
The concept [document] is a light version of a design document. A complete design document is several hundreds of pages that describe the entire product. A concept document is more in the range of maybe 20 pages that describe what this is.

ceo of (former) major Swedish game developer (2002-09-20)

In other words, the concept document represents a pitch to the production partner. The same game industry executive says:

We use this material to sell it to the publisher. Up to that point we assume the risk. We finance the prototype ourselves.

The game developer executive stresses that in the case of an independent production configuration, all the financial risks associated with conceptual development work, such as developing a playable software prototype, are assumed by the game developer.

Depending on the type of production configuration the purpose and target group of the concept document are slightly different. If the concept author is at a game publisher (as he or she predominantly tends to be in the current industry climate) the concept document is not a pitch to the developer (if doing a work-for-hire) but rather an initial project specification given to prospective game developers who provide feedback on concept development, budget estimate and project duration. However, the archetypical application of the concept document is during an independent production configuration. The independent game developer submits a document complete with background, descriptions of game concepts/elements and concept art. Additionally, the game developer should append market, technical and time scheduling analyses (Ryan 1999a). The market analysis outlines target market, competitors and genre/features aspects, while the technical analysis focuses on aspects such as platform, game engines, development tools and major development tasks. This extended concept document, clearly directed at game publishers, is sometimes referred to as a game proposal (Ryan 1999a). With a pioneering or in-house production configuration (see the previous chapter for definitions), the financing is already secured. The target group of the concept document is not backers/investors/publishers. It is rather used as an internal communication tool within the game developer or game publisher organization.

**Prototype Development**

During this optional phase a small developer team develops a playable game prototype. This process depends on the financing situation and pub-
lisher setup. If financing is pre-arranged then this stage is usually considered unnecessary since the game developer is not required to deliver a “proof of concept”. In the early days of the industry, work-for-hire and even independent productions could be done without prototypes, based solely on interviews and concept documents. These days are over and prototype development is considered a minimum for an inexperienced independent game developer. Only experienced developers, i.e. with proven track records of satisfying commercial game projects, are exempted from prototype development.

Prototype development is rarely financed by the publisher, but predominantly by the game developer itself:

A concept document is accompanied by some sort of prototype, i.e. we allocate resources that work “x” number of months developing a prototype that preferably should be a mini version of the game that show graphical style, gameplay-related features, showing the core of the game and what it is all about as polished and nice as possible. We allocate maybe 2–4 men for 2–4 months, about 15–20 man months.

CEO of (former) major Swedish game developer (2002-09-20)

At the time of the interview (2002), during the sixth console generation, this totalled a prototype and concept document cost of 0.5–1 million SEK. Other sources define the cost (in 2001) as being $50,000–250,000, while the cost of creating a concept is about $5,000–100,000 (Hickman 2001). Since then the cost has risen due to inflation and the increased technological complexity of the new generation of consoles. This inflates the risk of an independent production configuration and constitutes one of the barriers to entry into the market of game development.

More narrowly, the prototype usually involves a so-called vertical slice as defined by the following game publisher executive quote:

A: There is a concept that might be interesting. We talk about vertical slices. Do you know it?

Q: In what context?

A: When you’re trying to get a publishing contract. Vertical slice is really EA terminology, originally. It is based on a vertical slice of a game that represents all parts – all relevant gameplay elements. In order to examine them. Whether to invest in the project.

Q: What would a vertical slice be like? One level?

A: Yes, one or more completed levels. [Name of game project] was a perfect example of a vertical slice. We had 4 completed levels: one with several vehicles, one with zero gravity, and so on. We had all the stuff we wanted to do.

Former game publisher executive (2006-03-01)
The definitions of prototype/vertical slice from both executives focus on comprehensive and functional gameplay representations of the (future) video game product. The notion of “vertical slice” originates from computer sciences where diagrams of information systems are predominantly represented as horizontal elements of software. The game content, gameplay mechanisms and other software components are visually placed vertically on top of more fundamental software elements such as the game engine or other software platforms. A vertical slice thus provides all elements necessary to examine a fully functional and playable section of the video game.

The increasing practice of demanding prototypes from game developers (during independent production configurations) signals several things: (escalating) risk aversion on the part of publishers, increased complexity of development process, and more generally a question of risk division. Larger budget sizes due to more complex development technologies but also more extensive (content-wise) game concepts have lead to substantially higher risks as regards the financing process of video games. The profitable “shoot a dozen (or so) times, hit one” strategy of yore is no longer viable when development and marketing budgets are several hundreds times larger than a couple of console generations back. Publishers must “shoot less and hit more often” as margins are put under pressure. Publishers can no longer trust “credible” game developers with snazzy game concept presentations – publishers want proof that the development team can also deliver creatively and technologically what they promise. The distance between game concept and playable game software is constantly growing and publishers demand tangible reassurances from developers. Moreover, by demanding prototypes from game developers, publishers are externalising aspects of the development risk from its business model – publishers cannot finance the exploration of external concepts. This leads to the pivotal core subject of financing and risk management in the video game industry.

FINANCING

All creative industry structures are highly influenced by their financing mechanisms and setups. The British artist Damien Hirst made headlines in 2008 when he broke the institutionalised practice of selling art through gallerists at auction houses, by turning directly to the auction house Sotheby’s, thus omitting the middleman role of the art gallery (Januszczyk 2008). Historically, the art gallery acts as a type of publisher that finances production of art and then arranges exhibitions (marketing and “publishing”), thus constituting a gatekeeper in the art market – a position quite similar to the role of game publishers. Damien Hirst’s headline-making
move to omit the publisher/gallerist was in his own words “a very democratic way to sell art and it feels like a natural evolution for contemporary art. Although there is risk involved, I embrace the challenge of selling my work in this way” (Singh 2008). However, Hirst might also (primarily?) be motivated in claiming the profits of gallerists and other middleman in the traditional value chain. His art auction at Sotheby’s was expected to fetch about £65 million (Singh 2008).

The noted and extreme case of Hirst illustrates how pivotal mechanisms of financing and revenue sharing become in creative industries. Alternative sources of financing are scarce, and only a few, such as Hirst, are able to detach themselves from its mechanisms. The subsequent revenue distribution also profoundly affects financing as profits tend to be reinvested in the same market/industry – “the stronger get stronger”. In the classification presented in the previous chapter, Hirst’s Sotheby setup would fall into the category of pioneering production configuration. His art works are most probably financed by himself (considering his long and lucrative career) and the only partner is the auction house – the “retailer”.

Similarly, in the video game industry the question of financing, revenue sharing, profit distribution, and middlemen are intrinsically interconnected. The most common form of financing is milestone financing, although alternative financing also exists in some limited form. As the previous case of prototype development showed, there is a fundamental tension between developer and publisher as regards the financing of the actual development/production.

A fundamental component of this tension is the high cost of development/production. Unlike the music or book industries, the process of creation is not something that can easily be financed by the creators themselves. There are plenty of romantic/marketing stories about struggling writers/musicians/painters that despite all odds manage to create their art on their own, and are then discovered by a publisher/gallerist giving the artist fame and fortune. Creating video games is in comparison extremely expensive, as it takes a team of developers up to two years to complete a game, which then enters a fiercely competitive and crowded marketplace where profit is by no means frequent. There are few struggling AAA game developers living off coffee, cigarettes and romantic hopes of becoming discovered by a publisher. There is indeed a scene of indie/casual game developers with very small teams or just one person creating games for mobile phones/web browsers, but these are extremely minute in terms of revenues and cultural impact if compared to the AAA video games for console and PC.
Milestone Financing

The ideal situation for a game developer would be to receive funding from independent sources that do not intervene in the creative process – a compassionate yet unconditional video game (art) patron. Unfortunately for game developers, few banks, venture capitalists or investment funds are interested in financing video game development in this fashion. Developers are extremely reliant on video game publishers for funding. As publishers are becoming increasingly globalised and larger through acquisitions and mergers, the number of financing sources for game development is becoming limited.

The major publishers are scattered all around the world but are predominantly based in the west (USA, UK, and to a lesser degree France) and Japan. The following developer executive estimates the number of potential buyers, i.e. publishers, at around 40 to 50:

*We then take the prototype, concept document and all other stuff we’ve created and try to productify this so it doesn’t become a tech demo, but something that almost feel like a finished product. We then go and sell this to all publishers in the Western world. Most publishers are based in the US, England, France and some in Germany. We have a couple of contacts with publishers in Japan, but most part is the Western world. We’re dealing with in total 40 to 50 potential buyers.*

CEO of (former) major Swedish game developer (2002-09-20)

This is a pioneering production configuration where the developer sells a concept to a publisher. However, the milestone financing arrangement is applied in most production configurations: independent, work-for-hire even in-house productions. Milestone financing becomes a simple and standardised method of controlling the risk.

Another developer executive describes a situation similar to the film/music industry where a handful of global players have an almost oligopolistic influence:

*It’ll become like the movie business with five major Hollywood studios that do most of the big productions. It’s still possible to do smaller and cheaper productions financed in slightly different ways which you can find slightly different distribution forms for. They become more, sort of, experimental and development-type of works. You can test new stuff and then if it really works it’s usually picked up by the big majors. It’s a type of dynamics between the independent scene and the major scene. I believe that something similar exists here, or how it will become in the video game business, or partially already exists. I can’t*
put much fairness or moral aspects on it – that’s the way it is. If you’re doing a $100 million production then you need to be safe. No one is doing it for artistic reasons.

CEO of major Swedish game developer (2006-03-03)

The discrepancy between the first (40 to 50) and second number (5) of potential game publishers might be explained by two factors: time of interview and development budget size. The first interview was conducted in a transitional phase between the fifth and sixth console generation era and the second at the beginning of the seventh generation. Secondly, the latter game developer has delivered several high budget AAA game console projects during its career, while the former focused on entry-level console, PC and advergames.

In a perfect publisher world the entire financial risk would preferably be unloaded onto the game developer by letting it finance the entire development process itself, or at least parts of it. Game publishers would similarly to Hollywood studios focus on distribution and marketing, and handle the financing through external sources such as bond completion financing or similar. Regrettably for game publishers, few production configurations are organized in this fashion. Evidently a compromise is needed where both parties achieve a level of acceptable risk and feasibility. This compromise is in most cases represented by a milestone financing arrangement, or a modified version of one.

The milestone financing model is predominantly, though not always, connected to the royalty advance model of revenue sharing. Since the latter deals with the distribution of incomes, and the former focuses on distribution of costs, the latter will be analysed at a later stage in this study (see Sales revenues). The model is organized in the following manner:

1. Contract, which stipulates exactly the so-called milestone deliverables, is signed between publisher and developer.

2. (Optional) Developer receives a larger “start-up milestone” 10–15% in order to cover fixed development start-up costs.

3. Publisher examines whether the milestone deliverable is in compliance with the contract. Time between milestones ranges between 4 and 8 weeks (CEO of (former) major Swedish game developer, 2002-09-20) or 6 weeks (CEO of major Swedish game developer, 2006-03-03).

4. Upon approval, publisher transfers the agreed advance payment to the developer. It takes 2 weeks from the publisher’s approval of the milestone to payment of the advance (Ibid.)
Steps 3 and 4 are repeated until development process is completed.

Milestone financing is used in many other fields (such as the venture capital sector) with substantial investments in high-risk ventures with high-growth potential. From a publisher point of view, the advantage is constituted by the *veto right*. If the publisher is not satisfied with the progress of the development it can be terminated at any time with contained sunk costs, as opposed to a "lump sum" investment where a failure involves the entire development budget.

The disadvantages associated with the milestone financing method are: balance sheet/credit line exposure for publisher, bad/late products, extreme financial dependency on publisher for developer, and "feature creep" (Hickman 2001). Admittedly, this type of financing must be included in the publisher’s balance sheet. Since alternative and external (to the balance sheet) financing solutions are scarce, development projects are substantial items on a publisher’s balance sheet. If a publisher experiences cash flow difficulties, these are practically automatically forwarded to the developers at the next advance payment. There are numerous occasions when folded publishers have given rise to a diaspora of “masterless” game projects. On the other hand, a well-financed publisher might give rise to so-called “feature creep” (Buscaglia 2005), *i.e.* the proliferation of game features. It can be caused by both zealous game developers or demanding game publishers. The milestone are continuously modified and postponed due to the inevitably unpredictable nature of creative project development, as in all types of project management (Engwall 1995).

**Alternative Financing**

The traditional source of bank loan/debt financing is not a viable option for video game development, as the risk is considered to be excessive:

> [Bank] loans are not used to any great extent. This is considered risk money. Banks don't finance the development of anything.

CEO of major Swedish game developer (2002-08-09)

If this were possible for a developer, the role of the publisher would be significantly modified and in many cases eliminated. Publishers, on the other hand, do have credit lines for business operations, but extremely rarely for individual projects. This study will return to this complex issue of risk analysis at a later stage, since it concerns the pivotal aspect of how cultural industry business models are perceived *externally*. This does not only involve the challenging task of estimating demand for creative products, but
also concerns more structural/business model aspects associated with the (limited) repeated revenue sources for video games.

Another type of (developer) self-funding is provided by various types of capital infusions into the game developer, such as venture capital/equity stakes or new equity issues. In these cases development is funded by offering shares in the developer in exchange for capital. This is not a frequent solution due to share dilution and risk aversion/limited video game industry competence with venture capitalists. Share dilution removes ownership from the initial investors/founders and can only be performed a limited number of times – venture capitalists and founders do not want a company run by a team of developers without a vested interest in its financial success. Every new equity issue also begs the question why existing owners are not willing invest more money into the venture, or why they require more shares. Despite potentially larger returns, there are few venture capitalists willing to invest directly in individual game development projects. They lack the competence or deem the risk level to be too high. Most cases of venture capital investment in game developers are combined with introduction of new technologies (mobile games, MMOGs or similar) or economic boom times with excessive economic liquidity, as described in previous chapters.

Prototype Funding/Completion Bond Financing

A modified form of venture capital based development is so-called *prototype funding*. In this case, the venture capitalist *does* have game industry competence and only invests in projects during the prototype stage. The business model works as follows: developers turn to prototype investment funds instead of publishers to create video games. The fund acts as an “incubator”, helping practically as well as financially in order to produce prototype and game proposal. In exchange, the fund assumes an ownership share in the developer or signs a contract for revenue sharing, which in case of financial success recoups the prototype investment. One high-profile prototype investment fund was *Capital Entertainment Group (ceg)* founded by the creators of the original Xbox project, Seamus Blackley and Kevin Bachus, soon after they left Microsoft. Examples of similar funds are *Fund 4 Games* (Fahey 2004b) or regional public-financed organization such as *Ontario Media Development* (Martin 2008b) or *Nordic Game Program* supported by the Nordic Council of Ministers (Nordic Game Program 2008). The financial gap between game idea/concept and prototype game software/game proposal was identified as the *raison d’être* of these prototype investment funds. Results have been mixed. The regional sup-
port organizations are not primarily driven by profit as opposed to CEG and Fund 4 Games. CEG folded before it managed to sign any publishing deals (Fahey 2003). However, the prototype funding model is somewhat unclear as the difference between a publisher and a fund becomes vague when funding extends to cover the entire development project – if successful, why would the prototype fund only limit itself to the prototype stage and not the entire project, and beyond to marketing?

CEG founder Bachus nevertheless insisted upon closure that his financing method represents a movie business model and that it will become popular in the near future (Fahey 2003). The ambition to introduce “movie business-style financing” i.e. completion bond financing has existed for as long as the video game industry has existed. The advantages are many: it allows a project to continue if the developer/publisher becomes insolvent, separates project financing from the publisher’s balance sheet making it “lighter”, “ring fences” the project and above all could potentially change the developer-publisher dynamics. By separating the financing function, the relationship between developer and publisher becomes more balanced by reinforcing the position of the developer. Developers can consequently demand higher royalty percentages since the publisher does not finance the development. Perhaps most importantly (for developers) the creative control of the project is firmly with the developer. Consequently, this type of financing could foster new ideas and innovation in the video game industry in the same way that completion bond financing has helped independent film productions.

Completion bond financing is not available to every type of game developer. Predominantly, the developer has been well-established with a healthy financial situation and proven project management skills. This financing method requires a stable publisher, preferably also publicly listed. The model involves four parties, developer, publisher, bank and completion guarantor, and works in the following way (Hickman 2001; Kay, Pape, & Fayne 2003; Poitevin 1998):

1. Developer and publisher sign (conventional) contract stipulating budget and delivery time for the game development project.

2. A Special Purpose Vehicle (spv) company is created specifically for this project jointly by developer and publisher.

3. Completion guarantor insures the development budget by issuing completion bonds that are supported by the guarantor itself or by other bond investors.
4. Bank funds the development process directly with a loan by using the completion bonds as collateral.

5. Upon delivery of finished game project to publisher it pays off the development loan to bank.

6. In case of non-delivery by developer, bond holders are required to pay off development loan to bank and usually (depending on contract) assume ownership of all assets produced during the (failed) development process.

Slightly complicated compared to the conventional publishing project, this arrangement achieves several practical advantages. The SPV construction isolates the risk from both the developer’s and publisher’s balance sheets. Completion guarantor assumes a substantial risk – the development risk – by charging a percentage fee (usually based on the budget size). The bank assumes the credit risk and therefore charges interest on its loan. The publisher takes the commercial risk since they have to develop the game concept commercially in the market. There are also less complex arrangements without SPVs where the completion bond acts as insurance for the financing, and the publisher still pledges a substantial part of the financing. This type of insurance can cover a group of projects from a single developer (Kay et al. 2003).

Due to the infrequent use of this method of financing, in particular in Sweden where most of this study’s data originates, there is some scepticism towards it:

The problem is that many investors know very little about the game business. It has taken the game industry 15 years to accomplish what the film industry achieved in 75 years. Many people on the financial side haven’t really managed to understand what can potentially become a smash hit. There have been a number of completion bond deals where guarantor, financial institute, publisher and developer have been kneaded together for a deal. The problem is that the project must be of a certain size in order to make this form of financing valid. Otherwise, it can prove to be an expensive form of financing.

CEO of (former) major Swedish game developer (2002-09-20)

The CEO points to insufficient industry knowledge among backers/bond investor to make this a popular form of financing within the game industry. The size of the project must also be considerable since each of the four entities wants a percentage of the development budget. Furthermore, the legal complexity of bond financing increases the legal and consulting fees associated with the development. Consequently, this type of financing can only be viable with high-end productions with considerable development
budgets that outweigh these additional fees and costs. Another Swedish
game developer executive, with extensive knowledge of game development
financing as cfo, dismisses the concept on the following grounds:

It’s not as if these bonds give them [developers] independence regard-
ing whether there’s a publisher or not. I could imagine it’s more like an
outsourced financing function. It could be possible. They [publishers]
could do it. But I still believe that the power still sort of remains…
because bond solutions don’t work if the publisher hasn’t committed.
Then they probably say: “Yes, if you commit, then we also believe in
it and agree that we assume half the risk – you bet half, we bet half”.
And then they don’t have to invest [their own] money. Actually this
works as if the publisher takes a loan. It’s the same thing really.

Vice-President and cfo of major Swedish
game developer (2006-02-10)

The cfo points to the fact that bond financing in reality does not change
the dynamics publisher vis-à-vis developer: regardless of whether the ac-
tual capital is internal or external the project still needs to receive approval
from the publisher. The publisher still maintains its position as a gate-
keeper to the world of commercial video game production.

Consequently, it can safely be assumed that the number of alternative
financing sources are limited. Not only does this inhibit the position of the
developer and innovation, but it also increases the risk and complexity of
the publisher business model. Developers are not the only industry sector
requesting a diversification of financing options – publishers are equally
interested since this would decrease their risk and unburden their balance
sheets. Unfortunately for both parties, the situation will not improve soon,
as the risk levels are considered to be unacceptable by the standards of
external investors/backers. Evidently the current strategies for managing
these risks are not properly understood by external analysts, or a simply
deemed insufficient for their demands.

CONCEPT DEVELOPMENT: DESIGN DOCUMENT

The design document is probably the most important type of documentation
during the development process. It describes and illustrates in excruciat-
ingly specific detail all the aspects, visuals, gameplay elements, rules, char-
acters, dialogues, environments, storyline, everything – this document is the
video game before it is realised. Drawing on an analogy to film production,
the design document is the equivalent of screenplay. It is a significantly
elaborated version of the concept document, which constitutes its embryo.
It also describes more thoroughly the technological challenges and solu-
tions required, such as game engine aspects etc, sometimes as a separate document.

Most project management of large technical project involves a substantial element of improvisation (Lindahl 2003). This realisation is even more applicable in such creative production management as video game development. Creativity in video game development is difficult to plan, not only because of its reliance on “artistic sensitivity”, but also due to the intrinsic characteristics of the video game medium where technology and (visual) art are organically interwoven. This is corroborated by a game executive:

Q: Is the design document finished before signing [publisher] contract?

A: It’s usually after and that’s slightly paradoxical – we sign an agreement for something that we really don’t know how it will turn out. What we know is the concept. The concept document should be clear for everyone: game developer and publisher. Every “nook and cranny”, for example, that a racing game has 40 levels, is described in the concept document. The design document says in detail how it will look. It becomes an extension of the concept document. We like to work together with our customers during the planning. We’ve learnt during the years that if the publisher joins in earlier and gives feedback less problems arise later in the process and less questioning.

CEO of (former) major Swedish game developer (2002-09-20)

The CEO indicates the flexible and fluid nature of the concept document. It should be noted that in the case of exceptionally high budget AAA production this type of improvisational project management is not viable since these types of production often span several development teams at separate divisions of the developer/in-house studios.

The design document can be divided into three parts according to Ryan (1999b): functional and technical specifications, and paper level designs. The most vital aspects are the functional and technical specifications, which are defined as:

In short, what goes into the game and what it does is documented in the functional specification. This is often written from the perspective of the user. How it is implemented and how it performs the function is documented in the technical specification. This is often written from the system perspective. Both form important deliverable milestones in the design stage of the game development process.

(Ryan 1999b)

Ryan also describes the evolution of the design document in the video game industry as having evolved from a single document, which focused
on the game conceptual aspect, into a highly specialised twofold document with functional and technical separations. According to Ryan, this transformation was driven by the influx of more experienced programmers/managers from business software development environments where this type of separation is the norm. The functional specification defines the features and functions, and constitutes the demands set by the game designers/authors. In most cases it is written from a user-oriented perspective and includes aspects such as game mechanics, user interface, art and video, sound and music, story (if applicable), and level requirements. These five dimensions broadly create a framework for describing most of the commercial video games genres. The game mechanics define the typical gameplay situations and core game flow. The rest of the framework has “infinite detail”, i.e. it attempts to define an extremely dynamic environment with a practically infinite number of possibilities and details.

The possibility to freely roam and explore the various spaces and options of video games belongs to its distinctive aesthetics, commonly referred to under the “umbrella notion” of interactivity. This also provides one of the greatest challenges for its project management: how do you plan a technological project whose user functionality is not fully known? The major difference, compared to traditional software, lies in the aesthetical dimension of video games – how do you design/plan a cohesive and aesthetically pleasing experience throughout the entire video game space? By splitting the design document into functional and technical specifications, at least some form of (rough) structuralisation of the project planning is achieved. The functional aspects are defined in order to compartmentalise production: it separates the game’s aesthetics from its purely technological software aspect. This of course is an idyllic division of labour since challenges arise when the functional requirements change, which they inevitably do during the course of production – how is this techno-aesthetic improvisation organized?

**PRODUCTION AND DEVELOPMENT FUNCTIONS**

The production process is where the actual video game software is produced, i.e. written into software code. This is the core of the “materialisation process”. The result of this is a gold master version of the software which is delivered to the manufacturing process, i.e. (in most cases) physical software printing on game storage media such as DVD, Blu-ray/HD-DVD discs or proprietary solutions (such as Nintendo’s). It constitutes the most pivotal and perilous phase of the entire video game production process, as it is the most cost-intensive. In the case of AAA productions the game
developer works intensively for 12 to 24 months with a full staff of from 20 to sometimes several hundred developers. After the production process the role of the game developer is concluded, and the video game is practically and metaphorically in the hands of the publisher.

In order to understand the dynamics of the video game productions process it is prudent to understand the different formal roles and specialisations in the field of video game production. The professional developer functions presented here are a summary of interviews with game executives and various professionals in game development positions, but also leading specialised game industry recruiting firms/sites such as Gamesindustry.biz/ Jobs, GameJobs, Game Recruiter, Game Industry Job, GameCareerGuide.com and others. By elucidating these standardised specialisation game development functions, many aspects of the actual production process are revealed.

It should be noted that these institutionalised developer functions have rather swiftly evolved from the mythical garage-based one-man-shows, through the rock star hacker crew, to the more well-structured corporate-style forms of organization that exist today. During these earlier organizational forms specialisations were broader, more versatile and less institutionalised – “game programmers” were part of small, tight teams where production was organized in any possible way that suited the team. Due to the rapid evolution of the industry as well as its production structures there are numerous developer studios that maintain a legacy of these versatile production forms of organization. Nonetheless, the general trend is towards highly professional organization forms that signal reliability towards investors and potential customers/publishers.

The general framework is divided into the following five large fields:

- **ART**
- **CODE**
- **DESIGN**
- **PROJECT**
- **TESTING**
- **OTHERS** – smaller niches such as writing and audio depending on type of project.

*Art*

The “art” of video game development refers to all types of visuals, *i.e.* graphics present in a video game. Generally speaking, from the minimal-
istic black-and-white *Pong* of the 1970s to the contemporary complex and dynamically photorealistic three-dimensional *FPS* games, the software architecture of video games has separated “graphics” from “code”. The visual graphics output layer seen by the gamer/user is a type of Marionette manipulated with “invisible” strings controlled by the game mechanism, which is influenced, among many things, by user input. More specifically, since the introduction of three-dimensional graphics in the mid-1990s, it has developed into the following general sub-categories: background, character, texture, animation, cinematics and interface.

The background is the “non-interactive” environment in which the game takes place. It is usually modelled with three-dimensional vector graphics, *i.e.* polygonal wireframe models, which constitute the “skeleton”. It is “dressed” with textures which are two-dimensional “sheets” of graphics which are wrapped onto the wireframe models, creating a visually acceptable 3D object. The texture artist/designer is of major importance since good texture can create the visual illusion of three-dimensionality, decreasing the need for extra polygons in wireframe models. The more polygons, the more detailed and (hopefully) realistic the graphics appear. Unfortunately, the number of polygons that can be calculated by the computer/console hardware is limited. Each new generation of game consoles/graphics cards adds capacity, but it is never sufficient – there is always that *extra* polygon detail that developers would like to add. Polygons could metaphorically be considered the most precious asset of the video game developer universe. Contemporary game development is, to a certain extent, about managing and economising polygons in the three-dimensional video game space.

A similar logic is applied to the “characters” within the video game, which are controlled by the player or so-called *non-player characters* (*NPCs*). Modelling characters requires knowledge of three-dimensional graphics, while texture design is based on two-dimensional graphics. Generally, the creation of “game art” requires fairly standardised software tools for computer graphics such as *Photoshop*, *Maya*, *3ds Max*, *LightWave*, *Softimage XSI* and similar, which are available on standard PC/Mac workstations (albeit as expensive software). Compared to other functions of game development this is the least technical as it involves none or limited programming. The market for digital/game artists is significantly larger than the video game industry due to the ubiquity of graphics in other (media) industries.

Animation (of graphics) is on the other hand a more technical and niched field. Graphics in video game software are by definition dynamic, and like cartoon animators they move the objects in the game world. Digital animators do not have to animate every move but rather prepare certain action sequences of crucial generic movements, such as the game
character taking a step forward or falling to the ground. The challenge is to create these sequences in a realistic fashion. A popular technique is so-called motion capture (“mocap”) whereby real movements of objects/actors are recorded with various advanced visual technologies and translated into movements of digital models/objects inside the game world.

Finally, cinematic artists are responsible for creating the full motion video (FMV) sequences that are frequently used as narrative components, while interface artists create the topmost layer of interface through which the user/gamer interacts with the game. In RPGs, MMOGs, RTS and simulation games these interfaces are quite complex requiring intuitive and sophisticated interface solutions.

**Code**

By “code” programmers refer to software which is coded, *i.e.* programmed. Coders are software engineers/programmers that solve and write the most technical and complex software aspects of video game production. Traditionally, coders have been self-taught hacker-type persons (predominantly men) without any higher education. As the industry has become more professional a software engineering degree of some sort is required. Programming for video games differs considerably from “standard” (business) software development. Video game coding requires “low-level programming” of the hardware, *i.e.* the software must optimise the calculation capacity to produce more polygons which give more detailed and visually impressive graphics. Developers apply advanced mathematics and some of the most sophisticated technologies within graphics projection and rendering. Other advanced technological niches such as motion capture are explored as well:

And then it’s getting more and more common to have facial motion capture where we record facial expressions with markers on the face that we then download directly. I actually believe that [game studio] is the world leader at that. That is something what will become… really big.

**CEO of major Swedish game developer (2006-03-03)**

Within this quite broad category, programmers are also highly niched into sub-categories that are applicable depending on the particular type of game developer. Specialisations such as:
• **Graphics Rendering/Camera** – works on graphics rendering software and the movements of the “camera”.

• **Artificial Intelligence** – is extremely important as most games simulate environments or objects that are expected to behave artificially. Requires sophisticated technologies and some clever use of illusions/deceptions.

• **Scripting/Event/Gameplay Mechanics** – the entire game universe of a complex video game is governed by intricate rules. Some can be automated by a so-called *physics engine*, others require careful links to automated sequence of events, which are guided with dynamic scripts.

• **Optimisation** (System, Data, Graphics) – general efficiency optimisation of software components such as the “system” (fundamental game engine functions), or the data amount (which can be reduced with compression, etc.) or graphics rendering.

• **Network** – in the age of the Internet, practical network functionality is crucial, particularly during the last two console generations when console manufacturers created their own online gaming services.

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**Design**

The notion of “design” concerns every aspect of video game development: software design, art design, user interface design etc. In the context of the video game industry the term has come to signify a general game medium design role. If the game producer “holds” the vision, a game designer “sees” the vision and knows how to implement into visuals and gameplay elements. Predominantly, this position does not involve any complex technological aspects such as programming, although the reality of the development process favours those who know software coding. It is the creative position of game development, and considered by many to be the most prestigious position in the industry because of this (Baldwin 2006). Game designers are together with the producer those who create the concept and design documents. The role of the designer captures the unique creative competence required by game development: on one hand, it involves some of the most advanced software technologies available and on the other, also incorporates highly subjective, ephemeral and artistic dimensions with inspirations from film, drama, architecture, music and countless other art forms. This amalgamation represents a fundamental tension: how is high
technology and art combined in a successful fashion? Are the differences between technology and art commensurable?

A fundamental property of the game designer is to communicate his/her vision of the video game, and to make other team members understand this vision. Consequently, the game designer knows how to describe and write for concept and design documents, but also draw diagrams and illustrations. Technological competence is also required as the game designer must know the exact limitations of the software and the hardware, and allocate the polygons and calculation cycles efficiently across the game space. To comprehensively describe the field of game design is significantly beyond the scope of this study. It is a highly dynamic and evolving discipline with research focusing on numerous aspects of the game design process. The first attempt in the field of game design is considered by many (Wolf & Perron 2003) to be Chris Crawford’s (1984) seminal *The Art of Computer Game Design* written as early as 1982.

In many regards game design could be considered the “art theory” of the video game medium. The uniquely challenging aspect of this “art theory” is that it must contain an extremely complex technological component. Technology and aesthetics in the video game medium are interwoven in a manner unrivalled by any previous form of expression. Even if other media such as television, film and even books (the complex technology required to produce and print books is often overlooked) do contain sophisticated technological components in their creation and distribution, none contains technology at its creative and artistic core in the same way as the video game medium. Consequently, the field of game design is extraordinarily broad, incorporating theories from a plethora of other fields. Salen and Zimmerman’s gargantuan overview of game design in *Rules of Play: Game Design Fundamentals* (2003) is considered a general introduction to the field. They divide game design theories into three categories (or schemas as they prefer): rules, play and culture. The first “rules” group consists of emergency/complexity theory, information theory, information system theory, cybernetic theory, game theory, systems of conflict and rule machines. The second group of “play” theories perceive games as systems of experience, pleasure, meaning, narrative, simulation and social play. The third “cultural” group of theories, finally, see these phenomena as cultural environments, rhetoric, resistance or open culture. These groups move from the micro level of the first schema with game mechanics, through the meso level of interfaces between mechanics and gamer, to finally the macro level of culture and rhetoric that surrounds the game medium. All of these levels represent a range of theories: the first is predominantly focused towards software technological approaches. The second level or schema is more qualitative, aesthetical and subjective and emphasises the cross-sec-
tion between the medium and its user – an approach that distances itself from the mathematico-technological theories of the first level, while still incorporating technological dimensions. This study will approach this level more thoroughly at a later stage. The third and final level centres on the pivotal task of contextualising the video game phenomenon in a societal perspective – positioning the video game medium and its design within the confines of media, culture and society.

However, all perspectives share a similar objective: establishing game design as a field in its own right and expanding it beyond a subset of software development techniques and acknowledging the highly creative and unique competencies required to create this medium. All design theories are based on the fundamental assumption that the video game medium provides hitherto unavailable forms of expression and contains an incredible expressive potential that must be advanced.

Project

In all divisions (art, code, design even testing) there is a practice within the industry to create a hierarchy of at least three, and sometimes even four, levels of responsibility and supervision: officer (usually only within the technology and testing field), director, lead and “normal” programmer/designer/artist/tester etc. For instance, a small group of texture artists are organized under a lead who is responsible for a particular segment of the game that can range from a level, character, types of object, etc. depending on project. A handful of art leads then report to one art director, who during the project belongs to the “board of directors” consisting of other directors from other divisions/departments. He/she meets with other directors and they take the important decisions relating to the development production process. In small to mid-size projects the level of director is eliminated and the development divisions are organized into two levels of leads and “normal” division member. The number of leads also depends on budget and project size. In the case of big AAA productions, and particularly in game developer studios with several simultaneous project, there is a need in some departments for the fourth and highest level of responsibility: officer. This is a strategic position that assumes the leadership for issues that span across several projects and teams. The leads/directors mainly assume administrative and supervising roles, as illustrated by the following quote:

Q: Does your art lead take any aesthetical decisions?

A: No, they are not meant to do that but rather turn directly to me instead. I discuss something together with the designer. It
depends on the issue. Or me together with the lead programmer, or all the leads together. Of course it depends on who is involved of course. But there is a need for a hierarchy in order to prevent everyone talking to each other and causing a mess. It works very well when everybody understands its own role, sort of.

Game artist at major Swedish game developer (2004-02-16)

As mentioned by this game artist in a mid-size development team at a Swedish game developer, the various functional divisions are not independent and separated. Division members work across divisions together and consult various competencies. The respondent stresses the need for organizational hierarchy as this prevents unnecessary disruptions, and praises specialisation of functions in a game development context.

From a strictly organizational/project management perspective within the game development team there is a dedicated role called the producer or sometimes (executive producer). This function constitutes the equivalent of the CEO of the project, that “holds the vision” of the video game – predominantly the most experienced and senior game developer who is entrusted by the top management to be responsible for the entire delivery of the project. The producer accounts for all project planning/administration, staffing, budgeting, scheduling, supervision, but also the general creative vision. The previous respondent elaborates the role of the producer:

Q: How much does the producer affect the final shape of the game? Is there a “[film] director”?
A: There must be. The producer has that role. He’s supposed to drive everything forwards and really have foresight and think “is something going wrong now?” and so on…. So, I’ll have to answer yes. On the other hand there are many [people] working together. In a film there’s usually a director. He’s the important person in the project. Here, it’s more as if the hierarchy as such, or several persons together drive things forward. You can have great influence anyhow. Even the person at the bottom can say “I want to change this” and then it might go upwards by talking to his lead. The lead ponders and talks to other leads. In any case, we work as a team.

Game artist at major Swedish game developer (2004-02-16)

In this answer the respondent defines the position of the producer as similar to that of a film director, which also “holds the vision of the film”. Despite working with fragmented and specialised organization there is no doubt that a film is “the work of the director”. A thesis famously elaborated by the “auteur film theory” that emphasises the role of the director by equating it to that of an author.


**Testing**

Seemingly a “dream job” for many gamers, this function involves test playing various versions of video games during and after the production phase. In the industry this phase is referred to as QA, which stands for Quality Assurance. This position is not a frivolous “playing-for-money” type of job, but rather an integral part of a well-organized development team. The testing team represents a type of in-house target audience that can bring constructive criticism during the final stages of the development process as witnessed by the following quote:

> The back-end phase is the last six months or so of a project that really tells the men from the mice. It’s this phase of development that makes or breaks a game. You can have everything done perfectly up until this point. But if you mess this one up, then you may as well never have bothered. If you’re bright you’ll have been liaising with your QA department all the way through the project. Usually the lads and lasses in QA are the closest link you have to the real gaming world. They’re all diehard gamers, and if something isn’t quite right then they’ll let you know.

Mark Green, Game Designer (Saltzman 1999)

Some claim (Saltzman 1999) that there is a separation between the actual QA process and the beta testing process, which is done by the game developer itself. The alpha and beta testing is then more of a technological testing phase, while the QA testing focuses on the end-user quality experience. The QA is then done by a division at the publisher, or by a separate QA outsourcing company. Similarly to the other departments QA testing is organized into leads and sub-leads, and depending on the size of the project there several levels that focus on various aspects of the video game testing. QA/testing jobs are seen as entry points to the industry for aspiring game developers. The issue of education was previously considered irrelevant as illustrated by the following quote:

> Then I applied here. I have no educational foundation at all. Many that work here are self-taught from the beginning. There’s a handful that have maybe gone to those game development schools that nowadays exist throughout Sweden. There’s more and more. But there are many that have managed to do it by themselves. Particularly considering that there haven’t simply been any educations previously, at least not in the graphics field. Maybe there’s a difference with programmers since you can learn to programme etc. […] You can take art educations – many have that type of educational background, but nobody
The respondent confirms that game developers traditionally did not regard educations as a particularly important qualification. Similarly to other creative industries formal educations do not necessarily guarantee any advantages – nobody will sign a contract with a musician merely because of his/her impressive academic record. The most important aspect after all is the performance. However, as the industry has become more professional, consolidated and institutionalised, the requirements for formal forms of video game educations have increased. Nowadays, many game developers require formal education from applicants. Private schools created by entrepreneurial game industry professionals constituted the first wave. The second wave were “creative schools” from other fields that were interested in expanding into new educational markets with game education. Finally, some universities, colleges and polytechnic institutes (predominantly young and experimental regional universities) have created masters of science/art in game development – few established/prestigious (and conservative) polytechnic universities/institutes/art colleges have ventured into this “oddity” business. The educational quality and scientific rigor of these programs remains to be proven, due to utterly hands-on/pragmatic curricula. Furthermore, these applied schools teach the trade, but do not always consider the greater industrial context. In many countries, e.g. Sweden, such courses and programmes are already producing a substantial overcapacity of masters in game development but with limited prospects in the actual game industry.

**Others**

There are a number of functions that are quite niched and not employed on every type of video game project, and might not necessarily be part of the typical game developer studio, but rather enlisted on a per-project basis:

- Audio
- Narrative

With the exception of a few cases such as high budget cinema-style AAA productions or music games, the audial aspects of video game development are somewhat underestimated by the industry and the medium
as such. Both the music and the sound effects of many, even high budget, productions, are based on stock sound/music and supervised by one or a few “sound guys” who arrange every type of sound/music present in the video game: sound effects, music, cut-scenes, soundtracks, voice samples, interface sounds etc. Why sound and music is treated in this somewhat negligent way is unclear. Initially it was a question of technology and cost: video game sound was limited to primitive electronic sounds and expensive memory costs restricted the inclusion of elaborate musical scores. The constrained electronic sounds of this era have given rise to a nostalgic genre of retro-electronic music, sometimes referred to as 8 bit music from the larger category of chiptunes, which derive their name from the sound chips used in video game hardware from the 1970s to the early 1990s. Possibly, the “alternative” aesthetic of early video games has produced this inattentive attitude towards music. Consequently, the results are of varying musical quality and sometimes considered to be derivative, plagiarised and cliché, “the bastard cousin of film music” as one music critic put it (Dell 2003).

The arrival of more capacious game media storage formats, such as CD-ROM, ushered in an era of previously unattainable musical possibilities. Video game music has evolved into a super-genre of its own with specialised composers and subculture superstars (particularly in Japan) such as e.g. Nobuo Uematsu of Final Fantasy fame. Sometimes these musically ambitious projects involve collaborations with some of the most famous film composers in the world such as Harry Gregson-Williams who has produced game music scores for three titles of the legendary Metal Gear Solid series of video games. Other famous cases are based on the licensing of famous music hits from the conventional music industry. A noted early case that employed music as a cross-media marketing strategy was the successful Wipeout series. Launched as one of the first titles on the original Sony Playstaton console it included music performed by famous DJs and club music acts such as Chemical Brothers, Leftfield and Orbital. Marketing events were arranged in night clubs, separate music tracks were released and even a Wipeout-branded club-clothing line was launched – these video games epitomised the electronic/rave music culture of the mid 1990s. The intention was to position the Wipeout brand within the context of a fashionable, club-going, music-loving audience: a somewhat older target group at the time. The target group was an older and more affluent audience of gamers that to some extent had been raised on Nintendo games, but had been alienated by the lack of sufficiently “cool” video games. Sony managed to capture this segment with impressive performance, which also established Sony as the dominant force in the industry – a position that it retains to this day.
One fundamental and challenging aspect with video game music is its temporal incompatibility with the interactive dimension of video games. A music score is a fixed and predetermined line of sound sequences of a particular length and rhythm. Video game music is on the other hand supposed to emphasise and strengthen the experience of the gameplay, which by definition is “interactive”, i.e. user-driven. A fundamental problem arises: how is the predetermined music score supposed to adapt accordingly to the gameplay action? One solution is to simply omit this requirement: game music acts in similar ways to background decoration, which adds a general emotional atmosphere and ambience without taking into account the gameplay action. In many cases the contextualisation of music is fairly straightforward as the video game space is divided into subspaces with distinct emotional ambience which can be adapted accordingly with music. However, this solution is not capable of differentiating music within a given context. The aim is delicate: game music should be synchronised with the gameplay and reinforce its emotional ambience, while not making the gamer aware of the music it controls, otherwise it might interfere and the gamer starts playing the “music” instead of the game. A way to address this vision is the attempt to create interactive or adaptive music scores, which is still considered an experimental approach. For instance, in the first incarnation of the prominent video games series *Halo*, the developer Bungie decided to create a mixture of traditional linear soundtracks and interactive music, or “dynamic music” as it is called by its music director. The implementation of the dynamic music concept is based on a “music playback engine” (O’Donnell 2002) that dynamically “composes” music based on input from the gameplay action. Basically a short music segment is repeated until some gameplay event triggers a finishing music section according to context with “many dramatic or emotional states; combative, spooky, tense, sad, calm, defeated, or victorious” (O’Donnell 2002). Using this fairly straightforward technique based on repeating sound events can to some extent adapt the linear requirements of emotionally synchronised music soundtrack, with the dynamic interactivity of the video game medium.

Another category of small yet frequent game development specialisation niche consists of various writer roles. These are special writers that write stories, scenarios and dialogues of the video game. They are predominantly useful in AAA genres which at their core contain narrative representation forms with a highly “cinematic” story-driven gameplay with intricate narratives, characters and extensive use of FMV (Full Motion Video) sequences, often adaptations of other narratives from literature, film and drama. Their position in the industry has been established with such organizations as the *Game Writer’s Special Interest Group* of the IGDA (International Game Developers Association), which is one of the most prominent associations.
within the global game developer community. The position of writers in
the game development process and narrative dimensions of video games is
an extremely pivotal issue that cuts to the core of how the video game me-
dium should be interpreted and understood. It will be thoroughly analysed
at a later stage in this study.

**QA/“The Crunch”**

The last stages of the production phase are usually referred to as “the
 crunch”. It is a mythical stage of frenetic development to meet a (pub-
lisher) deadline. There are countless stories on game developer forums
where this critical phase is described with sleepless nights, energy drinks
and hasty remakes. Game development is characterised by rigorous pro-
ject scheduling and planning, but despite this (or maybe because of it?)
delays occur in most projects. The publisher might, however, find these de-
lays justified due to modifications of the concept/design documents and/
or extensions ordered by the publisher. There is a generally agreed time-
to-market publishing schedule since most genres, such as movie games
and formal genres (sport, fps, racing and others), are organized into “slots”
according to a “publishing pipeline”. The publisher wants for instance a
new fps game, racing, sport game etc in Q3 of 2009 in order to feed the
distribution/retailing “machine” and to avoid two competing games from
the same genre, as this would obviously be inefficient resource allocation.
It is also a strategy to counter the campaigns of competing publishers. By
launching a competitive genre product, in the same season/time frame/
slot, the publisher prevents the competitor from draining the market for
that particular product.

During the crunch one can easily claim that the relation between work-
load, working conditions and compensation becomes fairly strained. The
question becomes truly precarious when the creative care of game devel-
opers is exploited by their customers/employers, i.e. the publishers. One
famous instance of this is the notorious so-called EA Spouse case. It was
the name of a weblog written by an anonymous spouse to an unknown
developer at the world’s biggest game publisher/developer Electronic Arts
(EA). Later revealed to be Erin Hoffman, then the fiancée of Leander
Hasty, the author of the blog criticised the labour practices of EA and par-
ticularly during various crunch periods. She thoroughly describes how a
particular EA in-house developer studio (in Los Angeles) during develop-
ment of *Lord of the Rings: The Battle for Middle-Earth* initiated a practice of
“pre-crunching” with eight hours of work six days a week, after only a few
weeks of development. Despite passing deadlines set by project managers
for this pre-crunch the workload continued for months and then accelerated to twelve hours six days a week, which continued on beyond initial termination dates. Finally, several months later, the “real crunch” began with about thirteen hours of work seven days a week, averaging 85 hours/week. Furthermore, the employees received no overtime, no compensation time, and no additional vacation leave (EA_Spouse 2004). Erin Hoffman summarises her perspective on the situation as follows:

No one works in the game industry unless they love what they do. No one on that team is interested in producing an inferior product. My heart bleeds for this team precisely because they are brilliant, talented individuals out to create something great. They are and were more than willing to work hard for the success of the title. But that good will has only been met with abuse.

(EA_Spouse 2004)

She describes how creative workers are emotionally attached to the outcome of the production – working for the “love of (video game) art”. Undoubtedly, Erin Hoffman’s depiction is subjective and does not represent the general working conditions of the industry or even EA. Nevertheless, Hast and other software engineers filed a class-action suite against EA for unpaid overtime that resulted in victory and a $14.9 million settlement (Jenkins 2006a) which was preceded by a similar lawsuit and settlement with graphics artists (Maragos 2005). Hoffman and her husband Hasty later went on to create GameWatch.org, a website that covers discussions on the working conditions in the video game industry. The EA Spouse case gave rise to an intensive debate among game industry professionals and webforum discussants regarding the working conditions and Quality of Life (QoL) within the video game industry.

As with any type of software development the first “rough draft” of the game software is called alpha, and then after a number of improvements the project enters beta testing. Some game developers also have pre-master and release candidate (RC) versions. The final release version is usually referred to as the gold master release. An industry professional elaborates:

Alpha, to us, means that everything that is supposed to be in the game is in it, but it isn’t finely tuned. For instance with racing games with 40 tracks there are 40 tracks finished, 10 cars are also finished, but there are small adjustments that have to be made, and those are made during the alpha stage. You’re not supposed to add anything content-wise during this period. During beta you don’t touch anything. Then it’s pure de-bugging and ensuring that the functionality is correct. In-
ternally we have something we call the pre-master that we submit to the publisher. This is what we consider to be the master candidate. If it’s console [game] then the game must be sent to them for approval.

CEO of (former) major Swedish game developer (2002-09-20)

The game software’s functionality and its content quality are also verified in a separate process by the publisher and its QA team. Finally, in the case of console games the software is also checked by the console manufacturer. Consequently the game software is in most AAA cases professionally scrutinised three times before it reaches retail, which indicates the stringent quality requirements put on video games. Generally speaking the aesthetical dimension of video games make them more sensitive to “subpar quality”. Although hard to verify theoretically, this claim is based on the premise that perfectly functional and error-free game software can still contain fundamental gameplay aesthetical flaws. Subsequently, it can easily be assumed that the notion of quality is significantly more complex and multidisciplinary concept than in the case of other more conventional software development.

### SUMMARY OF PRODUCTION PHASE

In the following table a diagram is presented that illustrates the temporal organization of the various game development specialisation functions.

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Every type of department is active during the production stage. As is clearly visible, the project department, i.e. the producer, is the most active entity spanning the entire video game development process. The producer (and possible assistant producers) “holds the vision” throughout the entire production process and is responsible for its delivery. At second place in activity comes the design department, which contributes already at the concept and design document phase and contributes substantially during the pre-production and prototype stage. Depending on the project they are not active during the actual project initialisation as the actual “game idea” might be authored by someone else (more senior). During the QA/post-production their input is not needed since (in theory) the functionality of the game software should be set at the end of the production phase. Artists on the other hand are active in the actual software-related processes, such as the prototype and design document phases. Corrections to the game art are also made during post-production, in contrast to the designers and the actual game design. Programmers are needed during prototype development stage and primarily during production. Their role is pivotal during the QA and post-production phases. They do not in any substantial way contribute to the concept and design documents, although in some projects technological aspects are heavily elaborated in the design document. Finally, the activity levels of the “others” category consisting of writers and audio designers depend on type of project. In narrative-driven video games the writers are needed during the concept development and production. Audio design is needed during prototype, production and post-production.

MANUFACTURING

When the publisher and console manufacturer have approved the video game software it has to be manufactured. Despite being by definition a digital and information technological industry and also the oldest digital entertainment industry, paradoxically the game industry relies almost completely on physical distribution i.e. transferring the video game software onto a physical game storage media and then a process of international shipping. There have been numerous formats and types of media storage formats. The design and rationale of physical storage formats depend on several factors:

- Technology
- Production cost
- Copy protection/anti-piracy strategy
End-user experience

Multimedia/convergence strategies

Third party publishing control mechanisms

It can be assumed that, from a console manufacturer point of view, there are several convincing reasons why this status quo should be maintained vis-à-vis alternative distribution forms such as electronic/online varieties. Despite having several evident disadvantages, physical storage media still remains the primary solution, and its existence is predominantly a question of business politics and disposition towards technological and business model reformation, rather than of advantages regarding factors such as cost, technology or convenience.

Production cost is the dominant factor. Certain technologies such as CD-ROM or DVD have revolutionised the technological storage capacity, but also the production costs since they were developed by consortia, which shared the development costs, thus reducing the costs of implementation and production.

An all-important factor has always been the level of copy protection provided by the physical storage format. Video game console manufacturers and PC games manufacturers quickly discovered that illegal copying posed a considerable threat to their business models. Many early game console manufacturers during the 1970s and 1980s lost control of their game markets due to rampant illegal copying, but also due to the limited control mechanisms in legal third party video games. Some business software (predominantly such that creates lock-in effects, such as developer platforms or middleware software) under some circumstances can benefit from illegal copying by passively allowing this process to serve as an effective distribution mechanism. The software creates dependencies to other (lucrative) revenue sources such as maintenance services, upgrades and vital software extensions. Conventional video games software cannot apply this strategy since it is already using it on the hardware level which acts as the “lock-in platform” and is sold at a loss or zero-profit. Sony allegedly did not prioritise copy-protection when they were choosing a media storage format for its first-generation Playstation, and did not pursue copying aggressively enough as this would have impeded the growth of their entry into the video game industry. Fierce copying ensued as Playstation game software could be downloaded via the Internet, burnt to CD-ROM and played on a Playstation console equipped with a so-called modchip (a purpose-built electronic device which has to be installed on the actual game hardware). These copying schemes continued with Sony’s second generation Playstation 2 console. Numerous court cases were fought over
the legality, in some cases (the UK) favourable for Sony (Fahey 2004d) and in other cases (Australia) not (Fahey 2005b). Modchips are nowadays available on practically all major video game consoles.

Aspects of end-user experience and multimedia/convergence strategies are interconnected in the context of game media storage systems. One of the initial advantages of the Playstation 2 was its capability to play DVD movies, which at the time was an expensive technology. CD or DVD technology increased the end-user experience, since it expanded the functionality of the video game console to make it a multimedia player. This contributed significantly to the success of the DVD format. The game media storage format is used as a “Trojan horse” in the format battles of the home electronic industry. Using precisely the same strategy the current generation format Blu-Ray managed to defeat its competing format, HD-DVD, by being incorporated into the Playstation 3 console.

The use of physical storage formats has produced path-dependent reliance on physical storage media. This system might have its disadvantages, but as far as the incumbent players are concerned, it serves the purpose of creating a fairly stable power system. Admittedly it gives rise to an inertia that preserves the status quo, and reluctantly adopts any modifications to its fundamental mechanisms such as electronic/online distribution.

Case: Nintendo

Noted cases that illustrate the role game media storages play in the video game industry, are Nintendo’s antitrust and legal cases in USA, more precisely two cases: Atari Games Corporation vs. Nintendo of America and States of N.Y. and MD vs. Nintendo of America (Kent 2001). The first, legal, case concerned issues of copy-protection and third-party control mechanisms/technology, while the latter concerned alleged anti-trust behaviour in relation to third-party game publishers. Nintendo has always implemented a restrictive copy-protection strategy with proprietary media storage formats that despite higher production costs and inferior technological performance have been preferred to more standardised formats such as DVD or CD-ROM.

During the late 1980s and early 1990s Nintendo required in exchange for a $10 fee (Kent 2001), their third-party publishers to employ Nintendo for the manufacturing of manuals, packaging and most importantly the actual game cartridges. To limit illegal copying and to control third-party production Nintendo designed a software program called J0NES (Radar 1992) which prevented the use of unauthorised game cartridges with the game console. Game publisher Atari Corporation circumvented
this mechanism by reverse engineering a program (by falsely obtaining
the 10NES code from a U.S. Copyright Office, Kent 2001) that allowed
the production of Nintendo-compatible game cartridges without using
Nintendo’s manufacturing facilities. Atari then filed a lawsuit against Nin-
tendo claiming that it had tried to monopolise the home video game mar-
ket, and was requesting $100 million USD in compensation. Nintendo filed
countersuit and warned stores not to carry Atari-related products, which
proved to be an effective measure. Ultimately Atari lost their cases and
were found guilty of having illegally copied the 10NES software mecha-

isms. Inevitably this proved how vital copy-protection measures are in
the context of game manufacturing. They provide not only copy-protection
but also a reason for basically monopolising game media production, and
subsequently also impose a firm control over third-party game publishing.

Claims of illegal monopoly were reinforced when Nintendo in 1988
was required to limit the manufacturing of game cartridges due to worldwide shortages of its most important component, ROM chips. State attorneys filed cases that drew upon claims from numerous previous legal cases against Nintendo: price fixing, anti-competitive behaviour, bullying against retailers and over-regulating licenses. The central question was whether Nintendo had the right to: a) enforce any restriction on their licensees/third-party publishers b) legally “own” the market for all type of Nintendo-games. After considerable legal wrangling the conclusion was to all intents and purposes “yes”. Nintendo was forced to reimburse $5 USD to customers and choose voluntarily to allow their licensees to manufacture their own cartridges, and Nintendo also dropped its exclusivity clause that prevented third-party publishers from releasing the same game on competing platforms.

These cases illustrate comprehensively that the physical manufacturing
is not merely a question of technology, production costs and user-experi-
ence – it constitutes the most powerful and tangible tool for maintaining
the power dominance of console manufacturers in the industry. This might explain the reluctance of the game industry to make the transition into
electronic distribution.
DISTRIBUTION

As in any media industry the process of distribution is a pivotal activity and in some cases to such a degree that it develops into a power position (e.g. Comcast’s transformation from cable operator to media producer). Somewhat paradoxically, as one of the first truly digital industries, the game industry relies on physical distribution of its product. Publishers manufacture games by printing/burning software onto game storage media such as DVD/Blu-Ray discs/etc, putting them in boxes and then transporting them to retailers, sometimes on other continents. Why is that, and what role does physical distribution of game media play in the global game industry? What is its historical development? What is the prospect of electronic distribution in one of the oldest “digital industries”? These questions will be explored below.

Since most video games are currently, and have historically been, distributed on physical game media their distribution is an essential process in the value chain of the video game industry. Historically, distributors constituted separate and independent entities with national or at best regional range. Their business model was to act as middleman between the local game retailers and publishers. Games are ordered in large quantities and resold in smaller quantities to the game retailers. Evidently the business model assumed aspects of the sales risk since retailers have historically been allowed to return unsold video games. In the early volatile days of the game industry a distributor could prosper and become a de facto agent for the game publisher – in some cases taking care of the marketing, localisation and pricing. In some exceptional cases the distributors financed game development by guaranteeing distribution deals. Subsequently distributors acted as full-fledged publishers, and indeed some of today’s publishers are founded on successful distributors. The problem with this type of financing/marketing strategies was its focus on isolated game projects ignoring the long-term perspective, as the following quote illustrates:

Most [major] publishers have local offices in Scandinavia. Question is how it looks in the rest of Europe. Poland and Czechia are about ten years after us, I would say. Maybe not in terms of how consumers
think about games, but the way in which publishers operate in the market. In principle, only Electronic Arts works locally. Instead local distributors take care of reselling in Czechia and Poland, and to a certain extent they have very good local knowledge. Electronic Arts’ venture in these countries is similar to Sweden ten years ago. They localise products and do more local marketing. They build the brand, which will generate profits and PR for them. The success of Electronic Arts is based on slowly but surely building “something”, while a distributor such as Pan Vision that works as Sega primarily thinks product by product, while EA thinks about the brand from a longer perspective.

Game industry analyst/reporter in trade journal (2006-02-22)

The respondent compares EA’s strategy as being more similar to the Central European markets which are considered to be where Sweden was ten years ago in terms of marketing strategies of game distribution – a “product-by-product” thinking ignores the value of creating consistency and brand presence. EA realised this early by providing substantially more integrated and professional services:

For instance, EA appears to be an exceptionally bright star in this context, even if the others have in certain regards closed in on it. For many years they were fairly unthreatened in the position as the only serious company. The reason why they were serious was their commitment to distribution. With shelves in the store, just like Procter & Gamble. They knew that they owned shelves in 400,000 stores, and if we put two games in each it’s 800,000. They were also sufficiently strong to renegotiate reseller returns and stuff like that, which meant that they could finance these huge budgets with their sport series.

Former CEO of Swedish game publisher (2006-02-09)

The game publisher executive points to EA’s extensive focus on physical distribution as the main driving force behind their success. By emphasising distribution EA not only managed to more efficiently distribute video games to a wider international market, they also lowered their sales risk by creating a more predictable demand through their network of point-of-sale displays in hundreds of thousands of game stores. Together with more favourable (for EA) return policies it gave them the financial muscle to produce extremely high budget video games, which were broad games adapted for a broad distribution network.

Today, good timing and efficient distribution strategies can be the difference between failure and success. The 2008 industry record of first day and first week might illustrate the scale: Grand Theft Auto IV (GTA4) sold 3.6 million copies in its first 24 hours, garnering $310 million, and during the course of the first week it sold 6 million copies, generating revenues of more than $500 million (Richtel 2008). To rely fully on an independent
game distributor would be too risky: why invest upwards $100 million in the development of GTA4 (Androvich 2008a) and then put its commercial prospects in the hands of independent distributors? Consequently, large publishers have purchased or established their own distribution infrastructure in large video game markets. However, not even EA has the resources to establish a distribution subsidiary in every market. In underdeveloped markets the cost benefit is simply inadequate. A game industry reporter elaborates:

It is a question of assessment: is it profitable for us to establish a local office or should we let a distributor take over? If you compare market shares between the United Kingdom and Scandinavia. We're not comparing volume but market share. For instance Atari, Activision and EA have local offices with larger market shares. While Sega has larger market shares in the United Kingdom. You can clearly see the effects of being on location, taking care and focusing on your own products. Same thing applies to [publisher] Capcom that has local offices in United Kingdom and Germany but in the rest of Europe they have decided to split it between local distributors, for instance Electronic Arts, PAN Vision [a major local distributor] in Sweden. Consequently Capcom isn't as successful here.

Game industry analyst/reporter in trade journal (2006-02-22)

It constitutes a fundamental outsourcing dilemma: is it profitable to establish a regional distribution office, and how do we effectively define the regions? The industry analyst claims that larger market shares are the result of local distribution presence. This might be caused by local competence, but might also be due to the fact that regional distributors often distribute several (competing) publishers and are required to maintain a more “neutral” distribution approach. Global publishers create alliances with competitors in some regional markets, while competing actively in others. For instance, the regional Swedish market-leading distributor PAN Vision competes with EA’s local distributor in Sweden/Scandinavia, while in the Baltic countries it chose to acquire the distribution rights to EA’s entire portfolio of video games (Martin 2007a). EA also acts as a distribution partner for other publishers/developers under its EA Partners programme, used by famous independent self-financed game developers such as id Software, Valve, Epic Games and others (Brightman 2008).

Electronic Distribution

During the last decade the question of online/electronic distribution has loomed large as a serious and viable distribution alternative to the traditional physical distribution process. Online/electronic distribution has the
potential to overthrow the entire structure, value chain and dynamics of
the game industry, making game distributors, retailers and possibly even
publishers unnecessary, shifting the control of the industry into the hands
of developers. Games would be released directly by developers instantly all
over the world through various networks/Internet. The increased availabil-
ity and convenience would drive more game sales directly to the pockets of
developers, yielding more self-financed development that could hopefully
reform the industry structure and increase innovation. Electronic distribu-
tion platforms would evolve the system into a thriving economic and
technological platform similar to game consoles (Dymek 2004a).

There are, however, severe limitations to these lofty visions of electronic
distribution. Independent electronic distribution platforms are currently
only available on the open PC platform since creating independent elec-
tronic distribution systems for game consoles would be impossible due
to the control by console manufacturers, who cooperate extensively with
all the major game publishers in the business. Probably the most success-
ful PC-based distribution platform is Steam (Dymek 2005a, 2005b). The
legendary game developer Valve fell out with their publisher Sierra Enter-
tainment over contracts and created the Steam distribution platform which
omitted the game publisher’s physical distribution channels. The platform
erupted into a court battle where the publisher Sierra Entertainment (part
of Vivendi Universal Games, now called Vivendi Games) accused Valve
of breaching contracts and circumventing the publishers retail plans. It is
evident that the case of Steam and its lawsuits represent a battle of control
over a burgeoning technology that has the potential to substantially trans-
form the entire video game business.

Virtual community services within the Steam platform act as strategic
business tools in the struggle for greater revenues and independence from
publishers. It combines electronic distribution of games, instant messag-
ing, automatically installing patches and upgrades, automatic server lists,
and “virtual” Valve and third party game stores, into one unified software
platform which is available for free. Steam is hence Valve’s only fully con-
trolled distribution channel. It is unfortunately still in many ways an infe-
rior distribution channel compared to the “traditional” publisher/physical
distribution channel through retailers. The Steam network has since its
inception been notoriously plagued by outages, unreliable service quality
and long download times. Furthermore, there are also major challenges
related to marketing and PR issues, as elaborated by this quote:

I believe that regardless of how things change, publishers and console
manufacturers are very afraid of and mind the retailers. You can see
what kind of power Walmart and GameStop [large retailers] have
in the USA. They are very specific and explicit when they talk about
online services such as Xbox Live Arcade as being a very insignificant service and that games will still be sold in stores. Many developers are utopian: “we’ll sell the games ourselves”, digital distribution bla-bla. I can understand that they want a larger slice of the cake, but it’s an extremely complex situation to be in if you market and make PR for a game. It’s very difficult to reach out. It’s difficult to replace that huge store distribution channel considering their customer contact. It happens: Half-Life [fps game] is distributed via Steam which is the developer’s [distribution] system. Regardless of this they have to rely on a distributor which in this case is a contract with Vivendi.

Game industry analyst/reporter in trade journal (2006-02-22)

This indicates that the future potential of electronic distribution is decided not by technological factors but primarily business political reasons. Giant retailers such as Walmart, Gamestop, EB Games would lose all their revenues (consequently having most vested interest in the current physical distribution order). Distributors would have to transform into outsourcing partners for local marketing campaigns and/or becoming electronic distribution infrastructure partners (server farms, billing systems). Publishers would probably prefer electronic distribution (it would absorb the margins from retailing/distribution), if it were not for the extensive distribution networks maintained by publishers, which would be costly to divest. Furthermore, the threat of potentially increased software piracy due to easier copying of also constitutes a decisive factor for game publishers. Game developers would probably not object, as electronic distribution would provide a platform for increased quality of user-experience with social communities, chat, software updates, new game levels – generally a more direct communication with the end-consumer. Finally, console manufacturer would also embrace electronic distribution since they already own platforms that could be developed into technologically “closed” and vertically integrated electronic systems of distribution with copy-protection, similar, for example, to Apple’s iTunes Music Store or pioneering efforts on the PC such as Steam, Direct2Drive. WildTangent and similar. However, console manufacturers are also publishers in their own right, relying heavily on physical distribution of their game consoles using the same channels/retailers as video game media.

RETAILING

Retailing is the first, or the last (depending on one’s perspective), step of the industrial value chain. This step is fairly straightforward: the actual physical game media in its packaging is sold to end-consumers in a store. There are basically three predominant kinds of retailer:
Specialised retailers are those who only sell video games, gaming hardware and gaming accessories. Most famous specialised game retailer chains are The GAME Group, GameStop (which merged with their main competitor EB Games in 2005), Game Crazy, Gamestation (bought by GAME in 2007), Broccoli/Gamers, Animate, Play N Trade, to mention the dominant players. Supplementary retailers sell a similar selection (though often more limited) within a conventional range of other “conventional” products, predominantly home electronics, and IT/electronics products, or in music/film/book/”multimedia” chains, even in grocery stores. Finally, online retailers are those who take the reselling process onto the World Wide Web and sell a full range of video game titles, hardware and accessories via mail delivery.

Despite sometimes being declared an obsolete business model due to low commodity retailing margins and threatened by online retailers, physical retailing is undoubtedly still in a strong position as witnessed by the following quote:

Retailers simply have a very strong position. Because they own the customer. The channel has changed back and forth. Just look at the case of Nintendo that many years ago was sold via [name of retailer], which basically was a consumer electronics chain similar to ON-OFF or Siba [major Swedish electronics retailers] today. Nintendo is also strong at most of the toy stores. Then specialised stores turned up. Grocery store chains like ICA or COOP have grown stronger. New channels have also been added. For instance, the PSP [handheld game console] can be bought at Phonehouse [mobile phone reseller] stores nowadays.

Game industry analyst/reporter in trade journal (2006-02-22)

The respondent gives a detailed account of game retailers’ position in the industry. Having developed from consumer electronics it also historically involved toy stores. Then specialised stores appeared that focused on the more sophisticated video gamers that required a more extensive selection.

Online retailers have indeed quickly changed the game retailing market due to the (high) technological literacy of hardcore gamers which quickly embraced the novelty and initial difficulties of online shopping. By avoiding the costly need for physical stores, reducing redundant staff, centralising warehousing, automating the order/payment/handling processes with server software, online retailers can lower prices, expand selection and pro-
vide competitive offers, despite the extra cost of mail delivery. However, “traditional retailers” are not passive, but have responded by creating their own online stores, and wielding their purchasing power by placing larger (and cheaper) orders with the publishers/distributors. Some distributors have also set up their own online stores. Publishers have also experimented with direct online sales, but this often results in a classic “channel conflict”. Actually, traditional retailers have defended their business models fairly respectably against online retailers. Dominant North American online retailer DVD Empire was forced to close its online video game business in 2007 by indigently providing the following explanation:

Games bring in great foot traffic for physical retailers and they make money elsewhere. EB Games/Gamestop relies heavily on their used business. It is very difficult for online retailers to have an advantage, except for convenience.

(Bramwell 2007)

The CEO of DVD Empire indicates that “brick and mortar” video game retailers have a structural advantage since they rely heavily on used/pre-owned games sales, which is challenging to do online. This additional business model is based on three factors: hardcore gamers, “replayability” and high second-hand value. Since hardcore gamers consume 7.2 video games/year (Williams & Kumar 2008) with MSRP (Manufacturers Standard Retail Price) at $60 USD this becomes a significant investment for the consumers. Furthermore, like any other media consumption pattern, once a video game is consumed it loses most of its initial consumer appeal – it becomes boring since its surprise element has been eliminated and the gameplay becomes less challenging. However, not all games can be finished – some video game genres actually represent quite the opposite: puzzle games, MMOG, RTS, simulation games and many other genres are meant to be played infinitely, or at least until they become boring to the player. The “replayability” or “replay value” is predominantly determined by the presence of a story/narrative that once experienced loses most of its secrecy and attraction – in other words, the presence of irreversible elements within the gameplay. Video games are also characterised by their high second-hand value. Unlike a bicycle, but similar to other media forms, video games have no “wear” – the experience might deteriorate if the same player replays it, but for a novice the game is identical to a new game copy.

According to a study by consultancy firm OTX, in the USA alone the market for used/pre-owned/second-hand games is 49 million, and 26 million have sold at least one game during the last year (Williams & Kumar 2008). Furthermore, the world’s largest game retailer GameStop revealed in its 2008 regulatory fillings that almost 25% of revenues now stem from
used/pre-owned video game sales, which is actually more than new hardware sales but less than new video games sales which represent almost 40% (Kumar 2008). The rise of pre-owned sales has spawned a debate in the industry concerning its financial and ethical implications as it basically negatively redistributes sales profits to the retailers, and not its creators, developers and publishers (Lee 2008b). Some urge the industry to limit this (Lee 2008a), while others treat secondary markets as part of life and indicate that they help dedicated gamers to buy more games (Boyer & Cifaldi 2006). From a business model point of view extensive secondary markets become a form of video game rental, which in itself is also a contested yet popular form of revenues for video game retailers. Video game rentals accounted for more than 12% of all sales in 2004, and many consider them as having a cannibalising effect on the sales of new video games (Hook 2004). Nintendo initially attempted to ban rentals of their video games, but have with time accepted this retailing form (Voelish 1989).
MARKETING AND PUBLISHING

This chapter will analyze the processes of marketing and publishing—the two core tasks performed by the publishers. In a later subchapter the publishing process of revenue sharing will be analyzed, and particularly the dominant royalty advance model. It explains much of the business dynamics publisher vis-à-vis developers. Publishers constitute the most powerful entities in the game industry due to their scale, profits but also due to their position as access gate to the market for investors and developers. These are global corporations with thousands of employees, and many publishers are listed on stock exchanges. The game publisher segment, together with console manufacturers, represent the most successful and well-known face of the industry. For instance, Electronic Arts is listed on the S&P 500 and NASDAQ 100 indexes, has revenues exceeding $4 billion, and its record profit for a single year (2006) was $236 million (Martin 2006). There are definitely advantages in expanding the size of the product portfolio since this decreases the portfolio risk, which explains why many small/midsized publishers are increasingly acquired by bigger publishers.

Two basic types of publishers exist: platform publishers and third-party publishers. Platform publishers are owned by a console manufacturer and exclusively publish titles on their own platform. As will be shown later, this is an essential strategy for console manufacturers as this is a way to ensure a certain guaranteed level of high quality selection for their own platforms, which is crucial to their competitiveness. Third party publishers are platform-neutral and publish titles on any platform (console, PC, handheld, mobile etc) where it can make a profit. Within this category there has historically been a classification into regional publishers (strong in certain markets), and genre-specific publishers (specialised in for instance RPG games, strategy games, mobile games etc.). However, with increasing development costs and expanding portfolios it is challenging for these niched publishers to remain independent.

Besides financing, publishers are responsible during the critical marketing process. Marketing is a process that spans from idea creation through the production process and well beyond distribution, advertising and sales.
Depending on definition, marketing is the process of bringing products/services to the market, thus requiring an analysis and understanding of the market, consumers and overall strategic objectives of the company/organization. Through misinterpretation and misuse the term marketing has come to mean the equivalent of “advertising” or a glorified term for “sales”. A reminder, according to the somewhat stodgy but nevertheless seminal marketing theorist Kotler, that marketing is defined in two ways:

*A social definition:*

Marketing is a societal process by which individuals and groups obtain what they need and want through creating, offering, and freely exchanging products and services of value with others.

*A management definition (from American Marketing Association):*

Marketing is the process of planning and executing the conception, pricing, promotion and distribution of ideas, goods, services to create exchanges that satisfy individual and organizational goals.

(Kotler 2000)

Both these definitions have one thing in common: to satisfy the needs of entities (individuals and organizations) by delivering product/services in line with these needs. Marketing is thus *not* about luring, or worse deceiving, customers with outlandish claims trumpeted through impressive advertising. As management theorist Peter Drucker puts it:

> There will always, one can assume, be a need for some selling. But the aim of marketing is to make selling superfluous. The aim of marketing is to know and understand the customer so well that the product or service fits him and sells itself. Ideally marketing should result in a customer who is ready to buy. All that should be needed then is to make the product or service available.

(Drucker 1973)

This study subscribes to the notion of this original, and significantly wider, notion of marketing as a process that encompasses almost the entire value chain and company.

Of course, theories have evolved since the days of Kotler’s first edition of his seminal *Marketing Management* in 1967. It has developed into subfields of branding, international, direct, personal, viral, industrial, experiential, community, event, post-modern marketing and countless others. Indeed, Kotler’s definition is highly modernist and static in its assumptions regarding individuals, communication, organizations and market. In Kotler’s traditional approach to marketing there is *a need with the customer* that can be identified and commercialised by agile companies and organizations. His theories inevitably underestimate the complexities of communication
and the creation of needs among consumers and society as a whole. Needs are not intrinsic, they are created, redefined, affected, modified on a daily basis. For instance, few people have an intrinsic need for a “touch screen mobile phone”, but when Apple introduced the iPhone, preceded by an ingeniously long initial period of rumours and speculation that generated an estimated $400 million USD in free publicity (Graham 2007), the device became one of the fastest selling mobile phones of all time. Considering the general trend within consumer culture research describing consumption as a form post-modern identity construction, it is increasingly difficult to define and target specific needs with consumers.

**ROLE OF PUBLISHER**

But what has this to do with video games? The process of publishing is in many regards the same as marketing video games. However, similar misperceptions regarding the role of marketing exist within certain layers of the industry and game community/culture, particularly among independent/“indie” game developers. The role of the game publisher is reduced to two functions: financing and advertising (i.e. “marketing”). Game publishers are “square, bean counter suits” that inhibit artistic creativity of freethinking developers, and then take all the credits/profits for someone else’s work. A game developer CEO comments the relationship between game developer and game publishers:

> I think there’s a fairly good relationship and specialisation between game publisher and game developer. Many game developers have an image of “we don’t need no publisher, we could do this much better ourselves” and “if only we could take the financial risk”. I have to say that the publisher contributes with much more than risk: commercial instinct for what works and what doesn’t. It’s easy for some at the publisher to provide feedback and question us in a way that’s difficult for someone internally. If someone externally comes and says: “this must be changed because it’s linked to a payment”. It becomes a sort of… well… a power language that works [laughter] as good input during production. Sure... sometimes it doesn’t work well when you think that they come with strange ideas. But good publishers come with an outsider perspective on what we’ve done and give feedback based on this. It works very well and then you adapt to it and receive some of it when you deliver.

**CEO of major Swedish game developer (2006-03-03)**

The respondent explains that publishers provide more than merely financing. The main function is to provide “un-biased” external opinions regarding the work of the game developer. This external opinion is not only based
on technological or game design-related factors, but also on commercial aspects – in other words market know-how. Furthermore, the game developer executive (partially) respects the power language of the publisher: it pays for the development and it is better to listen to their needs since they are the customers.

Generally speaking the management executives of game developers do not express any fundamental criticism, often referring in their explanations to principles of free market mechanisms. An example:

Q: Let’s put it this way: why do publishers exist?
A: Because you’re supposed to focus on the things you do best. We’re very good at delivering concepts. Developing concepts and… and yes, listening. We’re also very good at [understanding] the end-consumer. But to do a marketing machine like [name of publisher], they are extremely good at that. When it comes to pricing, marketing, creating buzz around the product, reaching out in a good way and then perform according to how the market is continuously moving, and maintaining steady contacts with the retailers. This is a huge machine that we wouldn’t at all be good at.

Vice-President and CTO of major Swedish game developer (2006-02-10)

When asked directly whether game developers have an unequal position in the industry, another game developer CEO responds by primarily criticising game developers:

Q: Is it an unfair structure [of the industry]?
A: No, you get the position you deserve. Game developers have been too weak, to bad at getting venture capital. They haven’t had the interest or the focus to create a position of power. It’s very much about how the power is distributed. It’s changing. Developers have better and better positions. But publishers contribute to the process – they finance and take the financial risk.

CEO of (former) major Swedish game developer (2002-09-20)

The game developers can primarily blame themselves for their general lack of business acumen and difficulties in understanding the power relationships of the industry. The CEO generally implies a market liberal approach – game developers are responsible for their own successes. The CEO of another game developer shows the same attitude, when discussing the fairness of publishers retaining the IPR created by game developers:

Q: You are after all the author?
A: No, I think it’s fair. Or I mean… that’s the way it works. If you take the incredible financial risk that they do, I understand why the want to own the IP. Absolutely, if I were a publisher I wouldn't either have invested in games if I couldn't own the IP, I can tell you. So I don’t see that type of fairness structure here. They are investing a lot more in this game than we do. Then I think it’s only fair if they actually own it.

CEO of major Swedish game developer (2006-03-03)

Simply put: there are no issues of “fairness” in the power relationships between publishers and developers, but rather “that’s the way it works” and this is governed by the size of financial investments. Admittedly, game developer executives have no interest in biting the hand that feeds them by criticising their only customers, i.e. the publishers. It takes years, and several successful projects, for an independent game developer to create a good relationship with the major publishers capable of publishing AAA titles. This situation is hardly improved when considering the increased concentration in the publisher segment of the industry.

**Without Publishers: Independent Game Development**

More independent perspectives on these issues might be provided by the self-proclaimed independent game developer community. Their sentiments are best summarised by Manifesto Games, an independent game production forum, but also independent games online distributor. The website and the Manifesto movement draw visually and rhetorically on style from Soviet Union propaganda, generally alluding to (leftist) revolutionary romanticism. Excerpts from the Manifesto Games manifesto:

The machinery of gaming has run amok.

Instead of serving creative vision, it suppresses it. Instead of encouraging innovation, it represses it. Instead of taking its cue from our most imaginative minds, it takes its cue from the latest month’s PC Data list. Instead of rewarding those who succeed, it penalizes them with development budgets so high and royalties so low that there can be no reward for creators. Instead of ascribing credit to those who deserve it, it seeks to associate success with the corporate machine.

It is time for revolution.

(Manifesto Games 2006)

The industry has turned into a “machine”, similar to the Marxian “capitalist machine” that suppresses and represses. It is a ruthless and inhumane machine that has forgotten about the true heroes of this industry – the game
developers. They propose a more fair and equal system where Manifesto Games acts as both emancipating and empowering independent actor for suppressed developers, by providing infrastructure to discuss, publish and deliver video games online.

The “truth”, if there ever is such a thing, is somewhere in-between these positions. Firstly, it assumes that video game creation, without the interference of anyone and certainly not its investor, is somehow a basic right of every game-inclined person— an assumption that could be heavily contested by many inside and outside of the industry. Manifesto Games criticises the “market” by replacing it with… a new (online) market. It would be more in line with this market-friendly rhetoric to criticise the profit distribution mechanisms of the industry that distribute the profits away from developers and remove their creative agency. By redirecting and reinvesting profits into developer-driven projects an entire class of financially strong independent game developers could arise, achieving the same objectives sought after by the “independent” Manifesto. Secondly, Manifesto assumes that the key to this emancipating redistribution is the technology of (online) game distribution, which is a challenging proposition, as analysed previously.

On the other hand, the upbeat mood of the previous quotes reveals an overly pragmatic and uncritical approach to power relationships within the industry. Few people inside the industry care to elaborate the intricate political power-relationships that exist between the various layers of this industry. Issues of publisher concentration, stagnant innovation, excessive “sequelisation”, increased development budgets, undervalued game developers being acquired by giant publishers, and others are rarely mentioned. Game developer executives present an image of harmonious coexistence with publishers – a representation that clearly is not the case.

MARKETING

The typical publishing process today stretches from before the idea creation phase, through market analysis, active participation and management of development process through milestone financing, advertising, PR, manufacturing, distribution and sales. Understanding the market is crucial and influences almost every aspect of the publishing process.

Hardcore vs. Casual

How does “understanding the market” translate into practical terms? The answer to this question in most cases of marketing theory would involve the
process of identifying the target markets and then doing a market segmentation, which in the Kotlerian marketing perspective constitute the primary core concepts (Kotler 2000). The most popular way of determining market segmentations within the industry today seems to be the following:

- “Hardcore gamer” (Core gamer/Traditional gamer)
- “Casual gamer” (Mass-market gamer/Occasional gamer)

The “hardcore gamer” is the industry’s life blood. It has no apparent definition, but it is used as an umbrella term in industry circles as the dedicated gamer being part of a lucrative sub-culture of video gaming. This type of gamer is technologically savvy, willing to pay for gaming hardware/software, plays many and long sessions, is part of gaming community (online and offline) and interested in the latest information and news from the video game industry. Occasionally this sub-culture/segmentation is also perceived in pejorative terms such as “nerdy”, obsessive, socially inept and introverted – not necessarily linked by mainstream society with positive attributes. The hardcore gamer has no objections to belonging to such a sub-culture and, on the contrary, considers himself/herself to be a member of a select group that understands the hidden beauty of the video game medium. Mainstream society’s less favourable opinions only reinforces the romantic and self-proclaimed rebellious characteristics of this sub-culture. This is quite similar to the more general “computer nerd/geek” culture, and in many cases they overlap since many computer-fanatics are almost by definition also interested in the video game culture. General video gaming culture is also more mainstream as it involves game consoles, mobile games and web games, which are played by a significantly broader audience. They, on the other hand, cannot be considered part of the hardcore gaming culture/segment.

Some definitions of hardcore gamer generally points towards Western youth/young adult (white) males. Noted video game journalist and writer Dean Takahashi provides an interpretation:

Sony had achieved broad market penetration with its Playstation by targeting the 18 to 34-year-old males whose opinions were key. They influenced those younger than them.

(Takahashi 2002b)

In other words, 18 to 34-year-old males. Members of his target group are affluent since they predominantly hold a job, and decide over their own purchases. Historically, children were the primary target audience, and had to be targeted via parents who actually bought the video games. Still today,
many gamer age statistical surveys are most likely skewed upwards since they measure the buyer’s age, and not necessarily the actual player’s age. Market research firm NPD Group elaborates:

> The common demographic […] is often referred to as the 18–30-year-old male. Although 18–34-year-old players take up 42% of the player base, 27% of buyers are aged 18–30, and 23% are 0–12. These numbers suggest […] the notion of “gamer moms” and “gamer dads” playing games with their children.

(Dillon 2006)

Consequently, it can be safely assumed that the so-called hardcore gamer is an 18 to 34-year-old (most likely white) male living in the west. Japan constitutes the third biggest market in the world but their demographics, genre and entire gaming culture differs significantly from the west, practically constituting a separate market with Japan-only video games with no export intentions. The hardcore gamer segment also applies in Japan, but its dynamics diverge substantially from the North American and European markets, which have much in common and hence dominate the marketing strategies of the industry.

Casual Gaming

The casual gamer is defined by the opposite, primarily by the academic/game developer movement that attempt to propagate this notion. If concretised, the target group for casual games can be defined as: women, older gamers and also non-hardcore gaming men. After all, this represents a “target group” (or more accurately several target groups) several times bigger than the hardcore gaming segment, and has been traditionally ignored by the video game industry. Simply put, casual games constitute an attempt to target anyone except hardcore gamers – basically anyone who has not been attracted to video games previously.

Casual gaming attempts to become a casual mainstream commercial form of gaming that “elevate video games to become a first-tier form of entertainment, like TV” (Boyes 2008). It is indeed touted as panacea for the many ailments of the industry:

> When you are in the business of casual games, you are reaching virtually all demographic sectors. Women in their fories comprise the typical casual game player – but so do men, teens, kids, college stu-
dents, seniors and international audiences. Even hard core game players take a break every now and then to play free online poker games and online pool.

The casual games “genre” is predominantly available as web browser/Flash games, but increasingly through mobile phones or online/downloading services from the three major console manufacturers. It is evident that the notion of casual gaming is rather a tentative and fuzzy solution to a given industry problem rather than an actual genre or even category of video games. It is an attempt to group together an array of emerging video game genres from different platforms, and then formatting this in a wider context of industrial dynamics.

*The Nintendo Generation*

The notions of casual and hardcore gamer have to be contextualised against the background of the historical developments of the primary target group, the so-called *Nintendo generation*. It has to be stressed that Nintendo did not invent or pioneer the video game medium or its technology. Nintendo’s contribution was to professionalise and streamline game industry business models and marketing strategies. Nintendo has pioneered a “holistic” business perspective: it was the first console manufacturer to comprehensively understand the dynamics of creating a successful platform open for third party games. It was first to employ sophisticated marketing strategies with a global perspective. Nintendo was also one of the first to prioritise copy protection technologically and as part of business strategies. During the 1980s, by targeting primarily the market segment of young boys aged 8 to 14 (Kline *et al.* 2003), Nintendo managed to find a highly effective marketing strategy that brought its seminal Famicom/nes console from Japan onto the global stage. Combined with strong in-house game productions such as the legendary and iconic game franchise based around the Italian-like cartoon plumber Mario, or the fantasy-inspired *Zelda* series, Nintendo became what some quite exaggeratedly call a “cultural phenomenon” producing a “Nintendo generation” (Scheff 1999) by obtaining quasi-monopoly status in all of the three major markets of Japan, North America and Europe.

This position lasted for almost five years until another Japanese manufacturer Sega “out-cooled” Nintendo by targeting a slightly older age group: 15 to 17-year-old boys (Kline *et al.* 2003). It successfully departed from the dominating children target group, but it was one console generation later that Sony overtook Nintendo’s leadership. In 1994 Sony’s Playstation went
for an even older segment, 18 to 34-year-old men, in other words “invented” the “hardcore gamer” segment that dominates game industry marketing strategies to this day. This “invention” led to Sony’s domination of the industry, extending to the next generation Playstation 2. It was challenged by Microsoft’s Xbox that targeted the same hardcore market. Nintendo has remained more cautious by still dominating the children/teenage market, while attempting to please some of the older demographics with more mature content adapted to that segment.

The rise of the casual gaming proposition has now led to a crossroads situation where the hardcore gamer era has been exhausted and the industry is frenetically looking for new marketing concepts that can effectively challenge the dull marketing segments of “non-gamers”, women, older people and potentially emerging markets, but also provide differentiation and detachment from the “sub-culturisation” of the video game phenomenon. The industry has successfully been “chasing the Nintendo generation” (Sega, Sony), but after two decades the strategy is no longer viable and new perspectives have to be developed – a multitude of new generations have to be defined in order to continue the expansion of the industry and truly become a mainstream cultural phenomenon.

The dynamics of marketing and advertising strategies employed by console manufacturers and publishers are a subject for a separate study (in other words beyond the scope of this study). Suffice it to say, it has been lauded as being notoriously radical, hyped, energetic and revolutionising “in your face” marketing, personifying “the ideal commodity in post-Fordist/Postmodern/Promotional capitalism” where Mario acts as global media coloniser in the “perpetual revolution” of marketing and advertising (Kline et al. 2003). The game industry has been an arena for edgy and innovative marketing and communication strategies for decades. Particularly noteworthy was Sony’s “reinvention” of the industry with its Playstation. Nonetheless, the game industry marketing hype is in many cases a deliberate “hype of marketing”, rather than “marketing hype”. It is a somewhat exaggerated claim that video game marketing somehow represents a new era in marketing/communication. It should, however, be noted that the industry indeed faces unique marketing challenges owing to the characteristics of the video game medium and its business models.

Towards Alternative Audience Classifications

Ip and Adams (2002) present an alternative framework for classifying target audiences in the (commercial) video game market. Their quantitative model is a response to what they perceive as a tendency to do “little formal
market research. Publishers tend to rely on focus groups, warranty-card returns, and Internet gossip to understand the state of the market. They strongly oppose the dichotomisation of gamers into either hardcore or casual gamer. Based on previous research a total of fifteen behavioural and contextual factors are employed to determine the type of gamer. These factors, focusing on knowledge, behaviour, meta-genre preferences, gaming experience and others, are measured quantitatively and weighted numerically since some factors are deemed to be of greater importance than others. These weights are chosen arbitrarily by the authors, but can also be adjusted to the preferences of (future) applied marketing surveys. Surveys based on a conventional Linkert scale determine the so-called gamer-dedication score (GD), which calculates a weighted index (in percent) of the fifteen factors. Five major categories according to percentages of GD are identified: ultra casual/non-gamer (<30%), casual (30–45%), transitional/moderate (46–55%), hardcore (56–70%) and ultra hardcore — “obsessive” (>70%). The authors have not performed any extensive surveys and lack empirical data to support their claims. Putting the traditional objections to quantitative research methodology aside (such as the hypothetically chosen dimensions, and their weights, etc.), the framework clarifies one fundamental point: there is a massive need for a more nuanced terminology when describing the behaviour of various target groups of the commercial gamer community.

Further research along this quantitative line are continuing (Charles et al. 2005; Fritsch, Voigt, & Schiller 2006; Jacobs & Ip 2005). Others within the industry are defining segments of their own. Developer Big Fish Games identifies fourteen segments such as “Slow strategists”, “Frenetics”, “Nancy Drews”, “Heavy action” and others (Remo & Steele 2008). Research firm Parks Associates provides “Power gamers”, “Social gamers”, “Leisure gamers”, “Dormant gamers”, “Incidental gamers” and “Occasional gamers” (Jenkins 2006b). Criticising the hardcore gamer paradigm has become all the rage in an industry seriously influenced by the casual gaming movement. All the major game console manufacturers and independent publishers are professing a departure from the hardcore gamer marketing practice (Fahey 2007; Wallis 2006). The fact is that the game industry is only beginning to understand the failure of its historical marketing concept, and are desperately seeking new ways to describe a future of potentially an entire spectrum of fragmented and less sub-culture oriented target audiences.

REVENUE STREAMS/SHARING

The issue of dividing the revenue stream constitutes the most pivotal aspect of the video game industry and explains much of the industrial structure
and its dynamics. It is the result of various struggles between the different sectors in the video game industry. As has been analysed earlier, a range of strategic “weapons” are used to reinforce positions in the value chain. For instance, IPR ownership issues (dominated by publishers), financing issues (pioneering vs. independent production configurations), absorption of distributors by publishers, dedicated POS shelves at retailers, extensive brand building by major publishers, used/pre-owned sales or rentals by retailers, in-house studio conversions of developer acquisitions by publishers – all these trends and tendencies are different strategies employed by various entity sectors to increase their revenue share.

Of particular importance for this study is the revenue sharing mechanism between developer and publisher. This relationship is dominated by the so-called royalty advance model which constitutes the standard funding and revenue sharing model for the game industry (Hickman 2001). In order to better understand this model it is rewarding to analyse the general cost structure of an average current generation AAA console video game, in this case the Xbox 360 hit game Gears of War (see table below, Rosmarin 2006). Different cost positions are of a confidential nature and are based on well-informed industry source, whose accuracy is hard to estimate. A second objection: the percentage of fixed cost diminishes as the sales revenues increase. The figures below are based on expected sales, which by definition must equal or exceed break-even sales volumes. Thirdly, the sums below are higher than 100% of retail price of $60, since certain items are optional.

<table>
<thead>
<tr>
<th>Cost Breakdown of Console Video Game</th>
<th>%</th>
<th>(USD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Art/Design</td>
<td>25%</td>
<td>$15</td>
</tr>
<tr>
<td>Programming and engineering</td>
<td>20%</td>
<td>$12</td>
</tr>
<tr>
<td>Retail</td>
<td>20%</td>
<td>$12</td>
</tr>
<tr>
<td>Console Owner Fee</td>
<td>11.5%</td>
<td>$7</td>
</tr>
<tr>
<td>Marketing</td>
<td>7%</td>
<td>$4</td>
</tr>
<tr>
<td>Market Development Fund</td>
<td>5%</td>
<td>$3</td>
</tr>
<tr>
<td>Manufacturing Costs, Packaging</td>
<td>5%</td>
<td>$3</td>
</tr>
<tr>
<td>Licensing</td>
<td>5%</td>
<td>$3</td>
</tr>
<tr>
<td>Publisher profit</td>
<td>1.5%</td>
<td>$1</td>
</tr>
<tr>
<td>Distributor</td>
<td>1.5%</td>
<td>$1</td>
</tr>
<tr>
<td>Corporate Costs</td>
<td>0.3%</td>
<td>~$0.20</td>
</tr>
<tr>
<td>Hardware development costs</td>
<td>0.05%</td>
<td>&lt;$0.03</td>
</tr>
</tbody>
</table>
The first two items constitute the development budget, which represent about 45% of the cost of an average game copy. Hardware development costs represent the costs game console manufacturers charge game developers for acquiring **SDKs** (Software Development Kits) – software/hardware tools required to write console software. For instance, the Playstation 3 Reference Tool kit costs €7500 and several are needed. This price level generates barriers to entry, which select dedicated and serious game developers. Licensing stands for IP licensing costs for games containing external IPs. This is covered by either the developer or the publisher, depending on production configuration.

Publisher profit and corporate costs are various corporate market analysing expenses covered by the publisher. They also cover the console owner fee, which is collected by the console manufacturer in order to cover the subsidy of each game console, which is sold at a loss/break-even and then recouped with license fees. It is also a way for game console manufacturers to have a stake in each console game released by third party publishers. The total marketing expenses are here defined as being 12% (7%+5%), which is confirmed by a game developer executive:

**Q:** How big are the marketing expenses in comparison with development costs?

**A:** It all depends. Usually you budget 10–15% of the total revenues for the product. If a game sells 500 million at retail, then marketing accounts for 10–15% of that. Not from a cost perspective but from a revenue perspective.

CEO of (former) major Swedish game developer (2002-09-20)

The major cost position is evidently the game development process with 45%. Manufacturing, console license fees and to some extent marketing are costs that are hard to rationalise and limit in any drastic fashion. Advertising budgets, which are assumed to be included partially in the marketing and market development fund positions, can be influenced but not fully avoided. Despite all claims of being evil profiteers, publishers consequently only have a limited (guaranteed) profit margin, at 1.5%.

**Royalty Advance Method**

In conjunction with the milestone financing model (see Milestone financing for an explanation), the so-called **royalty advance method** is predominantly used to divide revenue/royalty revenues. It works according to the following general schema:
Publisher and developer sign a contract with design document and other legal documents stipulating project schedule, completion dates, technical requirements and royalty percentages.

Game development proceeds with various forms of financing, predominantly milestone financing sourced from the publisher.

Game is manufactured, distributed and sold at wholesale to retail.

Wholesale revenues are divided according to stipulated percentages.

Developer uses its royalty percentage income ("royalty advances") to repay the entire development budget to the investor (i.e. publisher), who also takes the rest of the revenues.

When sales have repaid the development budget ("recoup"), the developer starts collecting sales royalties directly, while publisher takes its share (the rest). This continues until the end of the game’s life span.

Every party is expected to finance its share of development cost, but predominantly developers (even well-known ones) are not capable of self-financing, or even co-financing their cost share (i.e. the development budget). Consequently, developers “borrow financing” from the investor, i.e. publisher, by using its only valuable security – future royalty revenues – as collateral hence the name “royalty advance”. It should be noted that this is purely a revenue sharing model – developer and publisher do not share equity in a financial vehicle for future value production – they only share future revenues, despite the fact that every party covers its own costs.

In many cases the royalty advance deals are even more complicated with trigger points for different percentage rates, and cross-collateralisation. Game developer receives different royalty percentage rates depending on volume of game sales. Cross-collateralisation means that “royalties for one project that has earned back its advance may be used to recoup advances on another project that has not yet earned back its advance” (Behr & Wallace 2008). Consequently, the royalty deals struck between game developers and publishers are usually more complicated than merely a number stipulating the percentage.

Royalty percentages are negotiated when contracts are signed. For the game developer this is the most decisive business model aspect, together with the actual rate it charges for development. Factors that influence the royalty percentage are:
1. **Financing** *(source)*

2. **Publisher expenses**

3. **Game/IP sales potential**

4. **IPR**

5. **Game developer experience**

The source of financing heavily influences royalty percentages. The main principle is that financing risk is reflected in the percentage. The more financing the better percentage developer/publisher can expect since it also reflects the amount of risk assumed. However, publishers are increasingly reluctant to publish fully developer self-financed games, as the publisher loses its influence during the development process. Many major publishers have stopped publishing titles that they have not participated in during the development process, as witnessed by the following quote:

> I know that there are many game developers in this world, and many don't have financing from publisher. They finish a product and then they go out and try to sell it. There are many finished products that never get published.

*CEO of* (former) major Swedish game developer *(2002-09-20)*

If a publisher expects more expenses it can require an increase in its royalty percentage. This regards all types of “expenses” such as marketing/advertising, distribution, localisation and the size of the actual game development budget.

Game/IP sales potential evidently affects the percentage. If a sequel to a hit selling game is being designed, then the IP owner is in a better negotiating position. The overall risk of the development project is lower and the publisher is more confident that its investment will be returned. This ties into the IPR (Intellectual Property Rights) discussion and indicates why the entire industry, and in particular publishers, have transitioned their business focus towards IPs. Ownership is almost unequivocally transferred to publishers, regardless whether the developer or someone else creates it.

Game developer experience is also related to the game sales potential and IPR aspect: if a game developer has a proven track record of producing successful games, within budget and on schedule, it enjoys a higher royalty percentage since developer quality is expensive in this business.

What is the result of all these factors? The royalty percentages are one of the best-kept secrets of this highly secretive industry – publishers and particularly developers have no interest in revealing their level since this
would unveil too much of their business models. If asked directly, game developer executives generally point towards confidentially agreements and provide broad ranges for developer royalty percentage rates:

- 5-10%, Vice-President and CFO of major Swedish game developer (2006-02-10)
- 10-20%, CEO of major Swedish game developer (2006-03-03)
- 15-30%, CEO of major Swedish game developer (2002-08-05)

How many projects lead to “recoulement” of the development budget? According to one respondent, extremely rarely:

Q: This might be a sensitive question: how many of your games have recouped and generated sales royalties?
A: It’s only [name of most successful franchise]. And it didn’t produce that much. We barely crossed the point and earned some money. It’s good leverage when you reach that point, and we did that with [name of most successful franchise].

CEO of major Swedish game developer (2006-03-03)

Case: Royalty Advance Calculations

To illustrate the fundamental effect of royalty percentages three hypothetical cases will be analysed in the tables below:

1. Publisher finances the entire development budget and thus negotiates a 10% royalty fee with the developer.
2. This case is identical to the first case except that an experienced developer manages to increase its percentage to 20%.
3. This is a rare case of pioneering production configuration where the developer self-finances the entire development budget and consequently receives 30% (no royalty advances needed).

All cases are hypothetical and are not based on any real-life examples but represent realistic examples of typical game development scenarios. Since a modern AAA video game title that currently (2009) range anywhere from £3 million to £10 million (Games Investor Consulting 2008), €4-7 (€8-12) million for AAA title on the previous generation of video game consoles (Cadin & Guérin 2006), to $25 million (Pham 2007) for a current generation title, $50 million for an online video game (Elliot 2008) or even the rumoured video games industry record of $100 million (Androvich 2008a),
it is hard to estimate the size of an “average game development budget”. It all depends on genre, platform and ambition. The development budget in all of these cases is therefore assumed to average €5 million.

<table>
<thead>
<tr>
<th>Wholesale price</th>
<th>CASE 1</th>
<th>CASE 2</th>
<th>CASE 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Publisher's royalty percentage</td>
<td>90%</td>
<td>80%</td>
<td>70%</td>
</tr>
<tr>
<td>€36</td>
<td>632</td>
<td>€28</td>
<td></td>
</tr>
<tr>
<td>Developer's royalty percentage</td>
<td>10%</td>
<td>20%</td>
<td>30%</td>
</tr>
<tr>
<td>€4</td>
<td>8</td>
<td>€12</td>
<td></td>
</tr>
<tr>
<td>Development budget</td>
<td>€5m</td>
<td>€5m</td>
<td>€5m</td>
</tr>
<tr>
<td>Developer sales royalty point</td>
<td>1,250,000</td>
<td>625,000</td>
<td>1</td>
</tr>
</tbody>
</table>

In the table below the total revenues are presented together with the return, i.e. the total revenues minus total expenses so far. The return does not represent the profit since other expenses are subtracted from these returns.

<table>
<thead>
<tr>
<th>Revenues and Returns for Development Budget</th>
<th>€m</th>
<th>CASE 1</th>
<th>CASE 2</th>
<th>CASE 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>50,000 (flop)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Publisher</td>
<td>2</td>
<td>-3</td>
<td>-3</td>
<td>1.4</td>
</tr>
<tr>
<td>Developer</td>
<td>5</td>
<td>0</td>
<td>0</td>
<td>0.6</td>
</tr>
<tr>
<td>150,000 (medium)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Publisher</td>
<td>6</td>
<td>1</td>
<td>6</td>
<td>4.2</td>
</tr>
<tr>
<td>Developer</td>
<td>5</td>
<td>0</td>
<td>0</td>
<td>1.8</td>
</tr>
<tr>
<td>350,000 (high)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Publisher</td>
<td>14</td>
<td>9</td>
<td>14</td>
<td>9.8</td>
</tr>
<tr>
<td>Developer</td>
<td>5</td>
<td>0</td>
<td>0</td>
<td>4.2</td>
</tr>
<tr>
<td>1,000,000 (hit)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Publisher</td>
<td>40</td>
<td>35</td>
<td>37</td>
<td>28</td>
</tr>
<tr>
<td>Developer</td>
<td>5</td>
<td>0</td>
<td>8</td>
<td>12</td>
</tr>
</tbody>
</table>

These three cases illustrate that the royalty advance model results in a system where the publisher receives most of the revenues. This explains most of the dynamics, structure and power relationships between various entities in the video game industry, and in particular the debated relationship between publisher and developer.
In Case 1 it is evident that the contract practically never results in any sales royalties for the developer. The level of sales required for developers to start earning sales royalties is 1.25 million copies – around a dozen video games reach that level on a yearly basis. What the developer can expect is the actual development budget (€3m). This budget is transferred from the investor (i.e. publisher) to the game developer using predominantly the milestone method, described in previous chapters.

As the developer is fully aware of the slim chances of earning any sales royalties, it has to incorporate potential profit margins into its offering, i.e. the development cost/budget. This entails only one viable business strategy for developers: generate profit during the development process and not the sales process. The message is clear: game developers as independent entities have been delegated to providers of development services, and are no longer considered equity partners during the processes of commercialisation and marketing. The entire commercialisation process is becoming more complex and expensive, which forces the publishers to minimise any additional cost sources such as profit-sharing with the game developers.

Unfortunately, from a game developer financial point of view, the typical production configuration, be it independent or work-for-hire, is located in the income range from Cases 1 and 2, which in a best-case hit sales scenario (1 million), gives a return of approximately €3m. In proportion to the corresponding retail revenues (€60m), the game developer can only assume 5% of the total return (Case 2 with sales royalties at 625 000 copies). Furthermore, Case 3 illustrates that pioneering game production configurations (without royalty advance) are not financially favourable to the game developer, except in successful hit cases, but at the cost of significantly higher financial risk. Unlike the game publisher that during the “royalty advance” sales period assumes all wholesale revenues until the developer has recouped the development budget, the developer of a pioneering production configuration cannot assume the entire revenue stream since the publisher assumes other expenses such as marketing, distribution etc. As indicated earlier, the development cost (“Art/Design” and “Programming and engineering”) represents 45% of the total costs associated with producing a video game. Together with licensing and other fees, these costs not only constitute the biggest cost item (exceeding 50% of the total costs) but they are also upfront costs, which further increases the financial risk. Consequently, self-financing by game developers is a strategy that contains intrinsic disadvantages such as radically increased risk and unfavourable revenue-collecting mechanisms.

From the publisher point of view, the situation is not as bright as the three cases might indicate. The return does not represent pure profit, but
must be reduced with several other major costs, predominantly marketing, distribution, licensing and console manufacturing fees, which fundamentally alter the calculations for the publisher.

In Cases 1 and 2 (with royalty advance), the publisher collects 100% of wholesale revenues until development is recouped with developer royalty revenues. With these revenues the development budget (of €5m) is recouped already after 125,000 sold copies (€5m/€40=125,000). However, there are additional (linear) costs associated with bringing the game to market. For example, distribution costs are variable and almost directly proportional to the number of games manufactured/reproduced. Similarly, the cost of manufacturing and marketing can be considered variable costs (which explains why marketing costs are expressed as revenue percentages and not in relation to the development budget). If released on a game console a licensing fee is required, about 11.5% of the retail price, which also functions as a direct cost. In total, these variable costs represent about 30–40% of the retail price, about €18–24. The development budget constitutes an ex ante cost. When the commercialisation phase begins (after the development process) costs to a large extent become variable making the actual development budget/cost a fixed cost. The previous cost breakdown table is subsequently slightly misleading since it combines both variable and fixed costs and presents them in terms of percentages of retail price. The cost of developing the game does not increase with rise of sales – it remains fixed and thus with time represent a smaller and smaller percentage of revenues at retail.

If these release/commercialisation-related costs are deduced from the publisher’s returns then results and profit margins are not as impressive as they might initially be perceived.

<table>
<thead>
<tr>
<th>Revenues and Returns for Development Budget (€m)</th>
<th>CASE 1</th>
<th>CASE 2</th>
<th>CASE 3</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>50,000 (flop)</strong> Publisher</td>
<td>0.8</td>
<td>-4.2</td>
<td>0.2</td>
</tr>
<tr>
<td>Publisher Profit Margin Ratio</td>
<td>-140%</td>
<td>-140%</td>
<td>7%</td>
</tr>
<tr>
<td><strong>150,000 (medium)</strong> Publisher</td>
<td>2.4</td>
<td>-2.6</td>
<td>0.6</td>
</tr>
<tr>
<td>Publisher Profit Margin Ratio</td>
<td>-30%</td>
<td>-30%</td>
<td>7%</td>
</tr>
<tr>
<td><strong>350,000 (high)</strong> Publisher</td>
<td>5.6</td>
<td>0.6</td>
<td></td>
</tr>
<tr>
<td>Publisher Profit Margin Ratio</td>
<td>3%</td>
<td>3%</td>
<td>7%</td>
</tr>
<tr>
<td><strong>1,000,000 (hit)</strong> Publisher</td>
<td>16</td>
<td>13</td>
<td>8</td>
</tr>
<tr>
<td>Publisher Profit Margin Ratio</td>
<td>18%</td>
<td>13%</td>
<td>7%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Revenues</th>
<th>Return</th>
<th>Revenues</th>
<th>Return</th>
<th>Revenues</th>
<th>Return</th>
</tr>
</thead>
</table>

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These figures are based on additional expenses to cover console owner fee, advertising/marketing/pr, licensing fees (optional), manufacturing, distribution and retailing related costs (pos items etc), which represent costs of 40% of retail revenues i.e. about €24/sold copy for a €60 retail price.

Consequences of the Royalty Advance Model

What type of conclusions can be drawn based on these new figures? It might be a trivial point, but publishers fundamentally need to sell as many video games as possible. They have limited interest after finished production to divest the project – one of many paradoxical characteristics of the video game industry, and culture industries in general, is that “time flies” – the only way to recoup sunk costs is to invest more in the project by proceeding with the marketing/distribution phase, which involves even more costs and risks. Optional strategies such as selling the game engine/other components/technologies, or selling the project to another publisher is practically not financially viable.

As is quite clear from the table, the profit margins of the publisher rise with the sales numbers, which is quite straightforward: if/when the upfront development budget is recouped the costs decrease and profits increase at a higher rate. With a wholesale price of about €40, variable costs reaching €24, the publishers have to use the remaining €16 to recoup the investment, which with a development budget of €5m entails a breakeven point of 312,500 copies in Cases 1 and 2 (Case 3 is not financed by the publisher).

As the three different cases illustrate, the preferable production configurations for publishers are publisher-financed, due to financial leverage – the investor/publisher invests ex ante in development and assumes financial risk, but also a majority of the “equity” in this project. In a hit scenario (1 million) a publisher captures between 13%-18% of retail revenues in pure profit. After deducting development budget (€5m) and variable costs (in total €24m), a €8–€11m profit is generated based on an initial €5m upfront investment. Indeed, the game industry can be a very profitable venture for game publishers. The disadvantage of this leverage is also quite visible in Cases 1 and 2: a flop (50,000 copies) generates €2m in total revenues, €1.2m are variable costs and €0.8m can pay off development (€5m), resulting in a loss of €4.2m. The developer earns no sales royalties, but on the other hand is not financially responsible for any losses and has already received the development budget, with milestone financing – most likely generating a (small) profit in the process. Consequently, the position of the game publishers is not always as advantageous as might seem.
Case 3, i.e. pioneering production configurations, are substantially less profitable for game publisher. The profit margin remains static due to lack of financing leverage. The risk assumed by the publisher is connected to expenses related to the marketing/distribution phase, which this study have assumed are variable costs strongly correlated with sales numbers. This explains the reluctance to publish developer-financed project.

In-house productions are financially favourable for the publishers. Value chain integration limits and decreases transaction costs, such as administrative and legal fees etc, between different parties. Separate entities attempt to maximise their profit, adding to increased costs. Consequently, it is difficult to adequately estimate the size of these transaction costs since they depend on factors such as cost of administrative staff, game developer size, stockholder demands etc. Nevertheless, the elimination of transaction costs motivates most publisher-acquisition of developers from a strictly industrial economic point of view. In-house studios at publishers pool resources, which (in theory) produces economies of scale. The same resources can be used more efficiently and produce more than it would otherwise do in smaller format. High profile AAA in-house productions are increasingly becoming collaborative projects distributed among various in-house studios. The extent of these economies of scale is unknown due to numerous factors such as publisher profile/portfolio, in-house competence, number of in-house studios, technologies, game genre, game content, platforms, development budget sizes etc. The downside of course is higher risk due to increased payroll costs when the workforce is not fully employed.

The (occasionally impressive) profit margins of hit sales need to be put in relation to the entire product portfolio of the publisher. A well-known fact is that a diminutive minority of video game releases generate profits. The video game industry, as all other cultural media/industries, has extremely irregular demand curves – it is the quintessential hit-driven industry, which is confirmed by a game developer CEO:

Q: What percentage of games that reach the marketplace are successful, i.e. profitable?

A: The percentage increases since the productions are getting fewer.

5% generate very good profit. 1% generates ridiculously good profits. 10% are so-so. 75% never become anything.

cEO of major Swedish game developer (2002-08-05)

The quoted percentages might not add up fully and reflect a subjective rather than statistically founded opinion as regards the market profitability distribution. The quote reaffirms the perception of an extremely fickle and hit-driven marketplace. Publishers respond by distributing the risk with
as many video games – putting the eggs in as many baskets as possible – which is an extremely costly and cumbersome proposition. This partly explains the trend towards consolidation of publishers into larger entities with broader and extensive portfolios – a classical case of economies of scale. From a probability calculus point of view a larger portfolio increases the probability of creating profitable titles, thus converging the portfolio risk level towards the market risk-level. However, a successful publisher portfolio of games is not merely a “numbers game” but also involves the highly imaginative task of estimating the commercial potential of a given game in the context of its genre, history (if it is a sequel) and gameplay aesthetics. Managing and maintaining a successful portfolio of video games is the primary strategic objective of a publisher – but also its greatest challenge. For instance, every hit profit (from Case 1 or 2) is absorbed by the losses of only two to three flop games. Hence the individual mega hit profits must be put in proportion to the remaining portfolio to comprehensively understand the challenging business model of a publisher.

The substantial profits made by publishers have made them the central authority in the game industry, but not necessarily evil “mafia bankers” profiting and exploiting poor developers, as they are occasionally presented. This chapter has shown that the position of the publisher is not as advantageous as many believe. The fundamental question of whether the industry could have a more “democratic” structure is predominantly a question of interpreting the dynamics of the royalty advance financing method (and any other proposed alternative method) and proposing a more efficient (and mutually profitable) way of managing the intrinsically erratic market demand and the subsequent high risk it entails. Publishers do perform a vital role of financing/covering development risk, marketing and distributing games – they have together with game developers created a multibillion-dollar industry.

Fundamentally, publishers manage and balance the market risk. The alternative is provided by the following quote from the film *Layer Cake* (Vaughn 2004):

> Always remember, the art of good business is being a good middle-man.

Experienced gangster boss Eddie Temple (Michael Gambon) tells Daniel Craig’s younger character to stop taking excessive risk by “playing the market”. This is exactly what publishers are required to do. To avoid this risk, Eddie Temple says, it is better to be “a good middleman” who brings people together and charges for services. The middleman “owns the market” and can charge for transactions, thus not taking any positions – the market
always makes a profit (assuming it is not dead). Consequently, the best, \textit{i.e.} least risky, way of doing business in the video game industry is to own the market. This is exactly the strategy video game console manufacturers employ: they own the market by creating it. To fully understand the dynamics of the industry it is crucial to understand how this most powerful entity of the game industry works. This will be explained in the next chapter.
CONSOLIDATING FUN
– ECONOMIES OF GAME CONSOLES

To understand the game console industry is to understand the entire game industry, but in a mini-format since console manufacturers are highly vertically integrated entities as prominent publishers with large in-house developer capacity, and extensive distribution networks. Console manufacturers represent a “vertical slice” of the industry. Video game consoles provide techno-economic platforms through which certain instabilities can be eliminated and network effects more manageable. The game console represents probably the most successful business model approach to tackle the intrinsic market uncertainties of the market for games, but a certain price: it is an extremely capital-intensive strategy. It does so by sharing the risk with a dynamic network of external stakeholders, and partially by unloading the risk on others. The primary focus of this chapter is on the general effects of video game consoles on the dynamics and business models of the video game industry. Technological aspects of video game consoles are extremely complex and are beyond the scope of this chapter.

Business Model

The fundamental concept of the video game console is straightforward: a device that people can use in their living rooms to play video games. A game console connects to the TV since this lowers the price (no extra display device is needed). Compared to PCs it is extremely easy to use: no software, driver or hardware installations. Low pricing of the device attracts many consumers. Various video games made by both the game console manufacturer and third-party game developers create a wide selection of interesting video games. Console manufacturers collect generous margins on the actual video games sales. This constitutes the so-called “razor and blades” business model, where software subsidises the price of the hardware giving rise to a symbiotic tandem market of consoles at the core with video games and peripherals surrounding it.
The “razor and blades” metaphor for the business model is used due to the similarities with the razor blade industry. The business model was allegedly invented by the razor and razor blade manufacturer Gillette. Razors, such as Gillette Fusion, are sold at loss in order to be subsidised by revenues from high margin razor blade sales. The razor represents the game console and the razor blades video games. The metaphorical sharpness of the blades corresponds to the short but intensive popularity of games. Furthermore, the metaphor also shows that the razor market (console market) is not profitable without revenues from the razor blade market (game market).

*Video Game Vs. Computer Game Content*

From a content strategic perspective consoles are compact and affordable home version of arcades – providing fast and intensive entertainment. Consequently, console players’ usage pattern differs substantially from PC players. Console games generally are considered to provide short and intensive entertainment with action, sport and adventure games as most dominant game genres. Puzzle, RPG (Role-playing games) and RTS (Real-time strategy games) games have traditionally been absent from the console market.

The video game console can be seen as a logical extension of the primordial video game business model: the coin-op arcade games. These devices are put in public spaces where people have to pay for each game session. Size and price prevented direct end-consumer commercialisation, which necessitated alternative strategies. By putting these devices into public spaces video game companies discovered several characteristics: games *i.e.* software not hardware primarily attracts the consumers, price of hardware cannot be charged directly but must be subsidised, context matters (popular public spaces such as shopping malls, game arcades and bars/restaurants are preferable), content has to be adapted to its (public) context, consumer usability is crucial. This translated into various strategies: game devices are rented to public space owners through various setups (monthly fees, revenue sharing etc.) which subsidises/mortgages the cost of the hardware, software is the primary revenue driver, successful games must instantly appeal to casual mainstream pedestrian consumers – providing an entertaining experience that is casual, easy to use, challenging yet rewarding, fast-paced, visually impressive – motivating consumption of time and above all money.

The video game console (“mini-arcade” game devices) becomes a logical extension of these proven strategies. Except for the hardware subsidising
arrangement (without a middleman) the strategies are similar: software drives revenues, hardware is subsidised, usability of hardware and software is substantially more straightforward compared to substitute products (PCs), and all content genres were directly imported from the arcade game machines. The commercial strategies created during the arcade era were slightly modified and adapted to the home consumer market.

Console game content has slowly evolved. “Video games” are sometimes understood as video games for *video game consoles*, while “computer games” are played with PCs. Furthermore, video games are frequently considered more mainstream, casual, commercial, less complex and appealing to a less sophisticated (from a computer game perspective of course) audience, following the “hardcore gamer”-based dichotomies, becoming a criterion for meta-genres and subculture identification. Entire libraries could be filled with never-ending Internet discussion forum “flame wars” (heated polemics) regarding which platform, (specific) console or PC, “is the best”. It can be concluded that console games with their industrial heritage from arcade games are more adjusted for the commercial mainstream audience, while the PC as a gaming platform is an unregulated platform both in terms of business/economy as well as technology. It has consequently always constituted the arena for more experimental and innovative game content. Most new genres are introduced on the PC and then gradually spread to other platforms, such as video game consoles, handheld consoles etc.

This study assumes a more agnostic approach to this polemic between vaguely defined opposites with fuzzy generalisations concerning genres and subcultures. As more and more game titles are released on several platforms simultaneously (from PC to every commercially viable game console platform) the distinction between video games and computer games becomes increasingly blurry. For instance, the *fps* genre has traditionally been absent from game consoles because it required keyboard and mouse as interface device. However, pioneering games such as *GoldenEye 007* (Rareware 1997) proved that *fps* games could be successful on game consoles (Nintendo 64), but it was the arrival of *Halo: Combat Evolved* (Bungie Studios 2001) on the Xbox console that truly ushered in the era of game console *fps* games. The genre is no longer considered to be a “computer game genre” and it sells millions of copies on game consoles, even though “hard core” gamers will still insist that the genre is at its best on the PC.

Consequently, this study assumes that hardware is not a viable criterion for defining meta-genres of video games, or subsequent subcultures for that matter. The video game *Tetris* is Tetris regardless of whether it is played on a Nintendo **nes**, PC, Mac, Game Boy, mobile phone Java game, iPhone or any other platform – the hardware only executes the com-
mands of the game software and has limited bearing on the actual gameplay mechanisms. Despite the technological parity between PCs and game consoles, some game genres such as rpgs (Role-playing games), mmogs (Massive Multiplayer Online Games), rts (Real-time strategy) and simulation games (“God games”), are not as prevalent on game consoles. All of these diverse game genres have one thing in common: keyboard and mouse interfaces. Somewhat critically these games are referred to as “click-fests” due to the massive clicking required in these types of games. Console manufacturers have also added support for keyboards to their consoles (e.g. Playstation 3, Nintendo Wii) or even released purpose-built keyboards such as the Chatpad for the Xbox 360. The problem for these genres with mainstream console audiences consists of the advanced usage patterns that require full concentration, immersion and generally consume substantially more time. Few mainstream casual consumers are currently interested in spending three- to four-hour hour sessions in front of their TVs playing mmogs. There are of course exceptions on consoles: Final Fantasy series, (rpg), EverQuest (mmog), The Sims (simulation) and the occasional console-adapted rts game such as The Lord of the Rings: The Battle for Middle Earth II (EA LA 2006) or Full Spectrum Warrior (Pandemic Studios 2004). Even Sony’s ambitious yet delayed online simulation community Playstat- on Home is an attempt to adapt a highly PC-centric concept to the PlayStation 3 console, similar to the massive online game world hit Second Life.

The steady rise of game console market share vis-à-vis the PC has decreased the commercial competitiveness of the PC platform, as more and more publishers are leaving and focusing primarily on console game productions. The VP of content business development at NVIDIA, the world’s biggest graphics card manufacturer, states the following:

I think we have to face the facts – the value of consoles is such that no-one is going to make a PC-exclusive game in the future. Why would they? Why would they ignore consoles?

(Purchese 2008a)

This clearly indicates that the era of PCs as direct competitors to video game consoles has ended. It is becoming a complimentary and more niched gaming platform that will not seize to exist, but is no longer viable economically as an exclusive platform.

Publishers distinguish between video games for game consoles or PC/ Mac due to different technologies and business model (e.g. game console license fees), but this study concludes that they cannot be analytically separated. As will be presented later in this study, from a literary or game studies point of view the distinction is also lacking in stringency. This study
prefers to define video/computer/electronic/digital games as video games as this term focuses on the visual dimension. It is the most embracive definition as all types of “digital” games are included – video/computer/electronic/digital games without visual output are theoretically possible (e.g. sound games or similar) but are not prevalent outside experimental cases.

After embracing “PC-style games” console games are paradoxically, in some regards, returning to the casual-oriented game architecture of the original era with the rise of the so-called casual games genre/type of video games. This type of “genre” has been described previously in study as a marketing strategy panacea after the collapse of the historically reliant hardcore gamer focus. The casual games “genre” is predominantly available as Web browser/Flash games, but increasingly through mobile phones or from downloading services of the three established console manufacturers: Xbox Live Arcade/Marketplace, PlayStation Network/Store and WiiConnect24/Wii Shop Channel/Virtual Console. The online service for the Xbox console is fittingly also called “Xbox Live Arcade” as a reference to the arcade style gaming that is provided through this type of service.

Casual games are available for free/advergames, pay-to-play, subscription-models or combinations of the aforementioned. The console manufacturers have pushed their own solutions via the console’s online connection, for free or for a low price. In this way the console manufacturers retain control over this nascent and alternative game “genre”, and are well-prepared to develop these efforts if and when casual gaming establishes itself as a serious alternative revenue stream in relation to the conventional game console business model. As mentioned in the previous segment, the notion of casual gaming is a hypothetical and fuzzy solution to an industry problem rather than an actual genre or even category of video games. This phenomenon and its consequences for the development of the industry and the video game medium will be analysed at a later stage in this study.

Technology

Technically speaking, game consoles provide sophisticated “cutting edge” technology packaged for a limited purpose: to play games on a TV. These devices are the size of small vcrs. They connect to the TV, which is used as a screen but also as a speaker system. The controller units, which connect to the game consoles with cables or wireless technologies (Bluetooth) are devices that the players hold with both hands and contain a relatively high number of buttons, e.g. the Sony Playstaton 2-controller has 14 buttons and 2 mini-joysticks. Games are usually stored on established and standardized storage media formats such as CD-ROM, DVD-ROM, Blu-ray
or HD-DVD. Hence many game consoles can also be used as CD, DVD and Blu-ray players.

Current console generation (i.e. the seventh generation) have introduced the standard of Internet connections (usually through built-in Wi-Fi networking) and network services that offer software updates, social networking, chatting, (casual) game/trial downloading, trailers, Web surfing, film/music downloads and many other features that are leveraged through the Internet connection. As a result, hard disks have also been introduced to store and support the online content. Higher capacity disc technologies have also been introduced.

This is only the latest (seventh) update to console technology. Every console generation introduces some type of “paradigm shifting” technologies and features. However, the basic console configuration has always been as follows: game controller(s), console, physical game storage media and optional memory cards (to store user-specific files). Controllers have developed significantly over the years and many experimental controllers are continuously introduced such as for instance the Wii Balance Board which is controlled by foot balance, the Wii Remote that contains motion-sensing capabilities allowing three-dimensional user input, or various gun-shaped controllers, among many others. Accessories and peripherals are important for the overall video game console business model as they are crucial for the user experience, and consequently bestowing higher margins than other console-related items.

Due to the fact that games consoles are predominantly subsidised (though not always from a historical perspective) the actual console hardware is a delicate balance between providing the most technologically sophisticated console, while minimising the cost of console subsidisation. Consequently, console hardware becomes a compromise between purpose-built cutting edge technology and cost-reducing measures such as industry standard technology. Game storage media provides an illustrative case. Storage media has traditionally been created with proprietary technology for two reasons: copy protection and memory capacity. Hence, own memory formats (based on ROM technology) were preferred for a long time until cheaper standard storage technologies such as CD-ROMs became available. They represented the dawn of a new “revolutionary” multimedia era (Alpert 1992) where previously unavailable storage spaces became available for mass-market diffusion. CD-ROMs were introduced during the fourth console generation by consoles such as TurboGrafx-16, Sega Mega Drive and Neo Geo as separate add-ons that had to be connected to the original console hardware. The adoption of CD-ROM technology made business sense from a console manufacturer point of view as its development costs had been covered by an industry consortium. By console generation five they
had become the standard solution for all console storage media except for Nintendo 64, which opted for a proprietary ROM-cartridge solution despite being more expensive and having 10% storage capacity of CD-ROMs. This solution fizzled and Nintendo 64 DD (short for Disk Drive) solution, an expansion system with 8 times bigger rewritable proprietary magnetic storage, was introduced. Due to its significant delay, the (unexpected) success of the competing Playstation and marketing errors, the Nintendo 64 DD became a commercial failure (Schneider 2001). In contrast, when designing the Playstation, Sony chose an alternative strategy with the cheaper “off-the-shelf” CD-ROM solution despite limited copy protection possibilities. This strategy turned out to be successful since illegal copying was not as strategic as the aim to lower the cost of subsidisation preferring to focus on market penetration and establishing an industry presence. Nintendo have never deviated from their reliance on proprietary storage formats. The successor GameCube and then later the (current) Wii continue to rely on proprietary (optical disc) formats.

The case of media storage technologies illustrates that various (cost) strategies are employed when designing console hardware. An equivalent logic is applied to other central components of the video game console hardware: CPU (Central Processing Unit – the “processor”), GPU (Graphical Processing Unit – the “graphics card”) and the overall strategic choice of CPU/GPU architecture and configurations. Every component has its own specific characteristic and position in the general hardware strategy, as well as separate industrial cooperation partners. Console hardware is the result of extremely complex technological, industrial and production alliances that span longer time frames than the market longevity of the actual game console.

**Digital Convergence**

“Digital convergence” is the business and technology merger of the IT and consumer electronics industries, possibly telecommunications industries and subsequently also “old” and “new” media. Game consoles are considered to be a vital part of this development, and an alternative approach to the traditional division between IT and consumer electronics. The basic premise is as follows: digital (consumer-oriented) convergence must be achieved through the living room where consumer/entertainment electronics have reigned for decades. The PC/Mac, and in general information technology, has historically been, and still very much is, essentially a professional tool with professionally oriented functions such as text editing, spreadsheet calculations, emailing, accounting/business software etc. The
$P$ in PC might stand for *personal*, but it primarily refers to the *professional* aspect of the personal sphere. The PC/Mac stands both physically and metaphorically in the study, while convergence want to relocate it to the living room. After more than a decade of visionary speculation the battle continues and has not yet resulted in any established systems or rulers.

Despite the existence of many global technology giants, such as *Dell*, *HP*, *Nokia*, *Apple* or *Sony*, with presence in both professional/consumer markets there are few companies that have successfully managed to straddle both spheres. The Swedish telecommunications giant *Ericsson* historically provided both industrial/professional products (telecommunication infrastructure), as well as consumer-oriented products such as telephones, mobile phones and even computers (*Ericsson step/one – a dismal failure quickly sold off to Nokia*). After almost bringing down the entire Ericsson corporation, its consumer-oriented mobile phones division was spun-off and merged with Sony’s equally fledgling mobile phone division into what became Sony Ericsson, and later rebounded as independent and consumer-niched joint-venture. Similarly, the inventor of the PC and legendary computer technology corporation *IBM* sold off their consumer-focused technology divisions to Chinese computer maker *Lenovo Group*, when the division became detached from their core-business of industrially focused computer servers and consulting-services. Nokia also detached its industrial divisions (with wireless telecommunication infrastructure), merged them with *Siemens* equivalent division to form the *Nokia Siemens Network* joint venture, and increased its focus on its successful consumer divisions.

These cases demonstrate the challenging task of targeting consumer and industrial markets. Within IT the current trend is to focus on core competency, resulting in separation of industrial and consumer competencies. One might convincingly speculate that this trend is driven by the increased complexity and cost of successful consumer marketing. The rise of *Original Design Manufacturers* (*ODMs*) in the high-tech industry (*HTC*, *Asus* and *BenQ* and others), that design/manufacture complete hardware products for consumer-oriented *OEMs* (*Original Equipment Manufacturers*) is an indication that (most?) value is created by durable relationships with consumers *i.e.* creating consumer brands. This drive towards separation of core technological competencies and market specialisation makes the path towards digital convergence increasingly complex. New competencies have to be developed that incorporate the targeting of industrial and consumer spheres simultaneously.

In this converging digital world the video game console has a formidable position: its technological heritage and community stem from the IT/computing industry, while the hardware/content/consumer is located in the desired consumer space of the living room. It constitutes a bridge be-
tween the two converging worlds. As early as 1988, during the third console generation, Nintendo launched *Famicom Modem* which allowed connection to Nintendo servers which provided online information content, stock trading and video games downloading more than a decade before similar concept became commercially viable during the fifth/sixth generation of consoles. This process continued with consoles that included CD-ROM drives which added music playing capabilities, and later generations of DVD-based consoles acted as substitutes for DVD-players. During the fifth generation of consoles (Sega Dreamcast, Sony Playstation 2, Xbox and Nintendo GameCube) manufacturers added new (network) technologies that allowed connecting the console to home electronics, external accessories (*e.g.* keyboard, hard drives, mouse) and networks/broadband. During this period increasingly pervasive attempts by the IT industry (*such as* Windows CE, Windows Media Edition, Front Row on Mac OS X, Java, set-top boxes), telecommunication industry (*interactive on-demand* TV services, IPTV, Bluetooth, 3G/UMTS (wireless broadband) and faster broadband technologies such as ADSL) and the consumer electronics industry (*PMPs* (Portable Media Players), *MP3* players, *DVR* (Digital Video Recorders) and media servers/centres) to provide “digital hubs” indicated massive support for the vision of digital convergence.

Content is also supposed to converge, as illustrated by the entry of traditional media into the video game industry, and the more frequent cooperation between various expression forms such as film, music and video games. The video games medium is to become an amalgamation of film and video games with a dynamic new form of storytelling – “interactive cinema”. These aspects of the “interpretational essence of the video game medium” will be analysed in the second part of this study.

However, these inventive attempts have not made any significant inroads and the vision of convergence is still far off. The (former) industry trend of traditional media entering the game industry, including the mediocre practice of creating “movie games” and IP-licensing, have been analysed previously as conclusively being failures. Furthermore, the previous generation of game consoles did not become “digital hubs”, with few limited exceptions such as *Eyetoy* (a small camera that plugs into PlayStation 2 allowing players to participate “on screen” in different games) and *Windows Media Center Extension* for Xbox (allowing the Xbox to access media content on a Windows PC). The winner/leader of the (previous) sixth generation of game consoles, Sony, even released an expanded PlayStation 2 model called the *PSX* that was a game console combined with a media centre, *DVD* recorder and *DVR* features. Unsurprisingly, the PSX was a commercial failure and was only released in Japan despite plans to bring it to a global market.
The current seventh generation of video game consoles has once again attempted to finally bring the lofty convergence visions to the masses. All of the three video game consoles have introduced online game and downloading services, extensive music (CD, MP3) and film (DVD or Blu-ray/HD-DVD) features supported by hard disks (though not Nintendo Wii) which allow DVR functionality and the connection to other media devices such as MP3 players, PMPs, PCs on local networks and even mobile phones. Console manufacturers such as Sony and Nintendo have also created communication interfaces to their handheld consoles (Playstation Portable, Nintendo DS). A feature called Remote Play gives the possibility to remotely play the (media) content of the Playstation 3 (PS3) console. The Nintendo DS can be connected to the Wii console and used as an input-device/controller, although Wii games that take advantage of this feature have to be purpose-built for this Wii-DS interaction setup.

**Online Console Games**

As noted previously various primitive forms of networks services were offered as far back as the 1980s. However, it was as late as the sixth generation that game consoles manufacturers seriously and broadly approached the issue of online services and/or electronic distribution. With the introduction of the **Sega Dreamcast (DC)** in 1998 during the euphoric first Internet era, game consoles manufacturers equipped consoles with Internet services that would please the Internet-craving markets, despite the fact that electronic distribution was not technologically feasible for mass-market launch. Using analogue dial-up modems players of Dreamcast could connect to a subscription-based ISP/game service **SegaNet** to play multiplayer games, which were distributed on Sega’s proprietary optical disc format GD-ROM. Electronic distribution/downloading services were not offered, but surfing the web was feasible. Sony’s competitor Playstation 2 (PS2) was more pragmatic and instead of a unified, subscription-based online service (like SegaNet), publishers and third-party developers were allowed to run servers with independent multiplayer platforms. Unlike Sega’s DC the PS2 did not have built-in modem and required a separate accessory the **Network Adapter** which was a modem combined with a hard drive. Similarly Nintendo’s sixth generation offering, the GameCube (GC), could be equipped with the GC **Modem Adaptor** or **Broadband Adaptor** that allowed multiplayer features for purpose-built games of which a handful were developed (Gladstone 2004). Hence the sixth generation of console online services served more as community/multiplayer platforms than distribution platforms.
The most ambitious, and the first praiseworthy, online service during the sixth generation was the Xbox Live, launched (2002) four years after the DC. The Xbox Live service requires a broadband connection in order to provide richer and more extensive online services, including downloading of video games and film/music. Microsoft also understood early on the relevance of social community features, which later became the motto behind the so-called “Web 2.0” or “social web” trend, which saw the inclusion of personal profiles with nicknames, friends lists, chat functions, forums and voice chats (through microphones). More functions included an electronic distribution system Xbox Live Arcade bought via the Xbox Live Marketplace using a special currency called Microsoft Points that has a fixed exchange to physical currencies.

During the seventh generation broadband Internet connections have become more diffused in the primary markets for video game consoles. After substantial upgrades, expansions and adaptation, the Xbox Live on the Xbox 360 console service now claims to have more than 7.1 million active subscribers (Androvich 2007c). Sony has responded by creating the PlayStation Network (psn) that claims to have 9.8 million users as of May, 2008. This service is quite similar in scope and features to the incumbent Xbox Live. Furthermore, both Xbox and Sony are establishing channels with other media forms. Xbox Live Marketplace is offering the downloading of popular television shows, music videos and movies from the biggest Hollywood-studios (but obviously not from Sony Pictures). Sony has launched its and other media conglomerates’ content on Playstation Store that provides similar features as the Xbox equivalent. Sony’s extremely successful “casual” karaoke-style video game Singstar (sce London Studios 2007) has also launched SingStore which is an online store where new songs can be bought and downloaded to the game.

Nintendo’s Wii console have chosen a slightly different path since it has chosen not to position its console as a “digital hub” — Sony Computer Entertainment Australian’s (the “Playstation” division) Managing Director Michael Ephraim says:

[…] we have to compare apples with apples. They [Nintendo] do not have these kind of applications. We think PS3 is not a product to be compared with Wii, it is a completely different product. This is a digital hub, that is a games console.

(Hill 2007)

Wii is not equipped with a next-generation disc-format such as Blu-ray, HD-DVD or even DVDs (by default), and it has no hard drive. However, Nintendo has created a competitive online strategy with various “channels” that offer social networking/avatar, shopping (Wii Shop Channel with
Wii Points credit system similar to Microsoft Points), email, web browsing and many more features. The shopping function has two game downloading services: Virtual Console and WiiWare. The former is an ingenious move by Nintendo to capitalise on the extremely strong back-catalogue of Nintendo-produced games for previous game consoles. Once again a new marketing strategy targets the original 1980s “Nintendo generation”. It has lured former enemies, such as Sega, Neo Geo, TurboGrafx, Commodore 64, to join this “retro-gaming” service with their legendary video game classics.

It should be noted that despite the significant progress of broadband Internet technologies, the current bandwidth is still inadequate for the speeds required for electronic distribution of cutting-edge modern video games. The video game medium is always pushing the technological frontier forwards and this particularly applies to memory requirements/sizes of video games. Broadband technology has also evolved significantly and ADSL (the currently dominating broadband technology) provides modem speeds of 0.5–24 Mbit. Despite this, the current seventh console generation with 15–25 Gb Blu-ray/HD-DVD discs produces download times of ca 3–110 hours. These times can be reduced by compression and streaming, but the reduction cannot decrease the sizes ten-fold as would be required to make it a viable mainstream alternative. Mainstream gamers are simply not interested in waiting 5 days for a game to download. This vividly illustrates the challenges electronic distribution faces as it plays catch up with game storage formats. It also explains why online services are used for relatively small-sized “retro-gaming” or “casual gaming” titles that can be downloaded quickly.

Online services are increasingly becoming critical components of contemporary game consoles but they are still in a semi-embryonic state with “casual” mini-games or for distribution of extension packs and game demos. Electronic distribution is still not available as a valid distribution channel compared to traditional physical distribution.

**Console Economies**

Many products and services rely heavily on each other and exist in a symbiotic relationship. Mobile phones and cellular networks, cars and petroleum, razors and blades, DVD players and DVDs are a couple of popular examples. Not surprisingly the game industry is one of those markets, where the platform manufacturer is strongly dependent on the game producers and vice versa. Initially this was not the case – in the beginning console manufacturers focused on exclusively creating games for their own platforms,
with little attention to third party publishers/game developers. History has proven that this is not a viable business model. Creating good video games, it turns out, is a completely different business than the production of high-tech video game consoles. Console manufacturers continue creating games but have turned for help to independent third-party game developers. The economic mechanism behind this strategy is fairly plain: network effects. The more game developers create games for a console, the more valuable it becomes for consumers but also other producers, and this predominantly benefits the console manufacturer. As analysed earlier, the logic behind independent production configurations, is a fundamental question of outsourcing: what kind of cost and/or strategic benefits can be gained from employing external and independent entities as part of the value chain?

**Video Games and Consoles**

The relationship between games and consoles can be described as a spiral. Good games drive sales of more consoles, more consoles lead to a larger market, a larger market generates more game development and more game titles, which lead to more console sales. In this way the positive spirals continues, recursively driving sales of game consoles and video games.

The most central insight for game console manufacturers is the link between video games and game console market: good games drive the entire spiral upwards. By outsourcing i.e. relying on third-party game publishing, game console manufacturers apply a “portfolio theoretical” approach whereby risk is lowered by means of diversification. By “not putting all their eggs in one basket” console manufacturers theoretically decrease the financial risk of producing “better games” since the cost of producing more
games is covered by third parties. In a market place with practically total uncertain demand, third party cooperation is a strategy to “outsource Murphy’s Law” to someone else, even if that involves running the risk of missing out on the opposite, i.e. the wildly lucrative sales hit. Even a third party hit benefits the game console since the manufacturer will collect fees from third party publishers for every sold copy. Moreover, the success of this hit will attract new consumers to the platform which profits the console manufacturer.

Case: Sega

Spiralling network effects can also work against the console manufacturer and become an uncontrollable force that affects the market survival of the entire game console. A famous example of a negative spiral is Sega. This Japanese company was once a leading manufacturer of consoles, arcades and games. Having launched a console in Japan (and a handful of other markets) in the beginning of the 1980s, during the end of the decade Sega introduced globally a successful console called Mega Drive/Genesis. This console targeted a slightly older age group with more violent games, which were not available on the market leading Nintendo NES. The slogan for the console in North America was “Genesis does what Nintendon’t” (Orlando 2007). Sega’s “cooler” console effectively challenged Nintendo’s hitherto unquestionable leadership during the fourth console generation. Problems arose when Sega introduced hardware add-ons/upgrades called Mega-CD (added support for CD-roms) and 32X (powerful 32 bit cpu chips and 3D graphics processor). These upgrades failed in the market since there was not sufficient interest among game publishers for these confusing versions of the Mega Drive which divided the market into four separate segments (MD+MCD+32X, MD+32X, MD+MCD or MD) depending on combinations of two, or more, units. Problems continued with Sega’s next fifth generation console Saturn that was launched literally simultaneously as the wildly anticipated Sony Playstation – the latter totally reinvented the game industry and dominated its console generation (and beyond too). Sega had rushed the Saturn to the market and was notoriously difficult to programme and consequently harder to make “good games” (first step of the positive spiral). Saturn was a distant third after Nintendo 64. After only two dismal years in the marketplace Sega was forced to announce the Dreamcast (DC), launched only 4 years after the Saturn in 1998.

By the time Sega finally launched their last console at the end of the 1990s, publishers and developers had lost faith in the console and Sega. With low confidence among game publishers and a market impatiently
waiting for the Sony PS2, this became the beginning of the end for Sega as console manufacturer. Despite introducing many innovative features such as Internet connection and the VMU (*Visual Memory Unit*, a memory card that connected to the game controller but could be detached and work as a handheld game console) Sega lost control of the spiral dynamics, and decided 2000 to phase out the game console and close its entire console business. This was followed by a large reorganization of the company focusing on game publishing and arcade games/hardware (still an important market, particularly in Japan). Sega’s successful in-house games were quickly transferred to its former competitor’s consoles from Sony, Nintendo and Microsoft. Sega is now, after merging with Japanese pachinko manufacturer *Sammy*, one of the world’s largest game publishers.

**Competing Game Platforms**

The dependency on third-party game developers has caused video game consoles to develop, in a similar way as computer operating systems, into platforms – not only technological but also (and foremost) economic platforms. This has proven to be a very successful business strategy and has overthrown the PC as a dominant competitor gaming platform and is consistently diminishing and redefining the role of the PC as a commercial gaming platform. In Europe, 45% of all games sales are PC games, but in Japan only 6% (Spectrum Strategy Consultants 2002). To explain the economic rationale of game consoles it is important to know why the PC is decreasing in importance.

A PC can be combined into an almost infinite number of configurations of both hardware and software. Software and hardware are updated on a 6–monthly basis. In these fluctuating conditions it is difficult for game developers to adapt their game software to one specific hardware setup due to the endless number of possible configurations. Game developers usually then adapt their software to generic/standardised setups, or are forced to make several versions for different setups. In addition, for many years the PC platform lacked software tools and industry standards for creating games. Game developer had to “reinvent the wheel” in software for every new game, increasing the time and cost of game development. Nowadays there are several industry standards (such as DirectX, OpenGL, *Games for Windows*, XNA) and numerous software tools available. The rapid development in game hardware and software quickly makes PC games obsolete, and forces the industry and gamers into a cycle of continuous upgrades producing a financial risk for all parties in the PC game industry, which has caused the failure of the PC as the leading gaming platform. On the
other hand, this development pace is also appreciated by the hardcore gaming community and the segments of the industry that cater to it. As elaborated earlier, the PC is the platform for experimental and innovative video games.

Advantages of Game Consoles

The business concept of the game console is to solve all the above-mentioned disadvantages of the PC. Console manufacturers have consequently created solutions which are:

1. Technologically simple
2. Technologically consistent
3. Good usability
4. Inexpensive
5. Aesthetically designed
6. Higher barriers for game developer entry

Technologically simple. Game consoles are technologically complex as PCs and in many cases even more excel in technological sophistication. Consoles instead attempt to hide technology from the consumers. Consoles do not require manual upgrades or advanced settings – they are designed to be equally as easy to use as a TV. The vision of “digital convergence” is making it increasingly challenging to maintain technological simplicity.

Technologically consistent. A game console platform consists of predictable and stable sets of standards, which is not available on the PC platform. In the PC industry standards are somewhat perplexing since almost all standards are the results of a long and confusing war between competing standards. An old ironic saying in the IT industry claims that the good thing about standards is the fact that there are so many to choose from.

Good usability. Regardless of the efforts of software engineers, cognitive psychologists and user interface experts, most users utilise a minimal percentage of a computer’s possibilities. PCs are relatively hard to install, hard to use, and hard to modify. Console manufacturers on the other hand have made game consoles as usable as possible.

Inexpensive. PCs are relatively expensive. Despite falling prices, due to an extremely competitive market, the price of a PC is significantly higher
than most other game platforms. The production costs of game consoles are industry secrets, but according to some sources the sixth generation console Xbox was produced for slightly above $300 (Takahashi 2002b). Console manufacturers therefore choose to reduce the price below the production cost, i.e. to sell with a loss, to later recoup with revenues from license fees and in-house games. In this way Microsoft managed to lower the selling price to less than $150 for the Xbox at the end of its lifespan in 2005. Nintendo’s current generation console Wii is rumoured to cost less than $160 to produce (Smith 2006), making it one of the few non-subsidised consoles in video game history, while Sony’s Playstation 3 cost was $800 at launch (Fahey 2006) and currently is down to $400 (Androvich 2008c). The goal is to reach an end-consumer price level within the impulse/gift purchase range.

**Aesthetical Design.** PCs are predominantly designed for industrial purposes, which often result in unaesthetical products that clearly express that they are not intended for entertainment. Game consoles have bolder designs that push the boundaries of industrial design in the IT/electronics industries. For instance Nintendo’s GameCube was shaped like a cube and available in many vibrant colours, Playstation 2/Playstation 3 are black futuristic hi-tech designs that can be placed vertically, Microsoft originally envisioned an Xbox console in the shape of a big silver-coloured “X”, but that concept was abandoned due to cost reasons but their current (seventh) generation console provides an “inhaling” Xbox 360 (with concave sides).

**High Barriers to Entry.** The PC’s low entry barriers attract many developers, which potentially might create an overcrowded market plagued by low quality games and imitations. This was exactly the case in the beginning of the 1980s when the game industry crashed due to an oversupply of low quality games (Herz 1997). To prevent such a scenario, console manufacturers impose quality requirements on third-party game developers by increasing the barriers to entry for game developers/publishers, e.g. expensive software development kits, license fees and quality controls, creating a “walled garden” where only games of a certain quality level are allowed to exist.

**Business Strategies of the Console Industry**

A game console’s life cycle will be presented to demonstrate the logic of creating and maintaining a game console platform in the video game marketplace.
Development/Design

Two to four years prior to a new console introduction and predecessor phase-out, the game console manufacturer initiates hardware and software development for the new game console. Reliable industry data is scarce, but according to some sources (Gibson 2002) Sony invested $1.9 billion in developing the Playstation 2 up to 1999, its launch year. Microsoft is said to have planned development investments between $900 million and $3.3 billion over the Xbox’s planned life of 6 years (Takahashi 2002b). Sony, in cooperation with IBM and Toshiba, are said to have invested $400 million in the development of a next generation graphics chips called “Cell” which is a central component of the Playstation 3 (Spooner 2002). In other words, development of console hardware is an extremely capital intensive process with colossal entry barriers.

As game consoles depend on the availability of a wide variety of good games, which can only be provided in cooperation with third-party game developers, console manufacturers have to take into account important game developers’ opinions regarding software and hardware expectations. Without the support of game developers a console is doomed in the marketplace.

Case: Xbox Development

Game consoles are unconventional combinations of sophisticated (and expensive) technology and cost reducing solutions. Illustrating this trade-off is the case of Xbox. Microsoft began its game industry venture with a software technology called DirectX, a set of software packages facilitating PC game development. DirectX did not, however, manage to compete with the explosively successful game consoles such as Playstation. In response Microsoft quickly entered the console with a console based on the DirectX technology – hence the name X-box as in Direct-X. Microsoft’s strategy focused on quickly transferring its leverage, technology and third-party game developers from the PC to the console, by replicating (or “porting”) the successful DirectX technology to a new hardware platform.

When converting the DirectX technology from PC to console, Microsoft faced two strategic options: creating a new proprietary hardware platform (requiring modifications of the DirectX technology itself), or leaving the DirectX technology intact and instead adapting the hardware to a console format. The first alternative would involve large hardware development costs and competence, which it lacked as a software company. Furthermore this option would interfere with the primary objective of transferring leverage from PC to console, since the DirectX technology would have to
be revised. Microsoft in cooperation with Flextronics instead opted for a solution that could be characterized as a low budget PC. Xbox has an Intel processor, RAM, hard drive, modified elements of Microsoft Windows 2000, and a graphics processor from NVIDIA (the leading graphics card manufacturer). By relying on the unmodified DirectX technology and PC technology, Microsoft reduced development costs of the Xbox.

The Xbox case shows how factors such as cost reduction, time-to-market, hardware and software technology issues, corporate strategy among others dynamically affect the design and development of game consoles. Having lost about $4 billion (Murphy 2005) Microsoft decided after only 4 years to withdraw the Xbox replacing it with the successor Xbox 360. Most likely the original Xbox was rushed to market and its profitability was less prioritised in favour of creating market share. The PC-based construction provided a rapid time to market but not necessarily profits, or security (much to Microsoft’s disapproval a rogue hacker project ported the open source operating system Linux). The X360 was prematurely introduced because the Xbox’s objectives had been achieved. Furthermore, the Xbox was not downgraded to a secondary/alternative low-cost console (as in the case of PS2) but was fully discontinued in 2006.

With the X360 the Intel-chip based PC architecture was abandoned and a complicated triple-core PowerPC-based architecture (an alternative processor family developed in the early 1990s by IBM together with Motorola and Apple) was chosen. Legal disputes with the Xbox’s graphics card manufacturer NVIDIA resulted in a change to ATI. The new hardware platform entailed limited backwards compatibility, which is achieved by emulation software updates through the Xbox Live service and a hard disk accessory (unlike the original Xbox it is optional). The X360 constitutes an attempt to create a competitive and profitable console generation, which meant that backwards compatibility and the hard drive had to be sacrificed. This has paid off as Microsoft’s Xbox division posted a $426m USD profit in 2008 (Androvich 2008b).

A notable converse case is the PS3, whose hardware design was extremely costly and delayed due to Sony’s insistence on including an expensive Blu-ray drive as part of Sony’s campaign to establish Blu-ray as the next-generation media format. The drive is listed as the single most expensive component in the PS3 console, at $350 representing almost half the initial production cost of $800 (Fahey 2006). The expensive development led one of Sony’s presidents to forecast a console lifespan of 10 years which is substantially longer than previous console generations (Gibson 2006c). The PS3 also forced the “Father of the Playstation” Ken Kutaragi, who had launched the entire Playstation project and then successfully cre-
ated the extremely successful PS2, to step down as Chairman and CEO of the console division (Androvich 2007b).

Nintendo presented yet another strategy with the Wii console which aimed to re-invent the notion of console in terms of play and targeting audience, while maintaining a low investment. In relation to X360 and PS3 Wii’s graphics are subpar, and their movement-based input devices definitely target a different audience. Its production costs are so low that subsidisation is not required (Smith 2006), and its innovative approach has transformed it into the current (2009) market leader (in terms of sold console) 3 years into the seventh console generation with more than 25 million consoles sold (Purchase 2008b).

Consequently, it is clearly visible how the design and development of a console reflects issues of marketing strategy/objectives, competitive context, profit margins, hardware strategy, corporate alliances and numerous other factors.

**Production**

Sony managed to sell 980,000 PS2 consoles during the first 3 days after its premiere in Japan 2000 (Becker & Fried 2000). An efficient production process is required to satisfy such great demand. Sony is said to have invested $1.2 billion in establishing sufficient fabrication facilities to ensure volume production of PS2 and its components (Bonner 2000). Despite these investments Sony had huge production difficulties. During the first Xbox generation Microsoft initially outsourced its entire production to the outsourcing giant Flextronics, but also faced production problems.

During its life span, the console’s design and production process is continuously improved. The aim is to reduce production cost in order to minimise the subsidy loss for every unit, or in competitive cases, maintain the subsidy level and reduce the price. For instance, Sony’s PS2 has been updated more than dozen times (version V0 ranging to V15b as of 2008). Updates provide cheaper components – the hardware specification cannot be modified as this leads to fragmentation (as Sega experience with its add-ons/upgrades of the Mega Drive/Genesis with Mega-cd and 32X). Update V12 of the PS2 introduced a “slimline version” that reduced the size to less than half (from 301×182×78mm to 230×152×28mm) and weight from ca 2 kg to 720g, which demonstrates how extensive the modifications are. The PS3’s production cost has been halved in two years from $800 to $400 USD (Fahey 2006), but Sony’s Playstation division (Sony Computer Entertainment) is not expected to turn a profit until 2009 (Androvich 2008c).
Instead of continuously maximising technological performance as in the PC case, console manufacturers choose to minimise costs while remaining the same technological performance (for consumers/developers). After all, the objective of game console manufacturers is to maximise the entire game console eco-system.

The table below provides data of the production capacity required to satisfy the market demand of the top 10 video game consoles, as of 2009. It also illustrates the increasing market size, as Wii in three years managed to produce/sell as many consoles as Atari 2600 managed during its entire lifespan.

<table>
<thead>
<tr>
<th>Introduction Year</th>
<th>Total Number of Game Consoles (Mil.) in 2009</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sony Playstation 2</td>
<td>2000</td>
</tr>
<tr>
<td>Sony Playstation</td>
<td>1994</td>
</tr>
<tr>
<td>Nintendo NES</td>
<td>1983</td>
</tr>
<tr>
<td>Nintendo Wii</td>
<td>2006</td>
</tr>
<tr>
<td>Nintendo Super NES</td>
<td>1990</td>
</tr>
<tr>
<td>Nintendo N64</td>
<td>1996</td>
</tr>
<tr>
<td>Microsoft Xbox 360</td>
<td>2005</td>
</tr>
<tr>
<td>Atari 2600</td>
<td>1977</td>
</tr>
<tr>
<td>Sega Mega Drive/Genesis</td>
<td>1988</td>
</tr>
<tr>
<td>Sony Playstation 3</td>
<td>2006</td>
</tr>
<tr>
<td>Microsoft Xbox</td>
<td>2001</td>
</tr>
<tr>
<td>Nintendo GameCube</td>
<td>2001</td>
</tr>
</tbody>
</table>

Source: (Business Week 2006; Dumitrescu 2009; Nintendo 2008; Nuttall 2008, 2009; Thorsen 2009)

Marketing and Sales

Massive marketing campaigns are required to launch new game consoles. Microsoft’s marketing budget for the Xbox during its launch year was $500 million (Wong 2001). Until the beginning of the 1990s the industry primarily concentrated on children, but has now refocused on an older segment, 18 to 34-year-olds. Sony’s innovative marketing strategy opened up an entire new (or rather old) market turning the PS and PS2 to the most biggest consoles ever. Sony’s target group is also more “lifestyle-oriented” with self-expression through consumption of “lifestyle” products and services, such as fashion/clothes, music, film, cosmetics, magazines, certain foods/(alcoholic) beverages, furniture, home electronics, travels etc. This
consumer expressive urge was interconnected with the video game medium by associating the PS console with more adult, fashionable and pop cultural trends, such as rave (at that time extremely “cool” and popular music genre), skateboard subcultures and sponsoring sport events.

Initially, console generations were classified according to the technological dimension of bit size, i.e. the word size of the CPU, but this became irrelevant during the fifth generation when game consoles became hybrids of different bit size electronics and stopped being directly related to the “power” of the hardware.

<table>
<thead>
<tr>
<th>VIDEO GAME CONSOLE GENERATIONS</th>
<th>YEARS</th>
<th>NOTABLE VIDEO GAME CONSOLES</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>First generation</strong></td>
<td>1972-1977</td>
<td>Magnavox Odyssey, Atari Pong, Coleco Telstar</td>
</tr>
<tr>
<td><strong>Second</strong></td>
<td>1976-1984</td>
<td>Atari 2600/5200, Mattel Intellivision, ColecoVision</td>
</tr>
<tr>
<td><strong>Third</strong></td>
<td>1983-1992</td>
<td>Nintendo NES, Sega Master, Atari 7800</td>
</tr>
<tr>
<td><strong>Fourth</strong></td>
<td>1987-1994</td>
<td>Sega Mega Drive/Genesis, Neo Geo, Nintendo Super NES</td>
</tr>
<tr>
<td><strong>Fifth</strong></td>
<td>1993-2002</td>
<td>3DO, Amiga CD32, Atari Jaguar, Sega Saturn, Sony PS, Nintendo N64</td>
</tr>
<tr>
<td><strong>Sixth</strong></td>
<td>1998-2006</td>
<td>Sega DC, Sony PS2, Nintendo GC, Microsoft Xbox</td>
</tr>
<tr>
<td><strong>Seventh</strong></td>
<td>2004-</td>
<td>Microsoft X360, Sony PS3, Nintendo Wii</td>
</tr>
</tbody>
</table>

Many generations are also hard to define and overlap due to transitional phases. The notion of console generation is a way for the industry to identify macro-trends in marketing, technology and content development. Every new generation constitutes a tangible leap in console performance. The most visible performance leap was the introduction of 3D graphics with the fifth generation consoles. The sixth generation introduced improved 3D graphics, but also DVD as storage media thus significantly expanding the amount of 3D graphics that could be delivered on a game console, similarly to what CD-ROM did to game cartridges when transitioning from fourth to fifth.

Statistics from Sony (2004) show that towards the end of the console cycle, a PS2 owner had on average bought 8 games, corresponding to approximately $400 in console investments. In addition, there is the cost of the console itself, $200-$500, and in many cases accessories for about $100, in all about $1000. This substantial investment causes a so-called “lock-in”
effect (c.f. Shapiro & Varian 1998), which is desirable since it increases transition cost to a competing platform/console, but also negatively between new and old generations of consoles from the same manufacturer. In an attempt to reduce negative lock-in effects between PS (old generation) to PS2 (new generation), Sony introduced backwards compatibility which was a de facto standard console feature. Lately this has changed since both X360 and PS3 have limited backward compatibility.

In a situation with fierce competition and low console prices manufacturers utilise subsidies as a means of competition, which is financed by their second revenue source: game sales. A license fee is added to the individual video game title price in order to pay off the subsidy. Its size is determined by two factors: subsidy size and subsidy structure. According to some sources (Takahashi 2002a) the console production costs of a the previous generation consol Xbox was subsidised with $150. According to electronics consultancy iSuppli Corporation the PS3 was at the time of its launch subsidised with $241.35–$306.85 (depending on model), while Microsoft subsidised the X360 with $75.70 (Edge 2006; iSuppli 2006). This subsidy is then divided by the projected average number of games purchased by console owners – the so-called tie-ratio. According to Sony (2002) its tie-ratio for PS2 was 7.9, Xbox had a tie-ratio of 5.7–9 (Takahashi 2002b), and GC 5.5. Dividing the subsidy by the tie-ratio gives a break-even license fee level. A typical license fee constitutes 11.5% of the retail price, or $7 out of $60 (Rosmarin 2006) for contemporary X360 titles. In order to secure a successful tie-ratio, i.e. break-even, console manufacturers develop and publish exclusive in–house games. These games give competitive advantages, but also ensure faster recoupment since in–house developed games generate higher margins due to vertical integration. Additional ways to ensure a good tie–ratio is to sign exclusive game titles from independent third–party game publishers. Sales of Sony’s PS2 console were extremely boosted by the unexpected megahit of Grand Theft Auto III (gta3) released in 2001. Although denied by Sony, and the developer Rockstar Games or publisher/owner Take Two Interactive, there are indications that Sony had signed an exclusivity agreement whereby the game could only be re-released on an competing platform after a certain extended time frame (Bramwell 2003), possibly by waiving the console license fee. gta3 was released on Xbox an entire two years later. Similarly, the extremely successful follow-ups Grand Theft Auto: Vice City (gta:vc) and Grand Theft Auto: San Andreas (gta:sa) were also released with an initial period (8–12 months) of Sony exclusivity. Microsoft had to be content with releasing a bundled double pack of gta3 together with gta:vc. By the next console generation and major new release gta4, Microsoft had learnt their lesson: gta4 was released simultaneously on X360 and PS3 in 2008. Furthermore, Microsoft managed to
sign an X360 exclusivity deal for downloadable episodic content via the Xbox Live service at the price of $50 million – a transaction that has been denied by the involved parties (Martin 2007b).

Marketing and PR are not limited to consumers but also target third-party game developers and publishers. Demonstrations, developer conferences, launch parties, (occasionally) financial support (free software kits or initial development financing), industry contacts are provided to market the console with game developers. Starting in 2001 Microsoft has arranged an international publicity event for game developers/publishers, resellers and media, called X01 in 2001, and X02 in 2002 and so on, which creates a convenient forum for new product announcements and marketing campaigns.

**Phase-Out**

The typical life span of a game console is about 6 years and depends mainly on technological factors: the first two years the console is introduced while the last generation is slowly phased out. The next two years are the console's peak in terms of popularity and sales. Finally, the console goes through a period of declining/saturated sales, followed by a transition phase into the next generation of consoles. During the phase-out production of the console is continued, and it is often remarketed as an entry-level game console/emerging markets console. The previous table illustrates that the PS2, despite being replaced by the PS3, is still the biggest console platform. The production run of its predecessor, the PS, was ended the same year as the PS3 was introduced, thus lasting 11 years. In other cases, most notably the Xbox, the phase-out was rapid and limited overlap with X360 existed. It was not re-marketed as a budget alternative.

**TECHNO-ECONOMIC MARKET PLATFORMS**

The foregoing chapters have explained console economy by describing the characteristics of game consoles and their life cycles. The analysis clearly illuminates that the game console industry is not solely a hardware business, but primarily a set of connected markets and businesses. The popular “razor and blades” metaphor effectively represents many aspects of the razor/game console industries. Unfortunately, it does not sufficiently reflect many important aspects of the console industry, such as the complex
technological/economic balance and the dependence on third-party game developers.

A more fitting way to depict these features is proposed, namely to view the console/game market as a (medieval) marketplace. Salesmen have to enter through a gate and pay a substantial entry fee/sales license. Buyers on the other hand must pay a low entrance fee. For each sold item salesmen pay taxes to the “patron” – the marketplace owner. Buyers find a wide selection of goods, salesmen increase their sales, and the patron generates revenues from entrance fees, taxes and sales from his/her own in-house (courtyard?) salesmen. The patron relies on foreign salesmen since they provide exotic goods not available in the region of the marketplace.

The patron is interested in maximising the marketplace profit. A price war with a neighbouring marketplace has reduced entrance fees to a level where they can no longer cover the construction costs of the surrounding wall. The patron must now decide the following factors: investment in wall construction, size of entrance fees, size of taxes, how to attract salesmen and buyers, and finally how many in-house salesmen to employ.

To balance all these factors in order to maximise long-term (until the next marketplace has to be built) profit is a balance act similar to the console industry. The building of a marketplace wall represents the development and production costs of game consoles. Buyer entrance fees represent the console price. Entrance fees/licenses for salesmen correspond to SDKs and quality control. Taxes, by far the largest revenue source, relate to the console license fees. The patron’s in-house salesmen are equivalent to the in-house game developers.

A small marketplace reduces the initial investment risk and the resulting low entrance fee may attract more buyers. However, too small a marketplace can displease salesmen (e.g. Wii’s subpar graphics are unsatisfactory for some game developers/publishers). Too expensive a market wall may impress, but entrance fees and taxes may become too steep and drive both salesmen and buyers away (as was initially the case with the PS3). Consequently, the patron must predict the number of buyers and adapt its sizes and costs accordingly. The marketplace metaphor shows to a wider extent, than the “razor and blades” metaphor, how many factors must be balanced. The metaphor stresses that consoles are small technologically induced economies where market strategy and structure affect dynamics and development of these economies.

Finally, the metaphor also clarifies the power mechanism of console manufacturers: they design/manufacture console hardware, publish in-house production, develop with subsidiary in-house studios, distribute both hardware and software through own distribution organization – console manufacturers literary own and control entire segments of the video
game economy. Video game consoles constitute platforms of technology, economy and power leveraging. Their power exceeds that of any third party game publisher, even Electronic Arts. This chapter has shown how game consoles, using a “razor and blades” business model derived from the symbiotic relationship between consoles and games, have successfully managed to conquer the game industry, by resolving the technological/economical instability inherent in the PC game platform. Furthermore, a life cycle analysis has revealed that game consoles constitute “console economies” that rely on a complex balance between aspects such as console development costs, production capacity, marketing costs, console price, subsidy size, tie-in ratio, license fees, in-house game development, and relationships with third-party game developers. The proposed (medieval) marketplace metaphor better highlights the complex technological/economic balance and the dependence on third-party game developers within these console economies.
CULTURAL INDUSTRIES

This chapter will present a cultural industries perspectives on the video game industry. It will also apply a particular framework, from culture economics, in order to verify the game industry as a cultural industry. The reason for this exercise is almost trivial: video games are almost instantly compared to “other” media industries as soon as someone discusses the industry (as witnessed below by a selection of countless quotes containing this claim). What is the cultural industry perspective? Can it be applied to the game industry, and if so, what are the ramifications? What type of consequences and insights can be gained from this? Can it provide an explanation and model for the research question of this study? Why do industry professionals compare the game industry with the film industry?

Q: How does the [game] industry perceive games?
A: […] Personally I view games as an entertainment product. To make something that people will enjoy and be happy about. I see it as a competitor to books, films and CDs. In today’s economy competitors can also be friends and that’s why games are based on movies, and movies based on games etc. Make books out of games too. Because it all comes together. But personally I see it as entertainment.

Game Industry Consultant (2006-02-09)

Q: OK, if I put it like this, compare the [game] industry to another similar industry?
A: In that case, it’s film. You have to develop a concept, you have to bet on the project, you have to bet a lot. And then… if you bet on the project you have a high upside at the same time, as there is a high risk. You have to know what you are betting on.

Vice-President and cro of major Swedish game developer (2006-02-10)
Q: Compare the game industry to another similar industry?
A: Music, or better, the film industry. Games and film are connected. Development of games and film is done in the same way. With games you have to develop the characters/actors yourself. It’s all about making something that looks good, that’s interesting from beginning to end. The game giants, the major game publishers, that are our customers, often come from the Hollywood area in California

CEO of major Swedish game developer (2002-08-05)

The three quotes above are just some of the multitude of comparisons, allusions and references between the video game industry and the entertainment industry, and in particular the film industry. There are several themes within these claims, but can be generally divided into two fundamental dimensions:

- Video game *medium* being similar to other (traditional) forms of media (predominantly film).
- Video game *industry* being similar in terms of business models, dynamics and structure to other media or entertainment industries.

These two fundamental dimensions can be further divided into several important sub-questions.

**MEDIUM:**

- What types of *similarities/differences* exist with other medium/film?
- What are the differences/similarities in the fundamental communication trio of reader/viewer/consumer – medium/text – author/creator/producer?
- Is the similarity to film based on *story-telling* characteristics?
- What is the unique *proposition* of the video game medium?

**INDUSTRY:**

- Is it a *media* industry – similarities/differences in industry structures?
- What are the similarities as regards *dynamics* and *strategies* in relation to other media industries?
- Differences/similarities in consumption/production behaviour/culture – how do they affect the industry?
The medium dimension will be analysed at a later stage in this study, but as witnessed by the first quote “it’s all coming together” i.e. referring to a media convergence and “that’s why games are based on movies, and movies based on games” – there is a prevalent opinion in large parts of the industry that the video gaming medium is somehow connected to the film medium in terms of some common media dimension. Later it will be shown how this is believed to be a narrative dimension that communicates stories regardless of medium. It is important to understand this position: the industry (and many outside of it) is not approaching similarities with a perspective of “why?” but rather from the other side – “why not?”.

This section begins by examining the industrial aspects, followed by an analysis of the medium-related claims. The three quotes elucidate associations to the media industries, or the so-called cultural industries, and more specifically to the film industry. The first respondent, sees video games as competitor to “books, films and CDs” since it all about “entertainment”. The CFO in the second quote stresses similar financing mechanisms: you have to know what you are “betting on” in a highly unpredictable market. In the third quote resemblances between the industrial production logic are provided: it is “all about making something that looks good and […] interesting”. Furthermore, the respondent claims that major game publishers, are clustered in the same geographical area as in the film industry, i.e. Hollywood and California.

To provide an understanding of the theoretical implications of this association, a brief review of the cultural industries perspective within academic research will be presented. The field of cultural industry studies emanated from the concept of culture industries launched by Adorno and Horkheimer (Adorno & Bernstein 2001) as part of the Frankfurt school within critical theory in the 1930s and ’40s (Held 1980; Sim, Appignanesi, & Loon 2001). The aforementioned German sociologists opposed modern mass culture, as they did not consider it to be genuine, questioning and innovative art, but rather a result of a “culture industry” that blasted an enslaving and capitalistic discourse into the world. Culture industries, which Adorno and Horkheimer considered to be a negative concept, eliminated critical and emancipative thoughts within society by providing manipulative and easily digestible “low culture” that diverts thoughts from societal issues and instead focuses on making people content – basically a panem et circenses type of argument.

Despite a traditional association between “high art” and bourgeois society, the Frankfurt school considers the notion to be a favourable concept providing challenging and innovative thought. A slightly exaggerated interpretation implies that society is incapable of interpreting the manipulative capitalist messages of “low culture” and that “high culture” constitutes
a “good” culture. These theories are not necessarily in accordance with popular post-modern theories regarding culture, mass communication and the author-reader dichotomy. Is it possible to maintain any “objective” notion of taste when influences are collaged, decontextualised and repackaged for every new film, magazine cover and music release in a globalised media village of relativism and hyper-affluent consumerism? Regardless of these serious objections, the notion of culture industry has had significant impact on studies of popular culture and mass media.

Hesmondhalgh’s *The Cultural Industries* (2002) presents a broad exposition of cultural industries and related research, and attempts to define commonalities. The core cultural industries according to Hesmondhalgh consist of the following branches:

- Advertising and Marketing – considered “functional” since it sells other products, but is at its core based on creative output.
- Broadcasting – radio and television.
- Film Industries – film production in cinema, DVD, video and others.
- Internet Industries – according to Hesmondhalgh: “website creation, portal providers”.
- Print and Electronic Publishing.
- Video and Computer Games.

In Hesmondhalgh’s view the video game industry is undoubtedly a cultural industry although his extensive study pays miniscule attention to this industry. The fact that video games are *games* does not exclude them from the sphere of cultural industries despite that e.g. casinos, board game manufacturers and paint ball organizers are not considered part of this domain. Video games are often classified as “media” – it is “creative” and displayed on television sets, hence “media” despite the fact is that in many cases game development has more in common with board game design than it has with film production. There is evidently a need to explore the dimensions of production, but also the actual medium and examining its fundamental nature of communication between author-text/medium-reader.

There are a number of important borderline cases of cultural industries in Hesmondhalgh’s study:
• Sport – similarities between sport and, for example, live music performances are considerable, but the difference is constituted by the fact that sports are competitive whereas creative/cultural performances are not, according to Hesmondhalgh.

• Consumer electronics/cultural-industry hardware – many forms of media are reliant on (electronic) hardware for presentation. In other cases, such as the DVD medium, the consumer electronic hardware becomes an intrinsic part of the cultural industry, but electronics manufacturers are borderline cases since they are based on the output of creatives.

• Software – in this industry many creative workers in teams produce software, but the output is predominantly functionally oriented instead of aesthetically.

• Fashion – similarly the fashion industry is considered a hybrid industry since it combines creative design with a consumer goods industry.

These exceptions give rise to a number of observations. Firstly, the creative industries are based on the creative outputs of so-called symbol creators whose primary activity is:

The invention and/or performance of stories, songs, images, poems, jokes and so on, in no matter what technological form, involves a particular type of creativity – the manipulation of symbols for the purposes of entertainment, information and perhaps even enlightenment.

(Hesmondhalgh 2002)

The question is whether the activity of game design falls under the category of “invention of stories, songs, images, poems, jokes, so on” – partially yes, but what about creating game rules, programming game engines and overall game spaces (visual as well as symbolical), can it be considered as invention of stories and images, or does it belong to the “so on” category? The interactive dimension of video games break with the traditional line of communication where symbol creators produce static (in terms of symbolic integrity, not visual or other type of movement) works that after distribution (physical, broadcasting, digital etc) is intended for consumer/reader interpretation. Does not the reader not only interpret but also jointly co-author the experience, text and medium? Is the design of interactive and dynamic symbols similar to creating static symbols?

Hesmondhalgh mentions “Internet” as one of the core cultural industries. Besides the vague use of the notion of “Internet” as medium/indus-
try: is not Internet rather a communication platform with countless types of media, instead of singular type of media/industry? Furthermore: when does engineering/technology become “cultural”? When do “non-cultural” types of activities transition into the sphere of the cultural? Examples of “Internet industries” are narrowed to examples of “website creation, portal providers” – ignoring the somewhat outdated examples (written in 2002) of “portals” (popular during the “first dotcom era”), the examples are focused on building and creating websites. However, this technological aspect is considered as a borderline case (“Software”), which is excluded due to its functional, instead of aesthetical, orientation. The boundary between them becomes even more blurry when taking into account the developments of the last couple of years within the Internet/web sphere – the trend towards so-called “social Web”/online communities which emphasises the social and creative aspects of technology. One of the world’s largest and most popular photo sharing sites Flickr facilitates the sharing and publication of (user-generated) photographs – by definition a creative and cultural service. However, is the highly technical programming of its interface, gigantic databases and community features part of this cultural sphere? Or is this “functional” software engineering?

This ambiguity is also evident with video games: when does technological engineering/development of video games become “cultural”? Is it only the “non-software” aspects, such as game art and sound/music? Game designers? This techno-creative complexity exists elsewhere: high technology is essential for most Hollywood films, but also musicians and other creative industries. Is the issue of separating technology and creativity/culture not resolved in Hesmondhalgh’s framework?

These inconsistencies not only touch upon production/industrial aspects, but also issues of the video game medium itself, which is interconnected with these more macro-structural issues. Sport is a borderline case since it is competitive whereas cultural/creative performances are not. Consequently, a criterion for cultural/creative industry includes aspects of the performance/medium itself. Does this make a DJ performance cultural whereas the customary DJ battle not, due to the competitive element? This raises several interesting questions: since video games are almost unequivocally competitive, and as will be shown later according to some game theorists the variable and quantifiable outcome (“victory”) is one of the most fundamental characteristics of (video) games – does this mean that video games are not creative/cultural products?

This raises a second pivotal aspect of the video game medium: who is the performer/symbol creator of video games? Hesmondhalgh’s perspective is based on creators of symbols that are created ex ante or live, but limited by physical and technological limitations. Music is performed live
or distributed on various types of media. Others, for instance film, are only possible to produce/consume in one fashion, i.e. there are no “live movies” (even though live broadcasts of drama/stories/narratives do rarely exist). With some exceptions (improvisational drama, film, music, poetry) most traditional media is based on a priori production logic – the singer rehearses a repertoire, a movie is based on a film script, music is composed prior to performance, etc. In other words, an author of some kind exists – be it a singular individual, or crews of hundreds of people. Sport is partially preparational (“training”), but the actual performance is by definition improvisational in various degrees and the competitive element makes it non-cultural/borderline cultural. When applied to the video game medium the situation becomes more complex: who is the author – game developer or gamer? Who is performing – developer or gamer? Video gaming is in most cases competitive, but the competitiveness is located with the gamer, not the author/developer. Authorship and performance are heavily detached. One could argue that music, particularly classical music, is also detached – philharmonic orchestras play music written centuries ago. However, is it stringent to claim that game developers are writing “symphonies of play”, performed by gamers? With a communicational relationship similar to the one between a violinist and Vivaldi? Consequently, the fundamental question of symbol creation in the video game medium arises – are video games constituted by the same general type of symbols as in the other types of traditional media? In a traditional cultural industry, authoring symbols remain static. Game developers create symbols, but during consumption the reader/gamer modifies, extends, eliminates and reorganizes symbols according to the rules of the game. Are these “interactive” symbols a radical departure from traditional symbols? Most importantly: does interactive symbol production differ radically, due to the interactive dimension?

The cultural industries perspective as defined by Hesmondhalgh, and indeed by the Frankfurt school, is focused on the process of production, and not consumption, in line with critical theory and other Marxist frameworks. Considering Hesmondhalgh’s symbol production focus it is surprising to find several categories of symbol creation that have been totally overlooked – not even excluded as borderline cases: architecture, industrial design, haute cuisine and theme parks. They communicate cultural/creative/symbolic production on a scale that some traditional media forms are not capable of. In an age when global superstar architects (“starchitects”) such as Daniel Libeskind, Lord Norman Foster, Zaha Hadid, Frank Gehry, Herzog & de Meuron, Rem Koolhaas, Jean Nouvel and others can revive cities/regions by creating instant cultural/architectural icons recognised all over the world, it is inconsistent to ignore this as a creative/cultural industry. It involves creative work by symbol creators whose output, build-
ings, contain aesthetical/creative value that expresses (cultural/political) power, but also increasingly act as a “global communication channel”. This is illustrated by the explosive growth of entire Manhattan-like skylines in cities such as Dubai and Shanghai, which using architecture as symbolic communication have, within less then a decade, established themselves as global city contenders.

Similarly, it is questionable why fashion, but not industrial design, is regarded as a borderline case. Industrial design as cultural/creative expression form has boomed during the last decades transforming itself into a global industry in its own right. Designers, manufacturers and companies from an ever widening range of industries, regions and entire nations (as witnessed by the Cool Britannia campaign, or Designåret 2005 in Sweden) use industrial design as a competitive advantage and exhibited in prominent global showcase publications (e.g. cult design magazines Wallpaper* or I.D) or displayed during celebrated design fairs such the (e.g. Salone del Mobile in Milan, ICFF in New York or DesignTide in Tokyo). Why is not (industrial) design included as a cultural industry, considering that for instance Swedish furniture company IKEA has probably shaped the image of Sweden like few other Swedish cultural products? Why is Italian fashion and design less of a cultural industry than e.g. Italian opera, considering that Italian fashion/design is consumed and acknowledged by countless more people than opera? This line of argument can be extended to other cases such as haute cuisine or theme parks (a small example: regardless of the symbolical/cultural implications, the faux-historical canals of The Venetian Casino Resort in Las Vegas are equally important communicators/(re)producers of Venetian/Italian culture as the original historical Serenissima city).

Some of this stratification of cultural expression is inevitably connected to the notions of low vs. highbrow culture. Many of the boundaries can be summarised as being associated with the traditional “fine arts”: all type of text writing (poetry, fiction, journalism etc.) is considered more “cultural” than software writing. Opera, drama or philharmonic orchestras are preferred to fashion/haute cuisine that have similar, or even older, traditions and are consumed by much wider segments of society. It goes without saying that an interpretation (of probably hundreds) of Mozart’s Cosi fan tutte, for instance, is endlessly more prestigious, “cultural” and research-worthy than the latest global release of retro Puma sneakers. The point being made here is that Hesmondhalgh, and the cultural industries field, incorporates a wide range of industries – to the point that their common denominator – the creation of “symbols” – becomes almost indistinguishable. Since this study is concerned with exploring similarities between the
video game industry and creative/cultural/media industries (as indicated by the empirical data of this study) it is prudent to analyse the fundamental criteria for defining these types of cultural industries.

To elaborate common characteristics, Hesmondhalgh defines the following distinctive feature of cultural industries (Hesmondhalgh 2002, p. 17):

**PROBLEMS**

- Risky business.
- High production costs and low reproduction costs.
- Semi-public goods; the need to create scarcity.

**SOLUTIONS**

- Misses are offset against hits through a repertoire.
- Concentration, integration and co-opting publicity.
- Artificial scarcity.
- Formatting: stars, genres and serials.
- Loose control of symbol creators; tight control of distribution and marketing.

Furthermore, the cultural industries act as a “linked production system” that compete with each other for the following factors (Garnham 1990; Hesmondhalgh 2002, p. 12):

- A limited pool of disposable consumer income.
- A limited pool of advertising revenue.
- A limited amount of consumption time.
- Skilled creative and technical labour.

What Hesmondhalgh describes, primarily based on the works of British Marxist media/communication theorist Nicholas Garnham, is an industry which is based on a highly risky production of symbols/texts. Production is expensive, but its reproduction costs, *i.e.* manufacturing of copies, is very low in comparison. This makes them often *semi-public goods* — its consumption does not influence the demand and/or possibility of other consumption. The primary economic mechanism of counterbalancing this semi-public characteristic is to create artificial scarcity through various strategies.
such as vertical/horizontal industry integration, industrial concentration, internationalisation, tight control of distribution and marketing and others. Several types of ubiquitous risk management tools exist: “production portfolio” (hits offset misses), formatting such as stars, genres and serials which can be combined into profitable production mechanisms.

The problems and solution practices are almost identical in the video game industry. It is indeed a “risky business” where demand is notoriously difficult to predict, and sales volatility high. Video game production, i.e. development, is extremely expensive and consists of substantial ex ante investments, followed by incrementally variable costs related to reproduction and marketing. The reproduction costs (together with packaging) was previously shown to be ten times smaller than production/development costs. The video game software product is basically public – the download/purchase of one video game software copy does not in any way affect the consumption of others. Subsequently, artificial scarcity is needed in order to create viable business models.

The video game industry’s business solutions are almost completely in line with those described by Hesmondhalgh and Garnham: publishers rely on a portfolio/pipeline of products with potential hits that can offset the misses in a highly volatile and competitive market where practically all cultural products/services become substitute products and compete for the same attention, income and time (which adds another competitive dimension compared with other non-cultural products). A video game is roughly the equivalent of two (music) CDs, two (movie) DVDs, one/two tickets to live music performances or five to six books/cinema visits. Product portfolio strategies give rise to economies of scale and horizontal integration since bigger portfolio decreases (statistically) the risk, which explains the increasingly consolidated publisher segment. Vertical integration is also frequent in the video game industry as described in previous chapters. Despite this integration, the actual control of the symbol creators is fairly loose – the industry has, and continues to, rely on independent and external symbol creators/game developers to provide creativity and innovation, which is fully in line with Garnham’s/Hesmonhalgh’s reasoning.

The game industry similarly employs formatting strategies such as genres and serials/sequels to decrease the intrinsic market/publishing risk. Actually, formatting is used in a higher degree than many other cultural industries, as witnessed by the path-dependent nature of sport, FPS, racing, RPG game franchises that constitute the “cash cows” of major publisher portfolios. A “star system” has not been developed, as is the case of practically all other core cultural industries – despite being equally collaborative production forms. For instance, film directors and actors are generally considered the “stars” among hundreds of co-creators. Attempts to highlight
individual game designers and promote them similarly to film directors have not succeeded. There are examples of legendary game designers such as Shigeru Miyamoto, John Romero, Peter Molyneux, Will Wright, the Miller Brothers, and Hideo Kojima who are among the few established video game auteurs, but they are exceptions. However, “stars” exist on the diegetic level as claimed by the game developer CEO in the previous quote: “[w]ith games you have to develop the characters/actors yourself”. In video games there are no traditional performers on a diegetic level, as the interactive dimension reconfigures the traditional communication system and requires the gamer to participate in the medium. Fictional characters have to be created, video game characters/titles/franchises/IPs such as Mario, Sonic, Pac-Man, Lara Croft, Mega Man become more famous than their creators. They drive popularity and sales based on reputation and recognition – the same mechanisms that maintain the star system in more traditional cultural industries. On the other hand, many video games genres such as puzzle, music, racing, (certain) simulation games do not involve “characters”, which is challenging to translate into a "star-system". Video game “stars” are at best akin to genre-specific brands, which explains the extreme reliance on the other two dominant formatting strategies: genre and serials/sequels. This explains the “IPR turn” in the video game industry, since IPRs have become the mechanism for harnessing revenues generated by video game characters.

The general characteristics of Hesmondhalgh’s and Garnham's definitions of cultural industries apply aptly to the video game industry. However, the analytical focus of these frameworks remains on a general level and do not provide sufficient understanding of the (industrial) dynamics of culture/creative economies. A more extensive analytical framework for cultural industrial economics, and in particular of video game industry economics, is needed. To examine which might be suitable for this purpose a short survey of the field is presented based on Hesmondhalgh’s (2002) extensive overview of the cultural industries field with the following broad analytical framework:

culture economics – a branch of economics traditionally concentrating on fine arts, but also music, film and book industries

liberal-pluralist communication studies – sociological perspective studying impact of mass media on society, democracy and political communication. Predominantly based on theories from psychology, philosophy and sociology forming field of mass-media/communications studies.

political economy approaches – studies how mass communication relates to different forms of power, and the understanding of power/resource
allocation. Evidently rooted in the tradition of political economy, it has three dominating schools:

- **Schiller-McChesney** – North American perspective primarily known for writings of Noam Chomsky, Herbert Schiller and Robert McChesney that describe the power of mass communication and the relationship to political and economic power centres. It is based on traditional American political economical thought and is in many regards a subset of it.

- **Cultural industries approach** (NB cultural and not Adorno’s culture) – European perspective which expands beyond “conspiracy theories in political media”, by incorporating industries of music, film and TV. Emphasises contradictions and tensions *within* the industry, whereas the previous perspective prefers to dichotomise political power and media/cultural industries. It is affiliated with many critical/Marxist perspectives and focuses consequently on issues of private/public ownership and moral questions of justice and equity within the frame of cultural industries. Hesmondhalgh is clearly inclined towards this perspective.

- **“Third world” perspective** – discusses Western media globalisation/imperialism of developing countries and its consequences for the developing world in a globalised world. This perspective is not as extensive as the two previous dominant schools.

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**Sociology of culture/Production of culture perspective** – sociological studies of culture-producing organizations, dominated by US studies explored with traditional Weberian and interactionist methods. Hesmondhalgh praises its demystification of creativity and questioning of taste hierarchies, but criticises it for seeing cultural production as “isolated systems, cut off from political and sociocultural conflict”. In Hesmondhalgh’s perspective social (in)justice in production and consumption of cultural products/goods constitutes a salient characteristic.

**Radical media sociology/media studies** – focuses on how unequal distribution of power/resources is depicted in mass media and relations to media organizations. It is “radical” as it deviates from the political economy perspectives and treats inequalities not as correctable exceptions but rather as fundamental and structural errors that affect production of meaning and mass-culture. According to this perspective the owner abuse over culture industrial organizations is not an exception, but rather reflects a fundamental tension between capital and labour.
Many of these analytical frameworks could be rewardingly applied on the case of the video game industry, most suitable the following:

- Sociology of Culture/Production of Sociology
- Culture Economics

Sociology of culture would have been a fruitful perspective for the exploration of the sociological dimensions of video game development. However, this exploration might become “too local” as it would require at least several sociological studies in every industry entity to generally cover the industry: developers, publishers, distributors/resellers and game console manufacturers. Since this study is predominantly conducted in Sweden where only developers and distributors/resellers exist, a comprehensive study would be challenging to perform. This study is not interested in producing the “sociology of the developer”, but rather to provide an industry-wide study that attempts to formulate and define as many structures and mechanisms within the entire video game industry.

Cultural economics inevitably provide valuable insights when studying business and organizational aspects of the video game industry. Traditionally dominated by neoclassical economical theory, which in many cases produced uncritical and decontextualised research more focused, for example, on the economically calculated raison d’être of the state-subsidised opera, neglecting other important cultural industries such as popular music and television. Hesmondhalgh is highly critical of this perspective:

It [culture economics] equates the well-being of people with their ability to maximise their satisfactions. It provides methods of calculating how such satisfaction might be maximised, thus showing its roots in utilitarianism, the philosophy of happiness maximisation. […] The equation of human happiness with the optimising of economic satisfactions, an assumption that many cultural economics writers inherit from neoclassical economics, provides a poor basis on which to proceed in assessing the cultural industries.

(Hesmondhalgh 2002, p. 28)

Furthermore, Hesmondhalgh objects to the preoccupation of culture economics with, in his opinion, “peripheral cultural industries” such as opera, art galleries and similar, while more mainstream alternatives, such as popular music and television, are neglected, questioning not only the theoretical foundation of culture economics, but also its focus.

In recent years, however, cultural economics has evolved into a more flexible approach focusing on a wider array of cultural industries with qualitative analysis of more mainstream-oriented media/cultural indus-
tries, thus withdrawing from purely quantitative method approaches. Hesmondhalgh notes that this perspective has (finally) begun to acknowledge problems and inequities in cultural production and consumption, with Richard Caves’ *Creative Industries* (2000) as an indicative example.

**VIDEO GAMES AS CULTURAL INDUSTRY**

Caves introduces a broad study that includes a wide range of cultural or *creative* industries (as Caves prefers), but focuses predominantly on (gallery/visual) art, books, films, popular/classic music, but also to some (limited) extent musicals, opera and even auction houses. Surprisingly little attention is paid to the video game industry within the field of cultural industry studies. Hesmondhalg’s (2002) and Caves’ (2002) books dedicate less than one page to this new industry, even though the considerably younger phenomenon of Internet-based media production receives significantly more consideration. The frivolous nature of video games and the ensuing academic reluctance, might be traced to the moralising dynamic of academic activity, as proposed by Gustafsson (1994). This latter argument is in many regards the genesis of this study: why is the economy of the video game industry, in comparison with for instance the automotive industry (or aerospace, fishing, chemicals, metal, forestry, transport and countless other more established industries), virtually unexplored? It might be an issue of industry age and employment, but with for instance all three major US car manufacturers on the verge of bankruptcy and most other European and Asian manufacturers in financial difficulties, it might be argued whether or not the video game industry is more profitable than many of the “classic” industries.

Gustafsson’s central argument is that academic activity, and in particular economic research, has a tendency to create moral hierarchies of seriousness and usefulness. In a process of self-legitimation (business) research becomes pre-occupied with relevance which often translates into seriousness – automotive research is useful and necessary because it is a *serious* industry, manufacturing *serious* products for *serious* uses in society (“what would happen to our society and economy if every car were to disappear overnight?”). Consequently, it is easier to motivate why opera is worthy of academic activity, while the roller-coaster industry is more challenging (Csarmann 2007). Opera is centuries-old serious art enjoyed by the European upper classes, while roller-coasters have been providing frivolous, impulsive and bodily entertainment for the masses since the 19th century. The core of video games is play and frivolity – the antithesis of seriousness. The French game philosopher Caillois (2001) actually posits
that a game played involuntarily is not a game, entailing that games have to be *fun* (although fun can rarely also be involuntary). How can an industry based on frivolous entertainment, play and fun be considered “useful”? Arguments that posits video games as “useful” in some other way, misses the entire point – *e.g.* by claiming that video games are making better surgeons by improving manual dexterity (Marriott 2005), improving social, educational, emotional or even air pilot combat skills (as claimed by former US president Ronald Reagan, Squire 2002). By stressing unknown/hidden productivity/usefulness, advocates acknowledge that games *must* be useful – they cannot simply exist for the trivial sake of fun – there has to be some other more profound *raison d’être* for playing.

This study does not assume that video games have to be productive, educational or “positive” by any mean – it simply realizes that video games give rise to a global multi-billion dollar industry and that in itself justifies a study. Gustafsson’s argument of seriousness differs from the low vs. high brow argument, where video games are neglected due to low culture status *i.e.* pop culture without any traditional elements of “elevated thoughts” as in fine arts. For instance, in Polish “classical music” is called *muzyka poważna*, the literal translation of which is “serious music”, providing a vivid illustration of the affinity between high-brow culture and the notion of seriousness (in some cultures).

Caves’ perspective is partially based on so-called *contract theory*, which is part of economics affiliated with legal aspects, and elaborates the principal-agent problem caused by asymmetric information transaction environments. As indicated by the subtitle of one of Caves’ most prominent works (Caves 2000) – “contracts between art and commerce” – the cultural industry is where artistic logic is confronted with the logic of (art) commercialisation. Both entities have to cede ground – the artist must adapt creativity to the tastes of the audience, while executives must provide ample creative freedom for artists. These concessions are governed by forms of contracts that stipulate the conditions not only in economic terms, but also artistic. It is where the diametrically different, “soft” and lofty artistic production shares a (partially) common language with economy, marketing and commercialisation. Contract theory acknowledges that it is hard, or rather impossible, to create a *complete contract* since cultural products have extremely complex production. A traditional way to overcome this is *incentive contracts* that connect rewards with the value that has been put in. The challenge is to balance *ex post* incentive rewards (*e.g.* royalties) and the *ex ante* risk premium rewarded (as salaries) – artists cannot work for free as the risk will be too high if the project fails, while overpaid artists have limited interest in the outcome if the risk premium is too big (from a investor point of view).
The principal-agent dilemma and asymmetrical information environments further complicate matters. The principal entity is constituted by the investor/backer, while the agent is the artist. A fundamental problem arises when the principal hands over resources to an agent, who acts according to the principal’s objective – constituted predominantly, in economic theory, by the profit objective (though not always) and other subordinated objectives that specify how to obtain this most efficiently. The objective of the agent differs from the principal’s – this constitutes the fundamental dilemma: how can the principal influence the agent so as to align their interests? The most dysfunctional situation arises when the agent has interests that are fully counterproductive to the objectives of the principal. Classic examples consist of agents enriching themselves at the expense of the principal by corruption, nepotism or something else. High levels of asymmetrical information exist in this situation – the agent is closer to the resources/production/value transformation and can consequently take incongruous decisions unnoticed by the principal. The entire fields of organizational science, management, surveillance, monitoring, cost management, CSR and others, touch upon the issue of the principal-agent dilemma. In a cultural industry setting this dilemma is highly present due to the fact that the principal has limited or no knowledge of how to create the intended art. Asymmetry is occasionally complete: an art gallery owner commissioning an exhibition without knowing what the result will look like. Furthermore, the principal is in many cases, according to romantic myths of artistic creativity, even prevented from interfering in this process since this is considered as impeding the artistic freedom—countless works of fiction/art depict struggles between artist/writer and principal/investor/patron from a freedom of speech/creativity perspective (which is not surprising considering the source).

The opposite is also frequent – with the increased commercialisation, industrialisation and globalisation of some cultural industries, many artists find themselves in situations where artistic freedom is eliminated and the wishes of the investors/“market” are paramount. One could even argue that the game industry/medium was born into such commercial conditions, since the technological/aesthetical development of the medium has been almost completely dominated by commercial forces. Almost all traditional forms of cultural production allude to a past naive era where creativity was unfettered from “the market” and society. The video game medium has limited, or no, similar illusions – possibly the mythical garage-based game designer might be an equivalent, but it is hard to ignore the fact that the game medium has not evolved into a commercialised industry, but rather commercially industrialised into evolution.
Even though the video game industry shows significant similarities with many cultural industries in terms of industry structure and dynamics, it does not automatically qualify as such from a theoretical point of view. In order to more thoroughly verify this tentative proposal an analytical framework based on Caves’ (2002) research will be applied. In his book Caves stipulates seven basic characteristics of the cultural/creative industries, which are all results of culture economics research with the aforementioned insights from contracts theory. Caves’ seven characteristics are as follows:

DEMAND IS UNCERTAIN – Demand for culture/creative products like books, music and films are almost impossible to predict. The problem worsens when costs are sunk, as they usually are in culture industries, and cannot be retrieved or limited. This property is known as the nobody knows property. This is a consequence of the intrinsic information asymmetry in the markets for cultural goods. The demand for cultural products/services is based purely on the ephemeral whims of audience tastes, which is hard, if not impossible, to predict. Many successful, even legendary (Picasso?), artists and companies are based on the ability to swiftly appprehend the currents of cultural taste and produce art accordingly. The global success of Swedish clothing company H&M is credited in large part by the ability to quickly adapt to trends and produce limited batches of fashionable clothing, thus limiting the market risk. It avoids the practice of predicting fashion trends and making risky bets in advance on large production batches. Influential artist/companies (e.g. luxury leather goods producer Louis Vuitton’s classical bags with the iconic “LV” emblem) can actively create trends that feed demand for their products – but they are extremely rare.

CREATIVE WORKERS CARE ABOUT THEIR PRODUCT – Unlike workers in most industries, creative workers invest substantial personal and emotional pride/prestige in the outcome of their production regardless of the economical consequences. It is called the art for art’s sake property, where aesthetics and perspectives on quality and originality of creative workers are considered to be of greater importance than the commercial prospects. It is the artistic equivalent of the Hippocratic Oath in the field of medicine. In terms of contract theory: the objectives of principal and agent are profoundly incongruent and rarely fully align.

SOME CREATIVE PRODUCTS REQUIRE DIVERSE SKILLS – Some, though not all, creative production, requires diverse skilled and specialised workers. For instance a film results from the efforts of many different artists with different skills and aesthetical values. Many non-cultural industries share this property: car manufacturers employ professionals from dozens of dis-
ciplines. Furthermore, it involves a *multiplicative production function*, i.e. every input in the production process must be present and performed at some level of proficiency, which is also known as the *motley crew* property. For instance, if one of the film crew artists fails then the entire film project is brought down.

**Differentiated products** – Creative products are both vertically and horizontally differentiated. Many consumer goods have some type of vertical differentiation – price, packaging, branding and market positioning. The role of branding/PR is partially to provide differentiation that prevents commodisation. In many markets for cultural products consumers and experts/critics sometimes agree on some loosely defined vertically differentiated hierarchy of quality where some products are perceived as being “better” than others: Stanley Kubrick’s films are frequently considered better than Tony Scott’s, and Jimi Hendrix’s music is still mentioned as being unrivalled in its genre. At the same time many cultural markets show signs of being horizontally differentiated – some consumers do enjoy *Harlequin* novels even though critics in many cases consider them to be of deplorable quality. This vertical and horizontal differentiation is known as the *infinite variety* property. It means that cultural products are unique projects – there are no established methods of “objectively” evaluating cultural production. Revenues do not tell the entire story – an artistically successful product can be a financial disaster, and vice-versa. Ironically, many risk-reducing media strategies (such as formatting, genre, stars etc.) actually decrease differentiation – making a horror-genre movie reduces market risk (recognisable format, logic, stars and expectations), but at the same time it limits the differentiation positing it against all other horror films present in the market place.

**Vertically differentiated skills** – Creative workers differ in skill, originality and proficiency and within a creative worker community there is often a consensus of who is and is not on the “A list”. This is called the *A list/B list* property and is a reflection of the infinite variety on the production side of the industry. Experience is of extreme essence in the cultural industries. This reinforces the stratification process – experienced creators become even more experienced and increasingly bankable. A *catch-22* situation arises: experience is required to enter the industry, but it can only be gained *within* the industry. Due to the oversupply of creative workers there are many vertical strata. Many are not able to work full time or even part-time with art production, and this produces “lists” of people who are only partially part of the cultural industries.
**Time is of the Essence** – The *time flies* property, means that time is of the essence when production has commenced and sunk costs rapidly increase. This is a classic characteristic of the cultural industries: large upfront investments during production with cheap reproduction. As a consequence it is important to reduce expenditure by reducing production lead time. There are few alternative ways to recoup investments, except for the market, which applies for every creative/cultural industry (what is the value of an unfinished film script?). Even if during production quality is considered unsatisfactory, the only way to profitability is to invest more by continuing with the marketing and distribution processes. Caves provides examples of how “ten-ton turkeys” can be created, such as Brian de Palma’s *The Bonfire of the Vanities*, which became a “financial disaster” despite early signs of problems during the chaotic production of the film.

**Durable Products and Durable Rents** – Most creative products are durable (*ars longa* property) – e.g. Shakespeare’s poems are still being sold and enjoyed today, as well as more than 70-year-old Charlie Chaplin films, or incomprehensible thousand-year-old cave paintings still captivate. The elusive notion of “culture” provides theoretically infinite economic value – for instance, the thousand-year-old, and publicly available, texts from the Bible generate millions in book sales every year. The durability of cultural goods depends on art/medium, language, popularity, impact on society, author and several other types of factors. Another contributing factor is the separation of production and reproduction. Once the expensive production phase is over, the inexpensive reproduction can be adapted to new technologies and distribution forms – the 1930s recordings of Billie Holiday’s jazz music have been remastered and released in numerous analogue and digital distribution formats and still generates impressive sales eight decades later, as does the music of Chopin written centuries ago.

How does Caves’ culture economics framework of seven characteristics apply to the video game industry? Almost every characteristic is fully applicable on the video game industry as will be elaborated below, thus supporting theoretically the proposition that the video game industry can indeed be considered a cultural industry.

The *nobody knows* property is indeed present in the video game industry. The market for video games is extremely volatile and unpredictable. According to the CEO of a leading Swedish game developer about 75% of all games do not generate a profit or even make it to the market. Of the remaining 25% of the market only a limited few become global hits and sell more than a million copies. According to a recent and erroneously cited study by video game analyst company EEDAR, and subsequent claims in
media (Alexander 2008), only 4% of all games ever make a profit. Furthermore, it was claimed that 60% of all video game development budgets get sunk into reworks and redesigns. These figures were later retracted as they turned out to be based on other research (Laramée 2003) which claimed that only 4% of video games that enter production make significant profit, while only 20% of video games released to the market make a significant profit.

Certain strategies have been developed, or rather imported from other cultural industries, to counter this intrinsic market risk: genres and sequels. Actually, few other creative/cultural industries rely as heavily on these two strategies. It is not uncommon with dozen or more sequels to a successful game title, as proven for instance by the successful RPG franchise Final Fantasy with 28 sequels (Lee 2007). The “eternal cash cow” genre of global game publishers (such as EA) is the sport genre which rather cleverly encapsulates the main themes of market risk reducing strategies during the past two decades: it targets the hardcore 18 to 34-year-old western (white) male who also comprises the hardcore majority of (TV) sport (entertainment) consumers. Sport leagues provide an extremely practical source of content, but also the commercial impetus for yearly sequels and marketing rationale for upgrades. Ingeniously, the advertising/sponsoring in sport leagues can be re-applied in the virtual in-game sport world, creating a new source of revenues for the developers/publishers. From a production perspective, sports games’ yearly upgrades mean tight deadlines (before/during the season), but also that much game technology and in-game content can be recycled, saving considerable development costs for the developer/publisher. Since it first release in 1988, the American football game NFL Madden has been updated with 22 sequels and has provided EA with an unprecedented cash cow that has driven its revenues and its expansion into the world’s biggest video game publisher.

Admittedly there is an element of art for art’s sake in the video game industry, as illustrated by the following quote with the usage of the notion of “killing your darlings” often present in discussions regarding creative/cultural activities:

This is a rather unfair and sweeping criticism, but I actually believe that you could say that many developers are very pleased when they find a way to impress another developer making similar games. And then they want to continue doing that thing, even if it doesn’t enhance the game experience. I think you could say that there are examples of games where you could “kill some darlings” and improve the game.

Former Swedish game publisher executive (2006-03-01)
Game developers rely heavily on the opinion of other developers within their community, and the fact that many video games could have been improved if these art for art’s sake “darlings” could be eliminated. There are numerous examples of games that have been overshadowed by technological passion, and not commercial viability, resulting in unsuccessful, and often not even entertaining, video game titles. However, the art for art’s sake property is expressed slightly differently from other cultural industries. Video games are the result of highly advanced software and hardware technologies. Technology is, metaphorically speaking, the brush of video game artists with much of the “art” expressed in terms of technology. Of course, video games do also contain an element of “traditional art” partially detached from techno-aesthetics, in the form of bit maps, 3D design, animation, character design, story, FMVs, music, sounds etc.

Creating a technologically sophisticated game, that impresses other developers and not the consumers, is sometimes the unspoken agenda of many developers, as witnessed by the following quote:

We’re becoming almost experts in this field [genre]. It’s almost like we’re competing mostly with the other games [in the genre]. We’re sort of looking there. How do we become better, break all the others, how do we come up with something better? That’s a pretty fun game, all the time. Every time someone comes up with something new then you steal everything that all the rest have done that is good, and then try to add something new that we’d like and then finally release it. And then the next developer makes a game and they examine our game and try: “maybe we could add something to that”.

Game artist at major Swedish game developer (2004-02-16)

Game development becomes a contest within the developer community where end-user/critical acclaim is of secondary importance. Furthermore, the game artist describes the particular dynamics of this competitive process: plagiarism is adamant and not frowned upon but rather seen as way of evolving the medium. This dynamic also contributes to the impetus of the sequilisation and genre practices, where new titles are seen as artistic responses to previous video games in a similar genre. Video game investor/publishers appreciate the market-risk reducing benefits of sequels and genre-titles, while the video game developers enjoy the artistic intra-community developer dialogue of art for art’s sake.

Video game development is the archetypical example of the motley crew property. Gone are the days when a single person could create a successful video game – nowadays a standard development team employs around 20 to 30 people for 18–24 months to perform different specialized functions such as programmer, artist, designer, music/sound technician, producer,
tester and numerous other functions. The motley crew property defines, in a nutshell, the extremely challenging, yet fascinating, property of the video game medium and its creation: how do you create a product that is dependent on so many seemingly incompatible skills and competencies? How is it possible to create dynamic art that evokes ephemeral and effervescent feelings of amazement, beauty, curiosity and fascination from one of the most esoteric and mathematically complex technologies in the world? How is this organized and managed? These are issues that deserve significantly more research than a separate study – probably several. Suffice it to say, they are beyond the scope of this study.

Compared to other highly collaborative cultural industries the game development process is not highly sequential due to the mechanical/systematic construction of software, its development can be modularised, compartmentalised into functions, processes and features. In game development sound, graphics, effects, physics/simulation, artificial intelligence, animation, game mechanics and others can be separated into subsystems (“engines”) that interact within the framework of the video game software (“game engine”). The actual content of the video game: characters, animations, bitmaps, environment, story and game rules can also be developed separately. Outsourcing of these subsystems and task is frequent in the video game industry. However, perfect project planning only exists in theory. Most complex projecting involves delays, improvisation, revisions and rejections of certain project elements. According to a study by game industry analysts 60% of development budgets get sunk into reworks and redesigns, i.e. project delays (Alexander 2008).

The infinite variety property exists in the game industry since “market leading” products are not easily identified or even possible to determine. Evidently, a number of franchises, such as certain sport games, FPS and others, are “successful” in terms of sales, revenues and profitability – but they can be considered to be inferior in terms of entertainment, gameplay and aesthetics. There are no “industry standards” or “objective” criteria, such as price/performance ratio or similar, that could be used for ranking games in terms of quality or any other decisive norm among consumers. At the same time video games are extremely “hit driven” indicating some sort of differentiating forces. There is an inherent paradox in the video game market: every video game title, and its production, represents a “unique product”, yet there is a plethora of confusingly similar video game titles. The reason behind this phenomenon is the balance act of optimising the content/marketing strategy: a new title cannot be too unique (too hard to market), but the title cannot be too generic as this will turn it into a commodity.
One successful, but not perfect, strategy is formatting/genres. There are several dimensions to game genre formatting: aesthetic, marketing/communication, technology and business-aspects. Video development is partially driven by incremental and communal efforts as elaborated in the previous quote by the game artist. Marketing/communication user is facilitated if the groundwork is done, by previous genre titles, and a common framework of video game aesthetical values established. Moreover, there are also technological considerations: common software components, i.e. the game engine, can be partially or fully re-used, thus saving substantial development resources. Subsequently, there is an economic/business rationale for genre formatting – genres save resources during development, marketing and communication/advertising. The disadvantages of genres are evident: competition and communal artistic control. The genre is maintained and developed by a fragile coalition of competitors that “communicate” with each new release. The successful balance of the genre can easily be overthrown by mistakes of others – many genre become overcrowded and bloated with generic genre content. Hence, the infinite variety property is supported, with a predominantly “hit-driven” market where smash-hits are “superior” in terms of sales, but lack of consensus regarding critical factors driving these “superior” successes. Genre formatting is used to counter the effects of the infinite variety property, but this strategy is precarious as this leads to increased competition and reliance on competitors.

There is a clear, vertically differentiated hierarchy of game developers capable of creating successful games, so-called AAA games. As game development related technology increases in complexity and pricing, so does the distinct difference between “A-list” developers and less experienced “B-list” developers wishing to enter into the “big league”. These experienced A-list developers enjoy, compared to the vast majority of B-list developers, completely different possibilities in terms of game publisher trust, financing and recognition, thus supporting the A list/B list property:

We develop games in the top tier, “AAA” games i.e. the top five percent where publishers make a lot of demands. [...] Our staff is the absolutely most importing thing we’ve got. We’ve got some of the best “chaps” in the industry. It’s important that we’re a small company with a “team spirit”. Four to five simultaneous development projects are possible. A top developer has 20 to 25 persons per team. Each team acts as a small company. It takes time to create such a team. There are developers of smaller games – “B games” – that make 20 games a year with 40 persons. There are a number of different classes of developers, but that’s an entirely separate story.

CEO of major Swedish game developer (2002-08-05)
The CEO concludes by stating that there are several classes of video game developers corroborating the A-list/B-list property of cultural industries. *Time is indeed of the essence* in the game industry where average development lead times approach 18–24 months. The situation is further complicated by the fact that many games are “time sensitive” i.e. whose attractiveness is limited by time, e.g. movie-games or sport games. They are usually launched to capitalise on famous IPs and to enjoy marketing synergies with cross-media promotions/advertising campaigns. A game developer executive elaborates this fact:

> It’s a hit-driven market. They [publishers] gladly pay much for a good IP. They also pay well to developers that can deliver good quality on time. Time is crucial. If a video game is connected with a movie premiere this is extremely important.

CEO of major Swedish game developer (2002-08-05)

The CEO explains how time, quality and good IPs (Intellectual Property) become the most important factors when publishers approach game developers.

Superficially the *ars longa* feature is not supported by the game industry. The video game industry is characterised by an extremely fast-paced marketplace where most titles are given 4–6 months to generate revenues at full price and then phased out at discount pricing an additional 6 months. A majority of video games that are released generate nearly 85% of their lifetime sales in the first year of availability, after which these games are generally replaced by new versions. According to data from research company NPD genre-formatted video games, such as EA’s sport titles, generate more than half of their lifetime sales within first three months at retail (Dobson 2007). The difference compared to other cultural industries, and in particular mass media, is the lack of alternative revenue windows or distribution channels. Video games can only generate revenues at direct retail – video games cannot create revenues in other ways and channels, with exception from video game rentals – a business model dominated by the retail sector.

However, there are certain elements of video game content that include the *ars longa* property – namely the *IPRs* (Intellectual Property Rights). In the video game industry IP is a fuzzy notion encompassing notions of trademark, brand, game concept and image. IPs have grown in importance to the point of becoming the fundamental resource of the industry, according to many industry professionals. The rationale is straightforward: good IPs can drive tremendous game sales of numerous titles, on different platforms and over long periods of time, as is e.g. the case of Mario – a 20+ year-old IP created by Nintendo, which has produced 72 titles, on 16 differ-
ent types of game platforms (MobyGames 2005) generating sales in the order of 182 million copies (Kohler 2005). The games still revolve around the fairy-tale like action adventures of the colourful Mario-character jumping from one plateau to another, within the so-called platform genre. With the introduction of the Nintendo Wii, a feature called Virtual Console was launched, which allows the owner to download and play video game titles released on past consoles such as nes, Super nes, and Nintendo 64, as well as non-Nintendo game consoles such as Sega’s Master System and Mega Drive/Genesis, nes’s TurboGrafx-16 and TurboGrafx-cd, snk’s Neo Geo aes, Commodore 64 (Europe only) and msx (Japan only). Its success indicates that old video games are not necessarily without economic or gameplay value.

This trend towards so-called retrogaming is based on the hardcore target group from the original “Nintendo generation”. The Nintendo generation is the lucrative hardcore gamer segment that still drives much of the agenda for the industry. Within this market segment there are still those who cherish the video games from their childhood – “the golden age of video games” (Kent 2001). They enjoy replaying their memories, but also the confined design and technological restrictions of that age that resulted in ingeniously minimalistic yet fascinating video game titles that captured the minds of a young generation of gamers across the globe. Retrogamers play on decades old hardware or use software emulators which are programs that run on PCs/Macs/mobile phones and imitate (“emulate”) the old console hardware, but require a software copy of the video game (“ROM images”) scanned from the original game media giving rise to legal disputes since the distribution of such copies, with the advent of the Internet, has become adamant and is considered as illegal. Games from practically all imaginable “classic” video game console are available – even arcade games (through the MAME project) – driven by a passionate global community.

The retrogaming trend highlights another dimension of the ars longa property: the interwoven role of technology in the video game medium. An illustrative question: is the original 1985 version of the Tetris software for the Russian computer Электроника 60 (Elektronika 60) (by researcher Aleksei Pazhitnov), the same as any of the dozen of version for other platforms (Xbox 360, iPhone etc.)? What has to be compared – software bits, game graphics, game rules, ownership? This ties into the core of the ars longa argument – what ars is longa? In a strictly technological sense each new port is a new edition, thus breaking with its predecessor – the bits between versions do not align or only partially. This could be abstracted: the actual software does not matter, but only its functionality, and transformed into a question of rules – do all Tetris versions adhere to the
same rules? This game rule/concept perspective of video games is closest to the notion described by Caves, where cultural industry output is relatively independent from (high) technology. A film remains the same regardless if it is produced on 35mm film, and transferred to new medium such as DVD, TV broadcasting (NTSC, PAL, SECAM etc), Blu-Ray, digital formats (HDTV, MPEG2–4). This “translation” contributes to the ars longa factor of film – every new format continues collecting revenues from their “durable rents” (in Caves’ words). Consequently, the most similar way to compare video games would be to disregard from technological “format” and focus on what they share in common: their game rules.

However, can a game be abstracted to its rules and nothing more? Can we ignore the semiotical effects of graphics, sounds and input methods and only focus on rules? In the case of Tetris it might be possible, but is it possible to do so in one of the most ported video games of all time Doom (id Software 1993), which is an intricate three-dimensional graphics FPS (First Person Shooter), that has been ported to 7 operating systems and 9 consoles, each with different graphics, resolution, speed, and in some cases even features? Do they provide the same type of experience for the gamer/reader? Probably, no. This makes the application of the ars longa property the most questionable among Caves’ seven cultural industries properties. Nonetheless, the empirical examples of evergreen titles such as Mario, Tetris, Doom (and countless other), Virtual Console and retrogaming un-mistakably demonstrate the durability of certain aspects of video game content, hence supporting the ars longa argument in some form.

**IMPLICATIONS OF CULTURAL INDUSTRIES PERSPECTIVE**

As the preceding analysis has proven, the video game industry shares all the properties of cultural/creative industries from a culture economics point of view. So what are the implications for the purpose of this study? The cultural industries theoretical framework outlines general characteristics of this type of industries, and how these characteristics affect the economic rationale and organizational dynamics driven by creative and cultural activity.

One of the most decisive characteristics, influencing many other characteristics, is caused by the nobody knows and the infinite variety principles. This uncertainty affects the entire industry structure, dynamics and division of activities among industry entities due to the preventive strategies employed to manage this inherent element of instability. These strategies, further complicated by the presence of sunken costs as framed by the time flies property, mainly concern the pivotal question of financing game
development, and the economies of scale achieved by financial risk reduction through the separation and pooling of this function into publisher activity. This process thus becomes the overarching organizing principle of the entire industry: it distributes the power in the industry; it defines the relationships among the entities of the industry; it regulates the distribution of revenues and profits according to very strict rules, and it defines the business logic of all industry segments – basically it generates the entire value chain of the industry. In the case of the video game industry (and cultural industries in general) the financial function is on an equal footing with the actual production function i.e. creative symbol production.

The art for art’s sake, motley crue and the A list/B list features all directly affect the production process or symbol creation (Hesmondhalgh 2002) i.e. the programming of video games. The art for art’s sake summarises the elemental tension within cultural industries – art vs. commerce. Translated into the reality of the game industry it results in opposing objectives of creators and investors – between “nerds” and “suits”, between programmers and producers, between developers and publishers. Game developers’ passion for creating “good games” is driven by several objectives, profitability being often one, but rarely the only, imperative. Another tension is between scientific high technology and artistic sensibility/aesthetics. This divide, caused by the motley crue property, is occasionally even visible within developer studios where tensions arise between the strictly technological developers and the more visually oriented staff dealing with graphics, animation and game art. These two domains converge and become a unified “art of video games” – game design. The primary objective thus becomes to evolve this game art for the sake of its own, and with all other objectives being of secondary importance. The few who evolve their art become differentiated and experience in comparison with peers in the developer community giving rise to the A-list/B-list feature.

The remaining characteristics of time flies and ars longa partially affect the production process, but mainly financial and marketing aspects of game publishers. These two properties define the relationship between time and economic market value of video games, and subsequently explain many publisher strategies. These properties help to explain publisher IPR strategies – IPs through ars longa give the possibility to obtain durable rents. The video game ars has extended its longevity with the evolution of industry and conceptual development. From short-lived (sometimes sloppy) one-man titles of the early 1980s to today’s impeccable infinitely upgraded mega-AAA productions with complex stories and quasi-photorealistic graphics produced by tens, sometimes hundreds, of game developers – the perspective on IPRs and their durable rents have shifted dramatically. Time flies in the video game industry when production has commenced
and sunk costs rapidly increase. A strategy employed by game publishers to manage the effect of the time flies property is the so-called milestone financing setup, which reduces the development risk, which due to the time flies property would otherwise increase as long as the production is in progress.

Consequently, this study concludes that video games are indeed part of the general sphere of cultural industries as defined by Hesmondhalgh and Caves. These two cultural industry/economics frameworks outline and explain pivotal dimensions of the industrial dynamics and economic mechanisms of the video games industry. However, what the cultural industries perspective totally omits is the very core of the phenomenon being studied: namely the video games (medium)! The main focus is on market dynamics (nobody knows, infinite variety and partially time flies and ars longa) and organizational production factors (art for art’s sake, motley crue and the A list/B list) – the video game as such is invisible or, at best, treated as an impenetrable “black box” of video game magic. However, this black box contains components that create the elementary tensions of video game/cultural industries: art vs. commerce, or in this case, technology/game design vs. commerce. It is a fundamental belief of this study that the video game content – technology and game play as such – affect consumers and the market, but also game production. To make an analogy: manufacturing airplanes and manufacturing automobiles is not the same, despite the fact that both are vehicles. The fundamental characteristics – one flies in the sky, the other drives on roads – create different markets, uses and customers, but also different organizations, technologies and production requirements (although historically car/airplane manufacturers such as Swedish SAAB or German Daimler/Mercedes Benz, were considered technologically and organizationally interlinked).

What this study basically proposes is to go further, dig deeper and explain the inner workings of this black box called the video game and demonstrate how its contents are highly crucial for the understanding of the entire industry. This does not entail the investigation of purely technological aspects – these kind of aspects are covered by numerous perspectives (Bates 2004; Fullerton, Hoffman, & Swain 2004; Saltzman 1999). They provide broad insights about the organization of game technological production but that do not necessarily reflect what a video game is or what its fundamental elements are.

In this and previous chapters numerous questions have been raised that cannot be rewardingly answered by established cultural industries theoretical frameworks. These unanswered questions are not peripheral but cut to the core of the video game medium, its design/development/production and consumption/play/contextualisation. These questions can be divided
into three major areas of production, medium and consumption forming an underlying triangle for the analysis of the video game industry. Questions that have arisen are for instance:

**Production**

- Does the creation of an interactive medium require new types of creative/cultural skills?
- Is the position of the video game author similar to traditional and linear media forms, or does “interactive authorship” entail a new era in text creation?
- Does the traditional communicational relationship between author and reader remain intact in the case of video games?
- Does interactivity, which empowers the reader, threaten or even imply the death of the author since the reader/gamer is per definition in charge of the video game experience?
- Is interactive authorship a type of “co-authorship” with the reader/gamer?
- Is it possible to combine successfully other cultural industries, more specifically music and film industries, with the video game production process?

**Medium**

- What role does the diffuse notion of “interactivity” play in the video game medium?
- Can the video game medium be considered a “symbolic text” in a cultural industries sense?
- Do video games constitute texts from a literary/philological perspective?
- What is the role of technology, and more particularly software technology?
- Is the video game medium a story-telling, *i.e.* narrative medium?
- If so, what is an interactive narrative?
- Will video games evolve into a form of interactive cinema?
- What is the role of play and game in video games?
- Are play and story-telling/narratives compatible notions?
• Do video games simulate or represent reality?

CONSUMPTION

• Does interactive entertainment media require a new type of consumption that radically departs from other types of cultural consumption?

• Has the interactive reader/gamer reclaimed the superior position of the author in the communication process, creating a more democratic medium?

• How can the process of “reading” a video game be described?

These questions cannot be satisfyingly answered by the cultural industries/economics frameworks elaborated previously. One might erroneously argue that these issues are of limited or no interest for the actual video game industry. Furthermore, it might be worth stressing that applied video game industry research is primarily concerned with aspects such as industry data, distribution/sales statistics, market leaders, target audiences, market segmentation, key success factors and other pragmatic business-related hands-on type of aspects. This type of analysis is indeed crucially needed. Game publishers, developer, distributors and retailers all require pragmatic advice with a short to medium-long perspective. However, these aforementioned questions are fundamental aspects that concern the very foundation of the video game industry and by doing so elucidate pivotal dimensions in a strategic long-term industrial perspective. By examining and answering these questions, this study will illustrate their relevance for the development of the video game industry and how these insights might be used for making strategic decisions in the future.
PART II
THE MEDIUM
GAMES AS GAMES

PART 1 of this study analysed the creation of video games – how a video game is created from an idea, through different production configurations, into the materialisation stage and the actual production process, to finally manufacturing, distribution and retailing. Parallel to this process is the overarching publishing process that contributes with financing and marketing throughout the entire value chain. Game production is, however, no Fordist production line, but rather a Tayloristic nightmare with extremely project-based and tailored (pardon the pun) production processes that change radically from one product to the other, and are hard to streamline and standardise. As an explanation model for the game industry, and as far as this study is concerned, the cultural industries theoretical frameworks have been analysed and applied. The conclusions is that they provide valuable insights – a foundation – for understanding the business-dimension of the game industry, but that the perspective ignores and black boxes the cultural products/symbols at its core i.e. the video game medium. The conclusion was to dig deeper and to find perspectives that could shed light on the game medium and fill in the missing puzzle pieces of this study.

The “dig deeper theory” that is needed can be found within game studies, which is dedicated to all things related to video games. It actually lacks any type of cohesive theoretical frame of reference except its dedication to the subject of video games: cyberethnographers share conferences with semioticians, cybersociologists, game designers, gender theorists, literary theorists, game programmers, graphics technology researchers and hardware engineers – they all want to analyse video games. However, some theories have become more salient and influential than others – those can be found predominantly in literary theory perspectives on the video game medium. Seemingly niched at first glance, the relevance of these theories is surprisingly broad since they attempt to define the very issue of interpretation and “essence” of the video game medium.

Within literary theoretical approaches to video games, the most dominant perspectives are narratology and ludology. Generally speaking narratology emphasises the narrative and representational dimension of the me-
dium, while ludology focuses on the game as such and on the simulative
dimension. These perspectives will be analysed in Part II of this study. This
analysis resembles a literature review, but consists of critical and independ-
et theoretical perspectives on the issues raised by these two theories.

First up is ludology, whose origin is the works and research of Espen
Aarseth. His theories represent the most theoretically sophisticated and
nuanced perspectives within this school of thought. Seven subchapters will
be dedicated to the theories of ludology – primarily Espen Aarseth’s, but
also those of Gonzalo Frasca, Jesper Juul and Markku Eskelinen. Aarseth
defines the video game medium as a dynamic cyborg textual machine as part
of a larger group, or perspective on textuality, ergodic texts (that require
extranoematical effort i.e. “input” to read). His focus is on the internal
organization of the text and the mechanisms that produce dynamic text,
instead of superficial dichotomies between electronic and paper text. Simi-
larly the concept of interactivity is questioned and replaced by dimensions
in a bigger typological framework that analyse all types of (dynamic) tex-
tual communication. Aarseth’s cybertext theory has also been expanded to
include images or graphics, beyond the initial text/letter-centric cybertext.
The aim of the ludological project is to deconstruct and invalidate the no-
tion of interactive narratives as explanation for the video game medium,
and consequently replace it with notions of aporia/epiphany and introduce
the intrigue as an alternative explanation for story-based video games.

This chapter will answer the following major topics (and many more
besides): what is ludology? What are ergodic texts and cybertexts? Is
electronic text communication intrinsically different from traditional
paper-based text communication? What is interactivity? What are the
components of the “internal organization of text” machines? Does text
communication involve images, graphics and three-dimensional games?
What about semiotic game interpretations? What is wrong with the nar-
native perspective on the video game medium?
MATERIALITY OF SOFTWARE

At its core Aarseth’s theoretical perspective aims to represent video games, or ergodic literature, as materially as possible, which might be a surprising notion for some. “Material” and “digital” are in the age of Internet and “cyber-everything” (cyberspace, cyberdating, cyberculture, cybersex, cyberterrorism etc) almost seen as antonyms and dichotomies. “Digital” symbolises the virtual, ephemeral, intangible, post-material and omni-present ghost that can travel across the globe instantly, or at least as fast as our broadband connections allow. “Material” on the other hand is something that we can grasp with our hands – like heavy clay pots, mouldy cabbage or scratchy old-timer vinyl records – it is “real”, fairly immobile and seemingly detached by an unbridgeable chasm from any electronic phantoms or similar varieties. Electrons that make up electronics are infinitesimally small, but are nonetheless material. Aarseth’s focus on the “material” is a reminder that software is in the end nothing more (or less) than an astronomical, yet finite, number of 0s and 1s organized into complex and dynamical mathematical structures inside electronic hardware. The occasionally mind-blowing capabilities of these structures sometimes overshadow our understanding of their nature, giving rise to excessive abstractions and substantial mystification regarding their inner workings. These software electrons are after all equally material as mouldy cabbage, and not some enigmatic electronic demon hidden somewhere in the hardware of our computers, running amok on the global networks of the Internet.

Aarseth puts forth the material dimension of software to incorporate a techno-centric perspective into the discourse of literary theory, which is his original domain. Many of the theorists he criticises (Bolter 1991; Landow 1992; Landow 1994; Moulthrop 1994) lack a comprehensive understanding of the technology involved. If the object being studied is the technology itself, in this case the medium of video games, it seems prudent to appreciate some of its internal dimensions instead of resorting to “black-boxing” – a process that yields contradictory consequences. On the one hand (software) technology and its complexity is being glorified creating an undeserved aura of techno-mysticism, while on the other giving those
knowledgeable of its liturgy a position of disproportionate power and influence over those less initiated.

Hence, Aarseth’s project is to move the attention to the inner-workings of the technology and medium of video games that are particularly relevant for the understanding of its uses and interpretations. Aarseth wants to shift the perspective on video games (and similar media forms) from such claims as “extreme form of post-modern art” (Hutcheson 1971) or “embodiment of poststructuralist concept of text” (Bolter 1991; Landow 1992) to more basic discussions regarding the “mechanical organization” of the medium. Aarseth sees video games as “mechanical devices” that produce texts, which ties back to the materiality of software. Instead of approaching video games as e.g. cybersemiotic generators of signifiers (Bolter 1991), interactive narratives (Murray 1997), interactive fantasy systems (Laurel 1993), open works (Umberto Eco’s seminal concept) or in general as manifestations of post-modern and poststructuralist concepts, Aarseth prefers to present an alternative perspective focusing on the mechanical and machine-like dimensions of software and video games in particular.

SOFTWARE: FROM BITS TO MACHINES

Software is constituted by 0s and 1s, which are stored using different data storage technologies. Early versions consisted of so-called punch cards. The data storage technologies of today are principally based on the same premises. Data is no longer visible because it is stored as magnetic charges or as states of millions of microscopic semiconductors. The amount of data is also no longer conceivable ranging in the billions of binary positions. The link between this foundation level of primitive bits and the impressive level of for example explosive three-dimensional graphics of modern video games might seem perplexing and abstract, giving rise to much of the aforementioned techno-mysticism. Software is a complex structure of layer upon layer of words, data, algorithms and functions that constitute a machine – not metaphorically speaking, but literally a machine as material, but perhaps not as tangible, as the aforementioned mouldy cabbage. The elaborate functions, instructions and systems created with high-level language are translated layer by layer into more basic functions that finally reach the transistors in the hardware that only speak the binary language of 0 and 1 – it is a machine.

Definitions of machine abound though. Depending on types, definitions focus on the mechanical processes inside the machine, which can be both material and immaterial. These mechanical processes are often highly systematic and separated functions that co-operate. Andrew Grove, the
co-founder of the world’s largest semiconductor company *Intel* claims that “Silicon is frozen software” (Heilemann 2000) where silicon is a reference to the processors (CPUs) produced by Intel. He stresses the fact that all software programs can be transformed (“frozen”) into a physical semiconductor device – a chip. This could be performed by taking the binary code and then mapping it to a purpose-built system of semiconductors – creating an integrated circuit/chip – that provides exactly the same functionality as the software. Intel’s processors are “frozen software” and vice-versa. This clearly shows the material connection between software and electronics hardware. Simply put: video games are not mystical demons of technology or “interactive fantasy systems”, but highly complex material machine mechanisms.

**Cybertext: Cyborg Text Machines**

The occasionally stunning capabilities of software should not cloud and replace the interpretations of its dynamics. This slightly esoteric and technologically complicated realisation resides at the core of Aarseth’s theoretical concept/perspective named *cybertext*:

As the *cyber* prefix indicates, the text is seen as a machine – not metaphorically but as a mechanical device for the production and consumption of verbal signs.

(Aarseth 1997, p. 21)

Cybertexts (*i.e.* video games among others) are in the eyes of Aarseth literally mechanical devices for the production of signs. The concept of cybertext:

[…] focuses on the mechanical organization of the text, by positing the intricacies of the medium as an integral part of the literary exchange.

(Ibid., p. 1)

The mechanical organization of the machine is the text and medium, making the internal dynamics and design of software an integral part of the video game medium. This characteristic is represented by the prefix *cyber*, originating from the field of cybernetics, which deals with communication and control of feedback systems, usually machines but also organizations and living organisms. Another meaning of the Aarseth’s cyber prefix is inspired by the influential work of Donna Harraway’s *A Cyborg Manifesto* (1991). Harraway sees the cyborg, *i.e.* a *cybernetic (human)* organism, as
an ironic way to emancipate the human body from gender, feminism and politics:

The cyborg is a creature in a post-gender world; it has no truck with bisexuality, pre-oedipal symbiosis, unalienated labour, or other seductions to organic wholeness through a final appropriation of all the powers of the parts into a higher unity. In a sense, the cyborg has no origin story in the Western sense – a ‘final’ irony since the cyborg is also the awful apocalyptic telos of the “West’s” escalating dominations of abstract individuation, an ultimate self untied at last from all dependency, a man in space.

(Haraway 1991)

Haraway’s theory attempts to blur the boundaries between man and machine, and then responsibly create new boundaries which are emancipated from current suppressive (bodily) categorisations. The cyborg, according to Harraway, is created by two problematic boundaries: between animals and humans, and between automatons (self-controlled and self-governing machines) and organisms. The cyborg is born in the interface between automaton and organism. Harraway claims that this tension between organism and machine is a significant metaphor. Becoming cyborgs allows us to challenge boundaries of Western society, such as self/other, soul/body and male/female and further emancipation and questioning of other dichotomies.

If video games (software) are understood as text machines (as argued previously), then the operator and medium also become part of the literary exchange. The textual machine produces text, which is displayed by the (physical) medium, and used by the operator. The process of reading video game “texts” involves the medium and the operators in ways, which traditional media forms or texts do not require. Video games are played – i.e. used in an “interactive” process. According to Aarseth the video game thus becomes a symbiosis between the text machine and the reader/operator/player/user, consequently implying the cyborg perspective – a human co-opting a machine/automaton into its body.
DEFINING THE FIELD:
ERGODIC TEXTS

INVESTIGATING video games from a literary perspective involves assuming certain axiomatic positions in the polemics within new/electronic media studies. Theses matters often revolve around issues such as: relationship between author, text and reader; position of author and reader; the notions of interactivity, non-linearity and narrative structures, and finally the role of the physical medium i.e. electronic vs. paper texts. Before these fundamental issues can be elaborated it makes sense to define the field of study. It is not a question of defining video games as such, which is an assignment for later, but rather defining what type of phenomenon is being analysed. Partially this constitutes a recursive dilemma as field of study and object of study are dependent on each other’s definitions in a recursive manner.

The textual phenomena studied by Aarseth are texts which involve work from the part of the reader, and are hence called ergodic texts, stemming from the Greek words *ergon* and *hodos* meaning “work” and “path”. All texts require some type of “work” – eye movements, mental interpretation and the occasional turning of pages in the case of paper codex. However, if this type of basic work is assumed to be unavoidable, then “work” involves activities beyond these – extranoematic work to use Aarseth’s terminology referring to a process that occurs outside of the boundaries of human thought. This could be assumed to constitute the core characteristic of video games – the notion of “interactivity” comes inevitably to mind, but as will be discussed later this concept lacks stringent definition and is a less rewarding concept. There is no denying that video games are the embodiment of the “interactive medium” – the possibility and requirement of active involvment, and work, from part of the reader/player in relation to a dynamic text, is the very essence and uniqueness of this medium. This insight also violently cuts to the core of the polemics of literature theory, as it affects the position of the reader, text and consequently medium and theories regarding narratives as illustrated by the following quote:
The cybertext reader, on the other hand, is not safe, and therefore, it can be argued, she is not a reader. The cybertext puts its would-be reader at risk: the risk of rejection. The effort and energy demanded by the cybertext of its reader raise the stakes of interpretation to those of intervention. Trying to know a cybertext is an investment of personal improvisation that can result in either intimacy or failure. The tensions at work in a cybertext, while not incompatible with those of narrative desire, are also something more: a struggle not merely for interpretative insight but also for narrative control: “I want this text to tell my story; the story that could not be without me.”

(Aarseth 1997, p. 4)

The extranoematic aspects of video games (cybertexts) alter many dimensions: the position of the reader is questioned, almost invalidated. Notions of narratives also become highly contended as the reader assumes interpretative insight but also narrative control in the literary exchange of video game reading/playing. Attention is turned towards the validity of traditional theories of text in the case of video games, as will be elaborated later.

If ergodic texts are defined by their extranoematic property, this definition must include several types of physical media. Aarseth clarifies forcefully that his study of cybertext and ergodic literature is not only limited to computer-driven (or “electronic”) textuality – the study instead embraces any type of media.

EXAMPLES OF ERGODIC TEXTS

In Cybertext – Perspectives on Ergodic Literature (1997) Aarseth exemplifies the notion of ergodic literature three large text categories: paper-based, digital and “experimental” texts. To highlight a few: I Ching is a ca. 3000-year-old text/game believed to contain oracular wisdom; Raymond Queneau’s Cent mille milliards de poèmes is a book containing lines of texts which can be folded to create one hundred thousand billions of possible poems; Vladimir Nabokov’s Pale Fire is a poem where readers skip between the poem and their annotations; several digital texts such as video games, hypertext novels, conversation programs, MUDs (Multi User Dungeons) and prose generator are analysed, and finally some (experimental) texts which are projected by LED signs (as part of an art installation), or modified by readers via the World Wide Web, and electronic poems which can only be read once on a computer screen (William Gibson’s encrypted poem Agrippa).

It might seem surprising to classify some of these examples as belonging to the same group as video games, e.g. the 3000-year-old I Ching (or Book of Changes) symbolic system of texts that are used for interpreting.
cosmology, divinations and philosophy of Ancient China. A randomising agent, usually coins or yarrow stalks (but also rice grains or cracks on turtle shells), is used to determine so-called hexagrams and then a text associated with that hexagram is looked up in the book, producing 4096 possible texts. The relation between video games and I Ching might seem far-fetched, considering differences in physical medium, text exploration possibilities and interaction speed. However, from an ergodic literature perspective it is a valid comparison: it constitutes a dynamic text machine requiring extranoematic work from part of the reader, as is the case of video games.

Another example, Raymond Queneau’s remarkable Cent mille milliards de poèmes, provides further perspectives on ergodic texts. The text consists of a poem with 14 lines of text, which can be manipulated, like in heads-bodies-and-legs-books (the children’s books genre). This text system allows for the generation of $10^{14}$ unique poems. Unlike the I Ching there is no randomising agent – all the literary decisions are taken by the reader but both are paper-based and require no electronics (even though such versions of Queneau’s poem do exist e.g. Rowe 2007).

HYPERTEXTS AND OTHER INNOVATIVE TEXTS

Several digital ergodic texts are analysed in Aarseth’s study: adventure games, hypertext novels, conversations programs, prose generator and multi-user adventure games (MUDs). All have text-based interfaces, i.e. all user–computer interaction is performed by means of text commands/messages on computer screen with limited or no graphics. Hypertext novels is a new literary medium/genre that has received considerable recognition among literary and new media theorists – one might even claim that it receives excessive attention considering the amount of mainstream enthusiasm (or rather the lack thereof). The exuberant academic excitement concerns what some claim to be the paradigm-shifting properties of this new electronic literature form where the reader navigates a text (usually on a computer screen) by reading text and choosing (hyper)links within the text, which takes the reader to a certain node in a network of nodes/texts, exploring different text paths through a uni- or multicursal labyrinth created by the author. Links are static but can also be dynamic – based on certain conditions or pure randomisation creating forking paths through a dynamic labyrinth. Usually, though not compulsory, there is a culminating ending to the exploratory quest – reaching the metaphorical centre of the labyrinth and the “end” of the hypertext.
This type of (cyber)text is considered revolutionary by many scholars. Most focus is on the changing/empowered role of the reader. The reader is regarded as a wreader (Landow 1992) – writing and reading simultaneously the text in a form of co-authorship where the reader can read in a chosen sequence, rather than the way the author imagined it, hence transferring the creation of the text to the reader. The user/reader is emancipated from the shackles of author hegemony of traditional text (Rosenberg 1994) – the author obviously being dead. Hypertext transforms itself to the “embodiment” of the poststructuralist concept of text and becomes “vindication of postmodernist theory” (Bolter 1991). Others associate hypertext with the Barthesian notion of *tmesis* (more or less skipping) where the fragmentary reading of hypertext by means of hyperlinks resembles the process of *tmesis* skipping. These claims will be scrutinised later, but suffice to say some of the claims are occasionally more focused on technological visions and aspirations than on the media, technology and usage. Or as Aarseth puts it comparing hypertext literature to adventure games:

The much younger genre of hypertext literature has been much more successful in this respect, for several reasons: the eloquent way in which their practitioners and commentators have associated them with the theoretical vogue of postmodernism and poststructuralism; their more “serious” written content; and most of all, their discourse format, which is clearly recognizable as experimental literature, which is more commodifiable in university literature departments than game programs and clearly akin to already canonized modernist and postmodernist texts.

(Aarseth 1997, p. 109)

The hypertext novels included in Aarseth’s study consist of the noted *Afternoon* by Michael Joyce (1990) and *Victory Garden* by Stuart Moulthrop (1991).

Other digital texts included in the study are conversation programs, a prose generator and multi-user adventure games (MUDs). Conversation programs, e.g. *ELIZA*, are digital texts where the user discusses various topics with a program by asking and answering questions with a computer keyboard. *ELIZA* written by Joseph Weizenbaum in 1966 imitates and parodies a Rogerian psychotherapist by continuously avoiding answering questions and rephrasing reader statements and posing them back (available e.g. at Manifestation.com 2007). A prose generator similarly to a conversation program produces prose to the reader, but is based on more narrow input from the reader. A MUD is clearly also ergodic literature since it consists of a text-based adventure game played by many users over computer networks.
To round off his study Aarseth adds experimental texts such as a an art installation constructed with a LED projector, an encrypted poem by William Gibson (1992), a forking text on the web which can be modified by users and finally a sentence generator which merges and mutates other texts. In all there are 23 texts in the study – one standard narrative work represents traditional codex.

**QUALITATIVE, BY QUANTITATIVE, STUDY**

Ironically perhaps, Aarseth in his remarkably qualitative study of ergodic literature employs a highly quantitative tool to prove some of his fundamentally qualitative points. Quantitative methods might be a less alien tool for researchers of digital literature – many of them are well-traversed in the computer and software technologies. However, Aarseth’s *Cybertext – Perspectives on Ergodic Literature* is in its references, examples and polemics geared towards a highly qualitative framework regarding textuality, literary theory, poststructuralism, postmodernism, new/hypermedia, which makes the use of statistical tools an interesting detour.

The results are presented with a two-dimensional graph of all 23 texts, which have been positioned, using a quantitative calculation method, in specific relations to each other, based on a typology of seven textual machine properties/categories and analysed using so-called mCA (Multiple Correspondence Analysis). With mCA a seven dimensional space of 576 unique positions (576=3×2×2×2×2×3×4) is reduced, with considerable loss of data variance (over 50%), *i.e.* how much data is covered (Dymek 2005c), to two synthetic axes. This results in a significantly more comprehensible two-dimensional graph with not only the position of every text, but also the seven categories/dimensions hence making dominant characteristics easier to detect by the vicinity of texts to certain dimensions. There are, however, a number of unclear aspects of this quantitative study. Extensive motivations regarding the number and selection of objects are not provided except:

> The approach is qualitative, and the selection is based on the texts’ distinctive user relationships, rather than on any popularity, literary quality, or seminal position they might enjoy.

*(Aarseth 1997, p. 67–68)*

This is inevitably a weak point, since the selection process is fundamental to the entire quantitative analysis. The selection of these candidates – a qualitative and literary theoretical evaluation – is beyond the scope of this study. Furthermore, the limited number of objects is also questionable. Ac-
cording to Hair et al (1998), a suggested guideline for stable solutions is more than four times as many objects as dimensions required – a requirement which the study does not conform to. The dimensionality omits more than 50% of all data variance. The author defends this decision by emphasising that readability is more important than accuracy – a statement which would require further quantitative examination to be ultimately verified in this particular case.

The typology of seven text properties, notions of interactivity, reader/writer/medium communication, and the concepts/implications of the cybertext perspective will be analysed later in this study. The most significant conclusion at this stage consists of Aarseth’s fundamental claim: by plotting lines around groups of paper-books and electronic texts in the two-dimensional graph, indicating major overlap, he questions a prevailing dichotomy in the field of literary theory between these two groups – a central notion in his cybertext theory. However, the two groups seem to demonstrate a high concentration in the corners of their boundaries. A closer inspection of which categories fall into these regions shows some (weak) domination of certain features, however, these do not suffice to define a general distinction between paper and electronic texts since each group shows great internal divergence and variation.

Aarseth concludes his study by proposing two different general genre frameworks for all texts based on the graphs. The first framework divides all texts into two categories: texts that are “ludic”, i.e. where users play roles and participate creatively, and other types of more contemplative texts with fewer features but also freer access.
ELECTRONIC VS. PAPER TEXT FORMS

As shown, electronic/digital/computer texts/computer literature are not given axiomatic status in the cybertext perspective. This is not, however, the case in much of literary studies, or video game studies — what makes a video game unique is the sole fact that it is played on a computer. This ties into the discussion concerning techno-mysticism — the computer is often regarded as a new era in human civilisation. For instance in the generously entitled anthology *The Medium of the Video Game* by Mark J.P. Wolf (2001) with the attention-generating foreword by the inventor of the game console Ralph H. Baer, the first chapter provides a fascinating definition of video games:

> While the degree to which a program can be considered a game depends on varying criteria, its status as “video” is only slightly less problematic. By the strictest definition, “video” refers to the use of an analog intensity/brightness signal displayed on a cathode-ray tube (CRT), the kind of picture tube used in television set or computer monitor, to produce raster-based imagery. A slightly looser and more common definition of “video games,” closer to the popular usage of the term, would also include games that do not have raster graphics, like vector graphic games, and games that do not use a CRT, such as Nintendo Game Boy games, which use a liquid-crystal display. By these definitions, most arcade video games and home video games using a television, as well as games played on a home computer would qualify technically as video games.

Wolf evidently defines the video game medium in physical terms, or more precisely: what type of imaging technology is being employed to display video games. Admittedly this is not the most rewarding way to define video games. What happens to Wolf’s definition if someone hypothetically changes the display technology? Has the ontology of the video game medium changed? Is it no longer a “video game”? Wolf is more interested in distinguishing video games from the alternative concept of computer games:

> “Computer games,” then, are most usefully seen as a subset of video games, due to shared technologies such as the microprocessor and the
cathode-ray tube. Furthermore, many games are now released across multiple platforms at once; for example Myst was released for [several computers] as well as for dedicated game-console systems like [several game consoles]. As dedicated systems grow in power and home computers grow in speed and connectivity, the two technologies may converge until only functional differences remains, as well as the degree to which a particular system can be said to be “dedicated” to game playing.

Defining the medium in terms of its material components might be a rewarding endeavour from a strictly electronics hardware point of view, but does not fully encompass the entire phenomenon of the video game medium. The example of multiple platform games shows the vulnerability of Wolf’s video game definition(s): is a game played on a video game console not the same if played on personal computer? It is more fruitful to examine the video game medium from within, explore its dynamics, functionality and internal organization, instead of focusing on what type of physical medium/technology is used to present it?

COMPUTER/ELECTRONIC/DIGITAL TEXTS

Many concepts within literary and video games theories often revolve around the “computer”, “digital” or “electronic” which is a techno-mystical preoccupation with the thrilling properties of the newly discovered physical medium. The question is whether all forms of media emanating from new technologies inherit all of its “revolutionary” properties? Does superior information processing power automatically translate into equally pioneering tools of aesthetics, literature and media? The question is complex and requires careful analysis.

It should be particularly noted that computer systems provide several types of media – some of these share properties with paper-based equivalents, or other media forms. Reading traditional codex on a computer screen does not differ significantly from reading the same text in paper format. Perhaps the computer screen provides inferior versatility with slower reading speed (Muter & Maurutto 1991) and computer screens might be cumbersome on kayak trips, but as media forms both provide practically identical functionality. Similarly, there is little point to discussing “digital film” or “analogue film” as separated media forms – it only makes sense when discussing differences in physical/material medium (film stock, DVD, MiniDV, vhs, etc.) where nuances in visual representation properties (resolution, colouristics, contrast, aspect ratios) might exist.
Paradoxically, text and literature are treated differently by many theorists when it comes to evaluating the significance of the physical medium layer. With the arrival of the first electronic literature, initially text-based adventure games in the 1970s such as *Zork* (e.g. available De Biasi 2004), the text of the computer world started to interweave with the text of the literary world. It fused together two separate uses of text: one type of text similar to traditional codex with predefined sequence of words was combined with another significantly newer use of text as a dynamic control/communication tool for computer systems. This synthesis proved successful – not only is the reader/user to a large degree in control of the unfolding of the text, the user is also expected to control/explore different options leading the text/story forward. The resulting actual text will differ significantly from user to user, and even from one “reading” to another as the number of choices are usually numerous and produce quite different responses. Traditional codex literature provides storytelling and context, while the computer-text user interface component provides the “interactive” element. This combination utilises the unique primary representational property bestowed by the physical medium of technology i.e. the “interactive” computer and its screen. The fundamental error committed by many new media theorists and information age evangelists is to extrapolate this “unique primary representational property” to all types of text media/literature that utilise the physical medium of computer systems/screens. Hypertext is an illustrative example as its existence preceded computer technological implementations: book dictionaries and encyclopaedias are all paper-based static hypertexts – stretching as far back in time as the Talmud, whose annotations create a web of documents tied together with references. Computers improve the speed at which hypertexts can be read, or more precisely traversed – browsing ten references in a paper-based encyclopaedia might take considerable effort and time, while doing the same task on computer-based encyclopaedia is a question of a couple of seconds divided by swift clicks. Some hypertext theorists associate the arrival of computer hypertext with reader emancipation, deconstruction of the reading process, non-linear narratives, the death of the author, democratised mass-communication and other similar revolutionary claims. The pivotal question becomes: what exactly technological property, hitherto unknown, has hypertext bestowed on the world to liberate it from the shackles of linear communication?

Aarseth clearly opposes this type of revolutionary rhetoric and takes a highly critical stance concerning these issues. It reveals that from an ergodic functional/textual machine point of view, there is little difference between paper and computer hypertexts except in terms of physical medium properties such as different imaging technology and execution speed. This
does not entail a radical rejection of the entire field of hypertext studies, but stresses that its medium is not intrinsically attached to the physical medium of computers. Similarly, Raymond Queneau’s *Cent mille milliards de poèmes* poetry generator (\(10^{14}\) possible poems) was originally paper-based, it now exists in digital format (Rowe 2007), differing only in physical medium and not functionality. Text functionality and not the technology employed in the physical medium layer are the primary properties of ergodic texts. Playing a game of tic-tac-toe with pen and paper or on a computer screen differs only in its physical medium – it *is* the same game in both cases.

**TECHNOLOGY AND APPLICATION**

Fundamentally, this polemic revolves around the interpretation of technology (in an abstract and general sense) and its application. Does a “technology” provide change or does its *application* accomplishes the change? Or to give an extreme boundary case by quoting core polemics of the never-ending firearms debates in the USA: “do guns kill people, or do people kill people using guns?” The question is the result of several generalising dichotomies. The culture of technology (in this case firearms) is assumed to be limited to the domain of humans. Culture is assumed consists of people and their interaction. Technology (firearms) on the other hand is primarily considered to be material – artefacts in other words. A dichotomy of objects (firearms) and subjects (people) interact and lead to (metaphysical) change – death of “the Other”, or in some cases the death of the subject (suicide or accidental suicide). Some would claim that if guns were forbidden the deaths – unintentional or intentional – would have been avoided, thus making technology the source of the deaths. Others argue that a gun never fires itself. It requires a human to aim and take the conscious decision to pull the trigger – hence it is in the minds of humans that the weapon lays. It is the *culture* and its approaches to violence that lead to deaths – not the guns themselves, thus turning the focus to the ethics and culture instead of technology.

This is obviously not the place to elaborate this discourse. However, a couple of remarks might shed some light on the issue of views of technology and its use/application. The dichotomisation of technology on one hand, and people on the other, is the cause of much of the interminable debate. Technology is not limited to artefacts, but primarily involves a culture of usage and social purpose as well as the actual physical technology. Moreover, culture is not only limited to the intersubjective space, but also involves artefacts and technologies making this situation quite messy. The
Romans are said to have maintained their empire by building a network of roads upon which trade and communication could flourish, but also a superior way to quickly transport armies to the corners of the far-reaching empire. So “all roads leading to Rome” created the Roman Empire – but equally the will within the Roman culture to embrace and develop this technology to a, probably unanticipated, civilisational advantage. The technology to construct road was then consequently as much culture, as were the actual roads, which in some cases exist to this day.

One rewarding way to untangle this recursive interdependence of culture and technology is unsurprisingly the theoretical framework of Actor-Network Theory (ANT) developed most prominently by Bruno Latour (1987), Michel Callon, John Law and others. Broadly speaking, the ANT framework endeavours to focus on “both/and” instead of “either/or” in the technology-culture dichotomy – both can exist as actors in networks. The emphasis is on networks, which conveniently removes the dichotomous notions from the core discussion. A technology, or an artefact, can therefore be an equally important actor as a human person, giving it a certain level of agency – obviously without intentionality as in the case of persons. Firearms as actors thus have a certain agency, supporting the claims of gun control groups. Existing in networks of persons (also actors), the ANT perspective gives persons agency as well. ANT shifts heavily focus to the shapes and dynamics of the networks, instead of focusing on individuals and artefacts.

Returning to the paper vs. electronic texts debate, ANT elucidates the focus of new media/hypertext theorists on technology. By defining video games, or more generally texts, in terms of technology scholars omit the importance of culture. Hypertext proponents tend to assign the culture of hypertext use, which indeed blossomed with the arrival of computer technology, to the particular technology of computers, which evidently is not the entire case. This culture is then projected onto any type of “new” text form that might appear on computer screens, without taking into account whether the fundamental functionality of these texts has existed previously or not. Consequently, in line with ANT, it is more rewarding to observe the combined networks of culture and technology. The technology of computer-based hypertext is indeed innovative, but much of its innovation resides in the culture by which it has been adopted. It is therefore a techno-centric perspective to magnify the significance of technology, and it is also a misleading generalisation to categorise new forms of media according to their purely physical and technological dimension without taking into careful account the functional dimensions bestowed by the particular technology layer:
Because there are strong similarities between new and old types of ergodic literature, “the computer” and “information technology” as such will not be an explaining factor in this study but, instead, part of the field to be explored. This approach frees us from trying to define such vague and unfocused terms as digital text or electronic literature and allows us to develop a function-oriented perspective, in which the rhetoric of media chauvinisms will have minimal effect on the analysis. To be sure, media are far from neutral, inconsequential carriers of “content,” but the essentialist idea of “the computer medium” as a singular structure of well-defined properties of communication is just as untenable and can be based on only a very limited understanding of both computer applications and media theory.

(Aarseth 1997, p. 19)
NOTIONS OF INTERACTIVITY

Since the attention of this analysis is shifting towards the functionality, inevitably the notion of interactivity must be considered. Interactivity represents the very unique core of the entire medium of video games — it constitutes the great promise and meaning of this medium. Most computers and software programs offer interactivity, as part of any contemporary computer system. Unlike most examples of interactivity, game interactivity serves supposedly only one purpose: to entertain. Video games provide that extra dimension of computer-generated interactivity, distinguishing it from traditional games based on boards, cards, dice or any other popular game devices, where interactivity is provided by (human) opponents. However, these traditional games are severely limited in terms of flexibility, and highly reliant on physical game devices. Video games also use physical tools — computer, game console etc and controllers — but with the ability to install new game software allowing infinite flexibility and experiences. Every new video game opens up a new universe of interactivity and experiences.

Interactivity ushers in a revolution in mass communication as it deconstructs the reader-writer dichotomy. It invites the reader to participate in the co-creation of the text, which becomes uniquely adapted to the user. Interactivity challenges and reinterprets power relationships of media. Readers are no longer a grey and obediently passive mass-audience at the mercy of authors sitting at the top of a unidirectional hierarchy of communication and knowledge. Readers are for the first time in the history of communication able to actively participate and take decisions affecting their individual medium experience. This decentralisation of interpretive and communicational control sets the foundations for a democratic and personalised medium with crucial consequences for production and consumption.
Compared to other media the production logic of video games is altered, as the authors relinquish creative text control and to completely re-think and reorganize the production process by incorporating the reader and its new position. The videogame industry is embracing these perspectives and adopting names signalising the significance of interactivity. Trade organizations such as the American IDSA – Interactive Digital Software Association (currently ESA – Entertainment Software Association), ISFE – Interactive Software Federation of Europe or the German BIU – Bundesverband Interaktive Unterhaltungssoftware, and countless game developers and publishers such as Disney Interactive, GT Interactive, Eidos Interactive, Hasbro Interactive, Mattel Interactive, Take Two Interactive etc, are some examples of the prominence of interactivity in the industry. Production of entertaining interactivity gives rise to a new industry, much in line with the renowned notions of experience economy launched by Pine and Gilmore (1999). The core commodity becomes the entertaining experience of playing a video game, or the experiential commodity. A globalised “information capitalistic” network of developers, publishers, console manufacturers, and others produce video games – the ideal commodity of the post-industrial/post-Fordist age:

We propose that the interactive game fulfils Lee’s prescription for an ideal type of commodity for post-Fordism. It is a child of the computer technologies that lie at the heart of the post-Fordist reorganization of work. In production, game development, with its youthful workforce of digital artisans and netslaves, typifies the new forms of post-Fordist enterprise and labour. In consumption, the video game brilliantly exemplifies post-Fordism’s tendency to fill domestic space and time with fluidified, experiential, and electronic commodities, Video and computer games, moreover, are perhaps the most compelling manifestation of the simulatory hyperreal post-modern ambience that Lee and other theorists see as the cultural correlative to the post-Fordist economy. The interactive gaming business also powerfully demonstrates the increasingly intense advertising, promotional, and surveillance strategies practised by post-Fordist marketers in an era of niche markets.

(Kline et al. 2003)

Kline et al refer to Martyn J. Lee’s writings on the “ideal commodity” of different paradigms/regimes (Lee 1993), where commodities embody the most powerful economic, technological, social and cultural forces at work in a paradigm. The ideal commodity of the industrial age was the Ford Model T – standardised in both construction and production, mass-produced in millions of units, adapted to mass-market context in terms of
pricing and production logic – a new type of commodity representing the age of mass-market industrialism giving rise to the so-called Fordism age. Despite sweeping claims of ardent post-industrial and post-modern economy theorists, its logic, in modified form and specific markets, very much prevails to this day. According to some post-industrial perspectives (e.g. Bell 1976) Western economy is transforming its foundation from manufacturing to services, resulting in a science and knowledge-driven economy where information constitutes the pivotal commodity. Kline et al claim that the video game typify an ideal version of the post-industrial commodity because of its organization of production, consumption, simulatory nature of its medium and its unique marketing logic.

**INTERACTIVE NARRATIVES**

The notion of interactivity is not limited to the video game medium and industry, but also extends to interpretation and analysis of the video game medium as such. Introduced to literary studies by Niesz and Holland (1984) and later enthusiastically adopted by new media and hypertext theorists, the notion of “interactive fiction” focuses on the basic assumption that video games provide a new way of telling a story of fiction. With the arrival of the very first computer games, such as Spacewar! in the 1960s, it became clear that a games could be perceived as a story and fiction.

Story and fiction are concepts from narratology, which is the study of narratives and narrative structures. Considerable effort has been invested in conjoining the fields of narratology with the nascent field of games studies. Major proponents of these combining perspectives are Janet Murray (1997) Brenda Laurel (1993) and Marie-Laure Ryan (2001), who propose the extension of narratology to “interactive media” such as video games. Janet Murray, one of the most outspoken advocates of narrative theory in games studies, defines interactive in the context of “digital environments” as:

> Procedural environments are appealing to us not just because they exhibit rule-generated behavior but because we can induce behavior. They are responsive to our input. Just as the primary representational property of the movie camera and projector is the photographic rendering of action over time, the primary representational property of the computer is the codified rendering of responsive behaviors. This is what is most often mean when we say that computers are interactive. We mean they create an environment that is both procedural and participatory.

(Murray 1997, p, 74)
Murray elaborates the procedural and participatory properties that make up the *interactive* dimension of cyberspace or digital environments, which together with the *immersive* dimension of cyberspace is constituted by the spatial and encyclopaedic properties of cyberspace. The computer and its defining ability to execute a series of rules, underlining the mathematical and binary logical foundation of all software, provide the procedural property of cyberspace. Producing a procedural environment with rule-generated behaviour allows the induction of new behaviour by users of the environment, giving rise to interactivity. These procedural environments are enhanced by the spatial property of cyberspace characterised by its ability to represent navigable space. Unlike “linear media” such as books and film, Murray claims that only digital environments can present space that users can move through. The immersive dimension of cyberspace is created together with the encyclopaedic characteristic, which emphasises the “infinite resources” provided by information technology.

Brenda Laurel, on the other hand, envisions “interactive drama” in *Computer as Theatre* (1993) as part of an “interactive fantasy system” governed by a “playwright” who adapts interactively to the participant, yet is still able to create organic wholes of drama. The playwright is an interactive playwriting expert system that enables a participant to engage from a first-person perspective/experience in the development of a story. The playwright would also be able to influence the story by organizing events and characters, in order to move the action forward and make it dramatically interesting. Laurel’s influential perspective also draws on theoretical frameworks of narrative and drama (particularly Aristotle) to analyse the medium of video games, or rather in Laurel’s case “human-computer activity”, and to elucidate the narrative potential in the notion of interactivity.

Another prominent perspective in the field of “interactive narratives” is the one Marie-Laure Ryan presents in her *Narrative as Virtual Reality: Immersion and Interactivity in Literature and Electronic Media* (2001). Ryan praises Virtual Reality (VR) technology for reinterpreting our understanding of narratives in a digital environment. Like Murray, Ryan posits *immersion* and *interactivity* as two pivotal dimensions of the video game medium, with strong emphasis on immersion which Ryan sees as something that all art forms have always aspired to incorporate. According to Ryan, interactivity can be divided into weak and strong forms depending on the type of reader involvement and meaning construction. Ryan’s primary focus is however on another type of interactivity:

But the type of interactivity that receives the greatest attention in these pages is the one that largely owes its existence to electronic technology: the textual mechanisms that enable the reader to affect the “text” of the text as a visible display of signs, and to control the dy-
namics of its unfolding. Here again we encounter a contrast between a weak and a strong form. In the weak literal sense [...] interactivity is a choice between predefined alternatives. [I] consider a stronger form in which the reader – more aptly called the interactor – performs a role through verbal or physical actions, thus actually participating in the physical production of the text.

(Ryan 2001)

As discussed previously, Ryan sides with those theorists that draw a direct link between electronic technology and interactive texts since they “owe its existence to electronic technology”. It gives readers the ability to choose among predefined options. In cases of stronger forms of interactivity it allows the reader/interactor to participate in co-production of the text. This latter, stronger form and her main definition of interactivity are theoretically congruent with ergodic literature and cybertexts, as Ryan refers to the “textual mechanisms” of “text as visible display of signs”, clearly understanding “interactive texts” in similar paths to Aarseth.

CONFLUENCE AND CONCLUSION

Interactivity is an extensive and widely-used concept with numerous meanings, as Kiousis (2002) stresses when reviewing notions of interactivity:

Any literature review of interactivity is cumbersome because of the vast implicit and explicit definitions prepared by researchers from many different academic and professional perspectives. Consequently, it is important to narrow our focus and keep the analysis manageable given the extensive discussion surrounding the topic. Specifically, while our emphasis is on communication, interactivity conceptions have been informed by both communication and non-communication perspectives, especially from the fields of psychology, sociology, and computer science/design.

(Kiousis 2002)

As shown, the concept is used in a wide variety of cases and contexts – the examples provided here have been limited to a selection of examples suitable for this study. Originating from the computer sciences the concept has migrated into the mainstream vocabulary transforming itself into a perspective on media, business models, economic paradigms, human–machine relationships and in a broader more general perspective as a way to define communication between humans/society and/or technology.

As a concept interactivity lacks clarity and stringency in a way that generates more confusion than insight. There is a plethora of definitions and
uses depending on context and perspective. In computer science the term generally refers to the possibility of computer programs to accept and adapt the course of computations performed to the input of the user. This definition has migrated to other uses – e.g. “interactive theatre” or participatory theatre, invites the audience to take part and affect the play. In this case it has suddenly moved from the domain of human-computer interactions, to human-human interactions. Many keynote speakers in various contexts and industries (specially the game industry…) open their presentations with claims of being “interactive presentations” i.e. the audience is allowed to ask questions, preferably at any given moment. The purpose is obviously not to mimic a computer environment, but rather to achieve the purportedly more direct, personal and democratic communication level associated with “interactive media”. Interactive is frequently applied as a synonym to “democratic” or “personal” in analysis of mass-communication and media. In the game industry the term has assumed a meaning of technological innovation and strategy. On a more particular (software) application-level interactive assumes the meaning of (artificially) “intelligent” – assisting and predicting our actions to improve the ease of use.

Transformative and disruptive technologies need a driving core concept – a concept which can become a guiding principle for technologies, applications, uses, associations, visions and political ideologies. The concept unites and smoothes over inconsistencies and paradoxes associated with different interpretations. A similar illustrative example from the computer age is the concept of multimedia. For much of the 1990s it constituted a driving concept of the entire information and communication technology industries, affecting mainstream perception in media and possibly society as a whole. Every information technology became more attractive if it was labelled “multimedia”. Its meaning was almost irrelevant – it consisted of a loose collection of visions regarding the computer as a more creative technology. Theoretically, it signified the fusion of several types of media communication – in practice it meant the inclusion of a CD-ROM drive. The notion also lacked stringency – even simple games in the 1970s used primitive sounds in combination with vision and animated sequences. Multimedia attempted to fuse (hyper)text, film, music and computer animation/graphics into a unified and innovative new media form using many of the same claims repeated in discussions regarding interactivity. Many multimedia applications were initially primitive explorations of media novelty and its limitations (such as slow CD-ROM drives and hastily “hypertextified” versions of paper encyclopaedias and books) than a “multimedia revolution”. Today the use of the term is less prevalent as the evolution of information technology has made most of its technological claims ubiquitous and available in numerous devices ranging from mobile phones to portable MP3...
players and automobile dashboards. The term “multimedia” is still widely used, but it has lost most of its ideological and unifying force of diverging and incongruent projections of hopes and aspirations concerning information technology.

Interactivity, like “multimedia”, lacks stringent definitions and mainly work as a unifying and driving industry/media concept. There is a need for perspectives on what type of *functionality* interactivity provides, *what* is being interacted, and finally between *whom* the interaction is being enacted. Aarseth analyses two existing definitions of the field of “interactive” aesthetics: one by computer semiotician Peter Bøgh Andersen and the other by MIT Media Lab scientist Andrew Lippman. Bøgh Andersen states that:

> An interactive work is a work where the reader can physically change the discourse in a way that is interpretable and produces meaning within the discourse itself. An interactive work is a work where the reader's interaction is an integrated part of the sign production of the work, in which the interaction is an object-sign indication the same theme as the other signs, not a meta-sign that indicates the signs of the discourse.

(quoted in Aarseth 1997)

According to Aarseth, this definition resembles *interaction*, participation and play. Bøgh Andersen's definition is valid for the relationship between a musician and a composition, but also between a building and its inhabitants. The definition also excludes works where users can add discursive elements that modify the discourse of the work or is unknown in advance such as many *MMOGs* (Massive Multiplayer Online Game) or computer *RPGs* (Role Player Games). Andrew Lippman's quite famous definition (*e.g.* in Huhtamo 1998):

> […] the mutual and simultaneous activity on the part of both participants, usually working toward some goal, but not necessarily implies on the other hand functional equality between interacting agents. This definition requires the computer to be functionally (“mutually”) equal to the user, which obviously is not the case as it would computer awareness of itself and of the human users. Nevertheless, this definition has merits since *interaction* is best exemplified by human-human situations – where people interact and communicate with each other. The democratic, personal, egalitarian and adaptive connotations with interactivity is founded on assumptions of functional mutuality – the interactive system somehow “understands” the needs of the user, implying some variety of empathy and consciousness. Interaction between humans and artefacts/objects becomes increasingly complex issue within the fields of Man-Machine Interaction
(ммі) or Human-Computer Interaction (hci): when does the reaction of an artefact/machine/system turn into interaction? Is interactivity the same as interaction? Any type of electronically aided inter/re-action-mechanism is often labelled “interactive”.

The concept of “interactive fiction” is based on fiction that reacts, adapts and communicates with the reader. According to a traditional perspective fiction is written by the author, and then communicates textually with the reader. Aarseth considers fiction to be underdeveloped in the literary theory field. Formal dictionary definitions discuss representations of imagined events and characters – more or less a lie, which needs an active believer. Fiction thus “interactively” communicates with the reader (and his/her imagination) by means of texts. “Interactive fiction” then is a lie representing events that continuously adapt to the actions of the reader. This cuts to the very core of Aarseth’s rejection of the term “interactive” in literary context, and in particular the concept of “interactive fiction”:

The adventure game user cannot rely on imagination (and previous experience) alone but must deduce the nonfictive laws of the simulated world by trial and error in order to complete the game. And a fiction that must be tested to be consumed is no longer a pure fiction; it is a construction of a different kind. This empirical dimension makes ergodic works of the adventure game variety stand out from other types of literature and renders the term interactive fiction meaningless in this context. It’s a purely ideological term, projecting an unfocused fantasy rather than a concept of any analytical substance. This should be sufficient reason for theorists not to use it, although given its popularity, it will probably not go away for awhile. Be that as it may, interactive fiction is perhaps best understood as a fiction: the fiction of interactivity.

(Aarseth 1997, p. 50–51)

A text that is explored (by trial and error) is no longer a narrative or fiction. Fiction is a lie that provides impetus for imaginative interpretation from the reader. If the lie adapts, i.e. changes, according to the actions/empirical explorations of the reader/user, then it is transformed into something other than fiction/lie.
THE FUNDAMENTALS OF CYBERTEXT:
TYPOLOGY OF TEXTUAL COMMUNICATION

As vividly demonstrated, there is a distinct need for clarification, in the context of dynamic and electronic texts, the relationships between reader-text, author-text and text-physical medium – in other words attempt to provide more nuanced perspectives on the notion of interactivity and “interactive texts”. A crucial component of the Aarsethian framework consists of his typology of textual communication. According to Aarseth, similar studies have been performed by Richard Ziegfeld, consisting of a comparison of components of “interactive fiction” with other types of media. Nevertheless Ziegfeld’s study suffers from underdefined and overlapping categories leading to a less rewarding typology, according to Aarseth.

CORE CONCEPTS

Aarseth provides his own definition of text and textuality, as no universal definition of text seem to exist:

A text, then, is any object with the primary function to relay verbal information. Two observations follow from this definition: (1) a text cannot operate independently of some material medium, and this influences its behaviour, and (2) a text is not equal to the information it transmits. Information is here understood as a string of signs, which may (but does not have to) make sense to a given observer.

(Aarseth 1997, p. 62)

Aarseth assumes a distinction between the text that relays the verbal information, and the strings of signs constituting the information. Most of his theoretical framework is based on the dynamics between these two entities. The strings of signs that appears to readers are named scriptons and
the strings existing in the texts are referred to as the textons. To illustrate the difference: Raymond Qeuneau's *Cent mille milliards de poèmes* has 140 unique textons (14 lines of text with 10 unique options) that create one hundred thousand billion possible poems, which constitute the scriptons. These scriptons are not necessarily what readers actually read, but rather what the ideal reader would read if strictly following the linear structure of text.

The mechanism that generates or reveals scriptons from textons is called a traversal function. If a dynamic/cyber-text is most rewardingly seen, according to Aarseth, as a textual machine then the traversal function is the primary process of this machine. The traversal function is not unidirectional in terms of communication direction – from textons towards scriptons – but also works in the other direction as many ergodic texts allow textons to be added and/or modified, influencing the dynamics of scriptons and possibly, depending on the traversal function, affects the traversal function itself.

These three notions, scripton, texton and traversal function, constitute the fundamental components of the cybertext perspective. In Aarseth's view these components can describe not only ergodic texts but *all* texts according to their mode of traversal.

**VARIABLES OF TYPOLOGY**

Aarseth's typology of textual communication is based on the following seven variables: dynamics, determinability, transiency, perspective, access, linking and user functions. Each variable has a different number of options depending on its property. The characteristics of these options are according to variable as follows:

1. **DYNAMICS.** Determines whether the text’s scriptons and textons are static or dynamic. Possible values are *static*, when the number of scriptons and textons remain static; *ITD (Intratextonic Dynamics)*, when scriptons alternate and textons remained fixed; and finally *TDT (Textonic Dynamics)*, when both textons and scriptons vary. Examples: a static hypertext has static dynamics; text-based adventure game has ITD (static number of textons, but scriptons vary), and a Mud has TDT (network users can add own textons to the adventure game).

2. **DETERMINABILITY.** Defines whether the traversal function is *determinate* or *indeterminate*. A text is determinate if the adjacent scriptons to every scripton are always the same. Basically it determines
whether the ergodic text responds exactly the same way to a given situation, or if the response is unpredictable.

3. **Transiency.** This dimension has two values: *transient* and *intransient*. Determines whether scriptons appear with the passing of time, in which case it is transient, if not it is intransient. Some ergodic texts/video games remain static unless the reader/player acts, others generate new scriptons with the passing of time.

4. **Perspective.** Determines whether the text requires the reader to play a strategic role as a character in the world created by the text. If so it is *personal*, if not it is *impersonal*. A game of Tetris has limited personal perspective, making it quite impersonal, while a game like Grand Theft Auto III is based on personal perspective.

5. **Access.** If all scriptons are available at any given time, the text is *random access* such as in the case of ordinary book codex, if not it is *restricted access*. Example: the online encyclopaedia *Wikipedia* allows random access with links/search functions to its scriptons. Many hypertext novels do not provide search functions and restrict the access to their scriptons by requiring readers to pass certain fragments of the texts. Most video games (with three-dimensional environments) belong to this category.

6. **Linking.** This dimension has three values: *explicit*, *conditional* and *none*, determines whether links exist and if so, if certain conditions have to be met to access links from one scripton to another. Inevitably the hypertextual link as a concept is a viable and rewarding perspective on the dynamics of many new forms of media, as it represents the basic “movement” of dynamic/interactive/ergodic texts – selecting a link, usually at the will of the reader, causes some sort of screen-related action or movement such as presenting some sort of media content, usually a page of text.

7. **User functions.** Defines additional functions performed by the user besides the basic *interpretive* function (interpretation of meaning). *Exploratory* function is when readers have to explore which paths to take in the text; with *configurative* function scriptons are chosen or created by the reader, and finally the *textonic* function allows the reader to (permanently) add textons or traversal functions to the text.
The figure below illustrates what is probably the most important variable of the typology, *i.e.* the user function, and what types of texts and concepts correspond to each of its options. From left the different texts can be divided into two types: ergodic and linear. Ergodic texts have a user function in addition to the obligatory interpretative function. These two types, ergodic and linear, are later divided according to their text dynamics (first variable of the typology): static or dynamic. An ordinary codex text has interpretative user functionality, static textons and scriptons, thus making it a linear text. Some hypertexts also have a static number of textons and scriptons, while others allow the exploration of different paths in an otherwise static hypertext network. With dynamic ergodic works, the configurative user function allows manipulation/modification of scriptons. The final level, textonic user function, allows new textons and even traversal function to be added permanently. The figure resembles the cybernetic feedback loop where user input passes through ergodic user functions (explorative, configurative and textonic function) and information feedback is flowing back to the user through the interpretative function.

<table>
<thead>
<tr>
<th>VARIABLE</th>
<th>POSSIBLE VALUE</th>
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<tr>
<td>Dynamics</td>
<td>Static/Idt/Tdt</td>
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<td>Determinability</td>
<td>Determinable/Indeterminable</td>
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<td>Transciency</td>
<td>Transient/Intransient</td>
</tr>
<tr>
<td>Perspective</td>
<td>Personal/Impersonal</td>
</tr>
<tr>
<td>Access</td>
<td>Random/Controlled</td>
</tr>
<tr>
<td>Linking</td>
<td>Explicit/Conditional/none</td>
</tr>
<tr>
<td>User function</td>
<td>Interpretative/Explorative/Configurative/Textonic</td>
</tr>
</tbody>
</table>

Table: Summary of Aarseth’s typology of textual communication
Cybertext constitutes a wide concept that encompasses both hypertext and ordinary codex text. It is a perspective on textuality, dynamic texts and textual machines, rather than a distinctive type or genre of text type. Aarseth distinguishes cybertext from the more narrowly defined ergodic texts:

I suggest the term cybertext for texts that involve calculation in their production of scriptons.

(Aarseth 1997, p. 75)

By basing the definition of cybertext and most of the typology variables on the concepts of scriptons and textons and their different properties, Aarseth creates a more analytical and stringent approach to issues of reader-text-author relationships than the opaque notion of “interactivity”. By delving deeper inside the internal structures and mechanisms of the textual machine, a more nuanced understanding of the relationship between reader-text-author, is created. Instead of sweeping claims of “wreaders” co-authoring “interactive texts” it is more productive to put those issues aside and focus on what exactly the reader and author can influence within the text. If “interactivity” entails reader-empowerment and “co-authorship” then there must be degrees of empowerment, which is exactly what Aarseth’s user function variable describes. In simple terms, the cybertext model provides more refined and nuanced perspectives on “interactivity” in the context of dynamic/interactive texts, than other previous attempts.
DISCUSSION

There are, however, some remarks to be made as regards the typology. The typology variables dynamics, determinability, transciency, access, linking and user function are all based on properties of scriptons and textons (in case of dynamics and user function). Determinability is the only variable focusing on the traversal function, even though it is defined in terms of scriptons. That leaves one characteristic, perspective, which defines whether the reader/user/player is required:

[… to play a strategic role as a character in the world described by the text […]

(Aarseth 1997, p. 63)

Hitherto all the variables have been questions of structures and mechanisms as part of the textual machine, expressing an instrumental, almost cybernetic logic: activating $x$ causes the transformation of $y$ by means of function $z$, resulting in $yr$. It is somewhat surprising to encounter the perspective typology variable as it deviates from the text mechanical perspective. The definition of the variable hinges on the words *describe* and *personal*, signifying a more qualitative approach of interpretation and literary qualities. Issues of personal perspective are basic components of narrative/literary theory, but in the cybertextual machine context it deviates from all other variables. Surprisingly limited explanation for the inclusion of this variable is given by Aarseth. It seems as if it is considered equally self-explanatory as many of the other variables. As it turns out one of Aarseth’s text categories (from the *MCA* graph) – the “ludic” texts – have personal perspectives:

In the west we find most of the ludic texts, those that invite the user to role-play and to creatively participate. In the east we find calmer, more contemplative texts, with fewer features but also freer access. If we divide the plot according to the second axis, we find a clear group in the north, identical to the adventure game corner of the triangle and dominated by intratextonic dynamics and the exploring user function: in the south there is a clear split between east and west. This brings us back to the triangle model, which provides three poles: static texts (southeast), adventure games (north), and unpredictable texts (*MUDs* and text generators, southwest). North is further divided between adventure games (northwest) and hypertexts (northeast). The southeast is best described by interpretive user function and no linking.

(Aarseth 1997, p. 72–73)
Several new types of categories are discovered: ludic texts require personal involvement with configuration and exploration of the text, and more static and interpretative non-ludic texts with free access to their (scripton) content and no linking. Another possible categorisation consists of adventure games/hypertexts, unpredictable texts (muds and text generators) and static texts.

In essence, Aarseth’s cybertext perspective proposes a framework that can more precisely define what the user/reader is interacting with, how the text machine interacts, what type of actions are bestowed on the user by the author, the internal dynamics of the text machine, when interaction is performed i.e. a temporal dimension and what type of perspective is given to the user/reader. He attempts to comprehensively demonstrate the inconsistency of the concept of interactivity. The material and mechanical dimensions of ergodic texts are articulated, and incorporated with the positions of author, text and reader. Combined these perspectives provide a theoretical framework – cybertext – which allows to approach the fundamental question of story telling and narratives in ergodic work and video games in particular.
A FUNDAMENTAL characteristic of Aarseth's *Cybertext – Perspectives on Ergodic Literature* is its focus on text. As contended by Aarseth there are no universal definitions of text – his own centres on objects whose primary function is to relay verbal information, indicating graphemes, in other words alphabet letters, logograms and other signs used as part of various writings systems. The focus is on verbal information, which usually is related to speech. Other types of related objects such as signs, symbols or icons have other primary functions. They can also relay verbal information, but primarily it is to communicate a specific meaning or to represent a meaning outside the sign itself.

*Cybertext – Perspectives on Ergodic Literature* is based on Aarseth’s thesis presented at the University of Bergen in 1995 (published in 1997) – the beginning of the 3D video game era ushered in by Sony Playstation (although 3D graphics were available on PC, game consoles (3DO and Atari Jaguar), or even as early as 1980 with vector graphics arcade game classic *Battlezone*, Atari 1980). Previously 2D games dominated and to this day there are many left in the market place – puzzle games, strategy, RPGs and simulation games with 2D graphics or versions of it such as isometric perspective. With the arrival of mobile gaming, 2D games have experienced a revival, due to limited calculation power and screen sizes. 1995 was also the era of hypertext/fiction/media/everything enchantment, CD-ROM based “multimedia” that was surprisingly text-based, and the nascent stages of the hypertext-based World Wide Web and other forms of predominantly text-based Internet technologies.

Simply put: Aarseth’s cybertext theory based on “verbal information” decreases its applicability bypassing much of current phenomena, such as 3D. Since the presentation of his theories, the evolution/popularisation of 3D graphics has radically changed the landscape of new media and game studies. Text-based games have since the time of writing of *Cybertext – Perspectives on Ergodic Literature*, been largely marginalised. There are also
academico-political reasons for this text-focus – literary theory, and its predominant study of text-based media *i.e.* codex by affiliation with philology, is substantially more established than the nascent field of game studies. New media studies, spearheaded by hypertext theory with origins in literary theory, often enthusiastically assume the role of the pre-eminent interpreter of all things “new media” including video games.

**INTERNAL SCHEMATIC STRUCTURE OF ADVENTURE GAMES**

Aarseth acknowledges already at the time of writing *Cybertext* that the primary form of expression in adventure games was developing in a different direction:

Images, especially moving images, are more powerful representations of spatial relations than texts, and therefore this migration from text to graphics is natural and inevitable.

(Aarseth 1997, p. 102)

In the fifth chapter of *Cybertext – Perspectives on Ergodic Literature* Aarseth presents an internal schematic structure of adventure games that:

[...] is not limited to single-user adventure games or text-based games but can also describe multi-user dungeons and graphical games such as *Doom*.

(Aarseth 1997, p. 103–104)

This is an extension, and elaboration, of the cybertext model applied on the particular case of adventure games. It focuses on the internal structures with different types of expression modes such as texts, moving graphics and sound, and how users interact with a typical adventure game. It is an attempt to conceptualise the functional dimensions of a general adventure game.

The model consists of four layers: database, processing engine, interface and finally the user. In the model the database layer contains static (read-only data) and dynamic data (position, status of user’s character and other objects). Processing engines represent “the core of the cybertext”; they include the simulation engine, which calculates and simulates the current state of the cybertextual world, and the representation engine, which presents a more restricted personal (graphical) perspective. The third layer – the interface – has an input and output component. The first (“Analysis”) analyses and translates the user’s input commands into the code of the simulation engine. Output components (“Synthesis”) convert information
from the simulation engine into text, graphics, sound and other options, depending on the cybertext’s expression form. The final and fourth layer is the user, which is not actually part of the cybertext, but rather is part of a cyborg relationship with the textual machine.

The model expands beyond “text relaying verbal information” as it contains references to not only text but also “static graphics, a combination of these two, or sound and animated graphics”.

Notwithstanding these advantages, the model has some limitations. It focuses only on adventure games – other genres have significantly different internal structures. Another limitation with the internal model is the excessively abstract perspective on the structure of (current) adventure games. Many current three-dimensional (adventure) games are based on game engines or middleware i.e. external software packages performing certain specialised functions that can be integrated within the game software. Many game engines contain so-called script modules for “scripts” of events, sounds, simulation, visual effects etc that are initiated by certain events/triggers initiated by user/software. It is quite challenging, if not impossible, to determine, which component of Aarseth’s model this module corresponds to since it performs the functions of several components. Furthermore, many game engines are integrated systems where clear-cut distinctions between representation, simulation, parsing and analysis cannot be made.

MULTI-DIMENSIONAL TYPOLOGY OF GAMES

The rise of dynamic graphics as the primary form of expression in video games, as opposed to text, creates new dimensions to its analysis. To more comprehensively address the issues raised by this development, and to advance his previous perspectives, Aarseth has together with Solveig Marie Smedstad and Lise Sunnanå (2003) created an extended “multi-dimensional typology of games”:

[...] we propose a multi-dimensional typology that can be used to classify all games based on spatial movement, including physical sports, board games, and computer games. The typology is biased towards spatial games, but can also be used to classify non-spatial games (e.g. card games) simply by excluding the spatial dimensions.

The multi-dimensional typology consists of 13 (optionally 15) dimensions grouped under 5 headings. It approaches more acutely video games, which by definition brings forth the dimension of images/graphics and not exclusively text, as the central component of game expression. The multi-
dimensional typology consists of the following dimensions grouped into five headings (in bold):

**SPACE**

1. **Perspective.** Two possibilities: *omni-present* and *vagrant*. The omni-present (player-)perspective dictates that the player is able to access the entire arena or field where the game is played. The opposite perspective is called *vagrant*, when the perspective is linked to a player-perspective or token. Basing this dimension on visual perspectives (1st, 3rd and iso-morphic) is rejected as many games allows the possibility to shift between visual perspectives.

2. **Topography.** Determines discrete or continuous movement of player. Certain games (such as chess) allow only discrete non-overlapping movements according to board/field positions (e.g. in chess 8×8 possibilities). Geometrical is the value of the topography dimension when continuous, and topological when otherwise. The authors acknowledge that particular games have a combination of both with limited but non-overlapping positions within the field.

3. **Environment.** Defines whether the environment is static, or can be modified, thus being classified as dynamic.

**TIME**

4. **Pace.** Possible values: *real-time* and *turn-based*. Real-time games allow opponents (if any) to be active all the time. Turn-based games do not allow continuous activity, but is rather controlled and interchanged between opponents.

5. **Representation.** Possible values: *mimetic* or *arbitrary* time. Mimetic time is applicable if actions inside the game world mimics the time of corresponding actions in the real world of the player.

6. **Teleology.** Two possible values: *finite* if the game has a clearly defined winning outcome; *infinite* if it can seemingly go on forever (e.g. Tetris, or most MMOGs as there are gameplay, as well as commercial, incentives to not have conclusive outcomes).

**PLAYER STRUCTURE**

7. **Player structure.** Six possible values: *single-player, two-player, multi-player, single-team, two-team and multi-team*. This dimension can optionally be expanded with two other dimensions: *adversary structure* and *team structure*. The adversary structure consists of three possibilities: *none, one or multiple* adversaries. Team structure has two
options: *individual* or *team-based*. These two optional dimensions generate the six possible values. An individual team-structure with three possible adversary-structures creates single-player, two-player and multi-player. The team-based team structure allows the three remaining options.

**CONTROL**

8. *Mutability*. Defines if player game control possibilities are mutable. If not (e.g. results in terms of win-loose or points) it has *static mutability*. Temporary mutability is labelled *powerups* (e.g. *Fire Mario* version of regular Mario that allows temporarily to throw bouncing fireballs at enemies). If the powerup is permanent, then the game is classified as *Experience-levelling (XL)*.

9. *Savability*. Considered to be outside the scope of gameplay, but included due to significant influence on gameplay. The options are *non-saving*, *conditional* and *unlimited*. Non-saving games necessitate a more careful play strategy since game outcomes are permanent. Conditional saving is only allowed at certain positions set by the game creator. Unlimited savability has no limitations.

10. *Determinism*. Defines whether the game produces the same result at given position and player input. In this case it is considered *deterministic*. If a game produces unpredictable results it is labelled *non-deterministic* since it generates two different results given the same input.

**RULES**

11. *Topological rules*. Possible values: *Yes* or *No*. A topological rule is defined in terms of certain states at a given position in the gameworld. The opposite of a topological rule is a universal rule.

12. *Time-based rules*. If a rule changes with passing of time/changes of certain states, it is classified as a time-based rule. *Yes* or *No* are the possible values.

13. *Objective-based rules*. Determines if outcomes of games are governed by specific objectives. It has *yes/no* options.

This framework, even though decidedly focusing on different aspects, bears resemblances to the Aarsethian typology of textual communication: it treats video games as mechanical systems or machines. In this case it is seen as a system that generates visual representation of space and time – a world that is governed by rules and can be controlled by different player-
configurations. The relationship between the reader/user/player and the video game/text machine is that of accessing and exploring parts of the systematic machine-like game world. The user/player is given a perspective by which an environment is explored with various controls and rules, which is identical to the cybertextual model. Several variables also share corresponding criteria: the Perspective variable of the multi-dimensional typology is similar to the Access and Perspective variable of the cybertext ditto, as these variables determine what type of access the user has to the game field/scriptons. The multi-dimensional Environment variable corresponds to the cybertextual User-functions since it states how much the user is allowed to influence the environment or scriptons/textons. Determinism is paralleled by Determinability, when it concludes the predictability of a traversal function. Time-based rules are similar to Transcency when they state whether certain states/scriptons change with the passing of time.

<table>
<thead>
<tr>
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<tr>
<td>Perspective</td>
<td>Omni-present/Vagrant</td>
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<tr>
<td>Topography</td>
<td>Geometrical/Topological</td>
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<tr>
<td>Environment</td>
<td>Static/Dynamic</td>
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<td>Pace</td>
<td>Real-time/Turn-based</td>
</tr>
<tr>
<td>Representation</td>
<td>Mimetic/Arbitrary</td>
</tr>
<tr>
<td>Teleology</td>
<td>Finite/Infinite</td>
</tr>
<tr>
<td>Player structure</td>
<td>Single-player/Two-player/Multi-player/Single-team/Two-team/Multi-team</td>
</tr>
<tr>
<td>Mutability</td>
<td>Static/Powerups/Experience-leveling (XL)</td>
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<tr>
<td>Savability</td>
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Table: Summary of Aarseth, Smedstad and Sunnanå’s multi-dimensional typology of games

BEYOND CYBERTEXT

The main obstacle to the application of cybertext in 3D games concerns the focus on signs that relay verbal information. Most current video games use graphics and moving images as their main form of expression, and can-
not consequently according to this definition be considered “texts”. Admittedly, extensions are needed and Aarseth acknowledges this fact, and a piece of the puzzle is provided with the schematic model of the internal structure of adventure games. The reasons for choosing the adventure game genre are evident since it is many regards the archetypical “game”, as evidenced by the following quote that analyses the influence of the pioneering adventure game *Adventure* (1976) made by Crowther and Woods:

> But the ergodic structure invented by Crowther and Woods twenty years ago are of course far from dead but instead persevere as the basic figure for the large and growing industrial entertainment genre called, by somewhat catachrestic pleonasm, “interactive games.” A game with fixed paths and choices is much less interactive than a game with goal-oriented, flexible opponents. If these games are interactive, what game isn’t? Here, as elsewhere, interactive is just another word for computerized. It is a paradox that despite the lavish and quite expensive graphics of these productions, the player’s creative options are still as primitive as they were in 1976.

(Aarseth 1997, p. 102–103)

The second important contributing factor is the “story-like” nature of adventure games, which makes them suitable candidates for literary analysis, but also rewarding to players expecting traditional story-telling “linear media”. Adventure games, text or graphics-based, are predominantly set in imaginable (spatial) environments with human(-like) main characters controlled by the player that explore the settings and perform, usually puzzle-like, actions that unlock new surroundings with fresh adventures. Endings with definite outcomes are frequent, or using multi-dimensional typology terms, adventure games primarily have a finite teleology. Many popular contemporary video game genres are similar to the original adventure game genre: (most) Fpss, action, (obviously) adventure games and to some degree MMOGs.

To expand theoretically into the world of “multimedia” Aarseth, like Smedstad and Sunnanå, extends his framework with the multi-dimensional typology. It does not, though, incorporate the dimensions and intricacies of these media forms – each media form (text, graphics, animation, sound, etc) is treated as a directional flow of information. Consequently, the model provides an abstract, possibly too abstract, model of adventure games – not to mention an exhaustive theory of the video game medium. All of these perspectives, the cybertext model, the internal model of adventure games, and the multi-dimensional typology, reaffirm the perspective on games as machines.
With minor modifications the cybertexual model might work for images and graphics as well. It is indeed challenging to incorporate the “languages of signs” and the associated philosophies/theoretical frameworks such as semiotics or linguistics. As poststructuralist Jacques Derrida famously claims in his seminal *Of Grammatology* (Derrida 1976): “there is nothing outside the text”, i.e. implying that everything can and should be treated as texts in the broadest sense. Everything is a signifying system with no absolute and isolated entity of meaning but only differences and relations to other entities. Images and graphics are also signifiers, and are hence not much different from letters, from a semiotics point of view. This is one possible trajectory for theoretical development and is sustained by a number of scholars trying to fuse semiotics with the cybertext perspective and possibly even narrative theory, e.g. Kücklich (2002). In *Cybertext* Aarseth goes to great lengths to analyse semiotic approaches to the phenomenon of “interactive texts” such as Per Age Brandt’s *semiotics of the interactive*, J. David Bolter’s attempts to develop the notion of *cybersemiosis*, Tomás Malodonado’s critique of the lack of “interactive” semiotics, Jens. F. Jensen’s *computer semiotics* and finally Peter Bøgh Andersen’s semiotic classification of computer signs.

Brandt claims that neither interpretive nor structural semiotics have managed to define a “symbolic machine”. Aarseth opposes this view, pointing out that many semioticians, such as Umberto Eco and others, have addressed these issues. Aarseth claims that the omission is rather a result of the inability of the semiological paradigm to incorporate cybernetic ideas, than a lack of attempts to develop the perspective. Bolter, on the other hand, insists that the theory of semiotics becomes patently true in the computer medium, and attempts to connect these to hypertext theories as “the embodiment of semiotic views of language and communication”. Another semiotician, Tomás Maldonado argues, when analysing virtual reality, that semiotics has not managed to develop theories to accommodate elements of “interactive dynamics” because the theoretical paradigm of semiotics is predominantly developed for static objects. In order to develop semiotic theories of the “interactive”, Jensen posits the interface as a border between human semiosis and machine processing. Computer semiotics focus on signs generated by information processing of the machine onto the interface where they are later interpreted and translated into other signs (*semiosis*). A contradictory example to this approach consists of *emergent properties* of complex software programs such as mutating computer viruses or artificial intelligence software. They produce results that its creators could not predict and the question is then whether computer semiotics
should be limited to the results (sign manifestations), or whether the internal structures should also be taken into account. Can computer-generated emergence be analysed with semiotic approaches?

Andersen, on the other hand, attempts to create a semiotical classification of computer signs based on four features which generate seven classes of signs. After considerable examination of this classification Aarseth concludes that two of the features handling and activeness lack stringency to separate user and system autonomy causing substantial inconsistencies in the classification framework. This is caused by the limitations of focusing solely on the interface and its sign, and not on the underlying mechanisms of software and the text machine. Aarseth does not reject all types of computer semiologies, but concludes that it is erroneous to study surface expressions alone, because it ignores the duality of the cybernetic sign process, which exists on a material level, but also on a presentation level (c.f. film strip and silver screen projection):

In the cybernetic sign transformation, however, the relationship might be termed arbitrary, because the internal, coded level can only be fully experienced by way of the external, expressive level. (When inactive, the program and data of the internal level can of course be studied and described as objects in their own right but not as ontological equivalents of their representations at the external level.) Furthermore, what goes on the external level can be fully understood only in light of the internal. Both are equally intrinsic, as opposed to the extrinsic status of a performance of a play vis-à-vis the play script. To complicate matters, two different objects might produce virtually the same expression object, and two different expression objects might result from the same code object under virtually identical circumstances. The possibilities for unique or unintentional sign behavior are endless, which must be bad news for the typologists.

(Aarseth 1997, p. 40)

Aarseth thus concludes that the semiotic paradigm is not suitable for the analysis of cybernetic sign phenomena, as semiotics does not comprehensively incorporate the internal dynamics of sign producing processes.

OMITTING TEXT AND ITS CONSEQUENCES

Another trajectory is the attempt to develop the cybertext theory in line with Aarseth’s analysis. The cybertext model is based on letters presented in two-dimensional spaces. However, in simple cases it is partially possible to imagine two-dimensional graphics games as a “traditional” (two-dimensional) text-based cybertexts. The game of Tetris will serve as an illustrative example. The objective of the game is to manipulate tetrominoes,
i.e. shapes composed of four square blocks, which fall down the screen (with fixed dimensions), by moving/rotating these shapes and attempting to create a horizontal line of blocks without gaps. When such a line is arranged, it disappears, and the blocks above (if any) fall down and assume the place of the line that has disappeared. From a cybertext point of view, it can be analysed as follows: the seven possible configurations/shapes of the tetromino constitute the textons. The number of scriptons is hypothetically endless since the game is finished only upon errors by the player. Hence, Tetris has Intratextonic Dynamics (I/DT). The traversal function randomly produces new scriptons with the passing of time and can thus be considered indeterminate and transient. The game does not require the reader/player to play a strategic role as a character in the world of the game. Access is restricted since not all scriptons can be accessed at any given time. Linking between scriptons is not available. The user function of Tetris must be deemed explorative since the user is not able to configure or add textons. These are only produced randomly and transiently by the traversal function. The user “explores” the flow of scriptons by attempting to arrange them in lines. The cybertext model is equally applicable in “normal” as well as this case, since the interface/presentation layer of both cases are similar. Tetris’ interface is created like a page of text, similar to e.g. hypertext, with horizontal rows of signs/letters which are manipulated in different fashions. None of the findings of the core cybertext theory are lost through the replacement of Aarseth’s definition of text, with a broader notion of text. A wider definition inspired by semiotics, that embraces signs/text on a fundamental level without limitation to “verbal information signs” – a “semiotic text” of sorts.

The complexity of the analysis increases significantly when this new “semiotic text” is applied to video games with other interfaces, i.e. three-dimensional graphics. Suddenly the perception of “text” depends on space, light, perspective, visibility, distortions, size, position, colour, shapes, similarities, references etc. – an ocean of dimensions is uncovered with this modification. The intricacies of literature such as tone, vocabulary, narrative perspective, genre, rhythm etc. are replaced by a new set of aesthetic values and nuances. These are the nuances that the multi-dimensional typology attempts to incorporate by positing time, space, player structure, control and rules as dimensions of three-dimensional video games.

What this study proposes is to evolve the cybertext model by omitting Aarseth’s definition of text (relaying verbal information) and replacing it with a new and significantly wider perspective that incorporates any visual sign as texton and scriptons. No new definition of text is needed, as this modification concern the contents of textons/scriptons. All the remaining parts of the cybertext theory remain unaltered. Consequently, a video game
can be seen at its cybertext core as a set of textons that are modified and generated into scriptons by means of the traversal function. These three elements constitute the fundamental building blocks of all contemporary game development. The theory becomes a hybrid between the strictly text/letter-based cybertext theory and a full-blown semiotic reinterpretation of the cybertext model. Aarseth’s internal structure model of adventure games, and the multi-dimensional typology offer rewarding perspectives on the traditional model, but do not in any significant way invalidate the modified core of the cybertext model, or give rise to any major points of incompatibility.

Similarly, the cybertext typology of textual communication remains valid. Its seven variables provide similar insights to the underlying textual/sign producing mechanics of the cybertext. Particularly useful is the User function that sheds light on the fundamental level of “interactivity” that is bestowed upon the user. Most simple two/three-dimensional single-player video games have explorative user functionality, as the user mainly explores levels of graphical representations of puzzle solving assignments, i.e. graphical versions of adventure games. Some video games allow the graphical world of the game to be altered permanently – equivalent to configuring the textons and affecting the way scriptons are produced by the traversal function. Many MMOGs also objects to be permanently added and/or modified in the world of the game. Finally, the textonic user function is rarely seen but is allowed by some alternative versions of MMOGs most prominently by Second Life which allows arbitrarily designing objects, and even specific behaviour, in a three-dimensional virtual world.
DECONSTRUCTING THE NARRATIVE OF VIDEO GAMES

Hitherto, the analysis has focused on the nature of the cybertextual machine, and (partially) its relation to the reader in terms of “interactivity”, but the point of the entire cybertext model is to provide an alternative perspective on narratives of video games, or more precisely demonstrate the absence thereof. To describe Aarseth’s conclusive insights concisely: the cybertext theory argues against the existence of narratives in video games or ergodic texts. In these types of text it is not the narrative that generates meaning, experience and immersion and hence excludes it from the group of “narrative media” such as most art, cinema, theatre and literature. As an alternative to narrative Aarseth posits the video game as a cybertextual machine that involves the reader in a cyborg relation in a cybernetic loop-based production of dynamic texts. The dynamics of cybertexts, and the consequent altered new positions of authors and readers render the notion of narratives fruitless in the context of video games.

APORIA AND EPIPHANY

To demonstrate his contested perspectives Aarseth strikes strategically to the heart of the narrative-based hypertext theory. Its theorists, and rightfully so, treat most “new (electronic) media” as their empirical dominion since many new types of media are characterised by non-linearity – a notion at the centre of the hypertext framework.

Highly critical of the theoretical hyperbole surrounding hypertext, Aarseth dismisses the many theoretical attempts to associate hypertext perspectives with post-structuralist theories and in particular as “embodiments” of the Barthesian notion of tmesis. Instead of removing authority from the author of the codex text by skimming and skipping (tmesis) as claimed by hypertext theorists, the reader has only one option: reading/exploring the hypertext network as constructed by the author, according to Aarseth. Hypertexts should not be seen as a homogenous general text cat-
egory considering the vast differences between different hypertexts. Each example should be treated as a potentially different technical medium, depending on the characteristics and possibilities afforded by the particular hypertext system. Aarseth illustrates this with the seminal hypertext work *Afternoon* by Michael Joyce (1990), considered to be one of the first examples of hypertext fiction. Despite being praised by hypertext proponents as an “infinite magic book” with unmappable interactive fiction content, *Afternoon* consists of (merely) 539 (network) nodes comprising about 100 codex pages of text. Furthermore, often presented as the epitome of post-modern literature the work relies heavily on classical modernist devices. The work does not entail interactive narration, *i.e.* user-directed story generation, since the user is only allowed to choose (predominantly pre-existing) text paths. A labyrinth of texts does not constitute a story generator tailored to unique user/reader decisions, but rather a text landscape navigated by the user.

The main point of contention concerns what to call this process of traversing and exploring the hypertext structure. Is this process of navigation a form of narrative, or is it something completely else? Aarseth considers this to be a question of hypertext rhetoric. Hypertext rhetoric does not focus on design rules for hypertext communication/production, but prefers to emphasise a descriptive perspective on aesthetic text – discovering intrinsic tropes and figures rather than assuming the hypertext constructor’s/author’s point of view. Drawing on the 19th century rhetoric of Pierre Fontanier consisting of a taxonomy that divides rhetoric into figures and tropes, Aarseth appends a new class of non-linearity figures among several classes of “les figures non-tropes” *i.e.* rhetorical figures. The figures of non-linearity contain the following subclasses: forking, linking/jumping, permutation, computation and polygenesis (Aarseth 1994). Linking/jumping is considered the master figure of hypertext, while others except forking (the simplest form of non-linearity) are associated with other forms of cybertext. Lacking is the master trope of hypertext, which is defined as aporia.

Aporia in philosophy or rhetoric is principally associated with an expression of doubt or uncertainty, or an insoluble philosophical puzzle, in codex literature a challenging claim or passage that encourages the reader to uncover the meaning and solution to the inquiry raised by the aporetic claim(s). In hypertext (literature), aporia transforms into a master trope. Hypertext creates both incitement and requirement to search for meaning and solution to claims raised during the process of hypertext exploration. The traversal of texts and paths, frequently several times, is a search for a conclusive whole to the fragmentary texts provided by the hypertext. No promises of the existence of a meaning of the whole are given by the hypertext – in other words an aporia. In a codex text aporia is provided on
a rhetorical level – the solution to the philosophical puzzle raised by the
text might not be revealed, or even if it is there is no guarantee that it will
be satisfactory. Similarly, the hypertext reader searches without guarantees
for a solution, but predominantly on a textual level. When, however, a so-

lution is found in the hypertext another pivotal master trope appears: the

epiphany. It instantly replaces the incertitude of the claustrophobic aporia
– an inevitable result of the terminated aporia and a reward for the strenu-
ous aporetic quest. All exploration of ergodic texts must somehow result
in something – a goal towards which the reader is somehow drawn to – a
driving force. Usually the mechanics of the text machine provide plentiful
of indications to generate the driving force to the gamer/reader. It constitu-
tes a dialectic that produces the meaning of video games/ergodic texts.
Combined they create the fundamental tension that generates the essence
of the video games medium:

Together, this pair of master tropes constitutes the dynamic of hy-
pertext discourse: the dialectic between searching and finding typical
of games in general. The aporia-epiphany pair is thus not a narrative
structure but constitutes a more fundamental layer of human experi-
ence, from which narratives are spun.

(Aarseth 1997, p. 89-90)

For instance, in the game of Tetris aporia is constituted by the challenge
of continuously arranging the falling shapes into horizontal lines. When
this is achieved through the agile reactions and perceptive geometrical cal-
culations of the gamer, the resulting consequence is epiphany. A visual
representation, but also reward, is provided in the form of the disappear-
ance of blocks. This not only terminates the aporia/quest for a particular
sub-objective of the game, but also brings the game forward to a new quest
and new aporias. Aporias and epiphanies can be found in all video games.
The shapes and forms they take are as varied as there are video games.

DISRUPTED NARRATIVE COMMUNICATION

The aporia-epiphany pair does not, however, provide a comprehensive de-
construction of the narrative perspective on video games. To further elabo-
rate the narrative dimension of video games/ergodic texts Aarseth presents
a model of the communication discontinuity in ergodic texts, and in par-
ticular hypertext fiction (such as Afternoon).

In a classic Aristotelian narrative the communication between author
and reader is quite straightforward: the author writes a text which is as-
sumed to be presented by a fictional narrator. The author is separated from
its narrator, this text e.g. is not me – Mikolaj Dymek, the author – in my entirety, but rather a text narrated by a fictional narrator that is a selected and limited version of my opinions on the particular case of video games. In this particular scientific non-fiction text there is no narratee with whom the reader identifies with, but such an entity is predominantly present in most of fiction, as elaborated by Joseph Campbell in his seminal analysis, *The Hero with a Thousand Faces* (2004), of the monomythical hero and its journey that generates a narrative structure present in most fictional works from the Biblical Jesus through *Hamlet* to *Matrix*. Illustrated in the figure below, is the Aristotelian narrative communicates between the author and the reader.

<table>
<thead>
<tr>
<th>AUTHOR</th>
<th>NARRATOR</th>
<th>NARRATEE</th>
<th>READER</th>
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Figure: Classical narrative

In modernist fiction, however, there is a rift between the narrator and the narratee. In one of the most important and renowned modernist work *Ulysses* (Joyce & Kiberd 2000), the author James Joyce presents a work of fiction based on experimental stream-of-consciousness writing, allusions, references and parodies where the narrator seems to communicate beyond the intended listener. The classic modernist fiction characteristics of discontinuous narratives, multiple narrative perspectives, intertextuality, narrative juxtapositions, social and cultural decontextualisation, the questioning of social standards etc, separate the narrator and narratee. There is a narratee (in Ulysses, the character of Leopold Bloom) with whom readers can identify. The narrator discusses topics beyond and detached from the narratee that are not necessarily intended for the ideal reader, or challenging to relate with the narratee.

<table>
<thead>
<tr>
<th>AUTHOR</th>
<th>NARRATOR</th>
<th>NARRATEE</th>
<th>READER</th>
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Figure: Modernist fiction

Finally, in hypertext fiction of *Afternoon* there is discontinuity in the communication between author and reader. The communication between narrator and narratee is similar to the classical narrative: the narrator presents a cohesive and comprehensible narrative about a narratee. However, the relationships between author and narrator, and narratee and reader are in trouble, according to Aarseth. The cause of this is the aporetic struc-
ture of the hypertext fiction. As the reader attempts to perceive a narrative and also identify with a narratee, he/she is continuously interrupted and thrown between different paths of the hypertext narrative. Within the fragments (the hypertext nodes) of text, the narrative makes sense with a cohesive narrator-narratee relationship. The reader maintains communication with a narratee, but this relationship is repeatedly distracted, as the narrative is fragmented and distanced by the hypertext structure. This sabotaging force also generates a discontinuity between author and narrator, since these disruptions are more influential than the narrator and most definitely outside the direct control of the author.

| AUTHOR | NARRATOR | NARRATEE | READER |

Figure: Communication discontinuity in hypertext fiction (Afternoon)

The discontinuity of narrative communication is also present in video games. An illustrative case: Grand Theft Auto III (GTA3), which is a three-dimensional game set in a fictional parody and vulgarisation of a typical East-coast American big city called Liberty City, in some aspects resembling New York City. The narratee is a nameless criminal character protagonist that the player/reader controls (and identifies with). In order to revenge the betrayal by his girlfriend the protagonist must join various criminal organizations and execute (sometimes literally) criminal missions of various difficulties using different vehicles, tools and guns. Highly violent and controversial, it provides a caricature of a typical Hollywood gangster movie narrative.

GTA3’s author is the game developer who created the video game, including a broadly branching narrative containing the protagonist as narratee. The “narrator” in this case consists of several media/entities. On an abstract level the narrator could be located in the audio-visual interface of the game, but this is indeed a challenging assumption. The existence of a narrator is also precarious in the film medium (Larsson 2000) – obviously film narration exists (Lothe 2000), but what type of entity is narrating in film? Is it a “film voice” that narrates a narrative through moving images, cuts, sounds and music? In the video game medium, this problem mainly resides in the process of transferring the object of study from text-based phenomena to those based on “interactive” objects such as images, signs and graphics. Suffice it to say, text-based hypertext fiction is easier to perceive through the eyes of traditional narrative theory than with graphics-based video games. Nevertheless, there is inevitably narration in GTA3 and “something” narrates it. This “something” consists of a plethora of narra-
tion devices. In GTA3 the narrative is communicated through FMVs (Full Motion Videos), texts on screen, signs inside (e.g. road signs) and outside the game world (e.g. a big blue arrow hanging in mid-air indicating which car to enter), sound/voice (e.g. telephone calls) and in general pre-scripted actions and behaviours of objects that the gamer encounters inside the game world.

The GTA3’s narrative branches considerably into several directions, and allows gamers to explore criminal missions (presented with pre-recorded FMVs) in quasi-arbitrary (linear) sequence, but also in different quantities (Dymek 2004b). Hence, two game sessions of GTA3 can produce different sequences and quantities of missions – the structure is similar to conditionally linked nodes in a hypertext narrative structure. At certain points in the game, when particular objectives have been met, the different narrative paths/branches are narrowed to one single dramatic turning-point. For instance, after about a third of the game the Leone Family Mafia decides to betray the narratee/protagonist/gamer. The gamer/reader is afforded two options: join (the mafia boss’s girlfriend) Maria and escape the Mafia or doubt Maria and refuse her escape plan. The only problem is that if Maria’s offer is declined it will lead to the protagonist inescapably being shot and killed. Fortunately, this only means that the protagonist returns to the previous save-point – i.e. GTA3 has conditional savability (see multi-dimensional typology of games). Thus, the protagonist is given a second chance to answer Maria’s question which now has been even more clarified (repeated): death or escape by boat? That is not an option, but an illusion of option with a forced narrative turning-point. The gamer must follow Maria, and has no other option to evolve the narrative or continue the video game in a meaningful way.

If the death option is repeated for the sake of rhetorical choice, the following question soon arises: is this the “interactive video game narrative”? Perhaps every new attempt constitutes a separate alternative narrative, or does it belong to the pre-scripted narrative of the author? What is the relation between these unsuccessful attempts, and the “master narrative” of Maria’s escape? One might argue that the narrative structure of GTA3 entices and convinces the gamer to select the escape option. However, if the point is to understand how to want to join Maria’s escape, then where are the choices or “interactive narrative”? Should not “interactivity” adapt and react to user’s actions, instead of giving delusions of narrative options?

This particular narrative communication discontinuity is not only limited to this illustrative example, but exists throughout the entire mission-based structure and the conditionally linked progress of the GTA3 narrative. A mission cannot be ignored – it must at some point be solved. Multiple mission employers exist, and consequently also several mission queues,
which must be solved in the linear order predetermined for each individual queue. Furthermore, this argument concerns involves all gamer-decided actions that result in multiple outcomes, such as the gamer’s decision to fire a gun, or where to fire the gun. Mission solving is an agglomeration of these minor actions. The core of the argument is as follows: is the repeated and exploratory problem-solving of these missions/actions part of the narrative? Are the failures included in the narrative? The communication between “video game narrator” and narratee is functional since narrative communication within this fragment is accurate. However, what is the state of the narrative communication between author/game developer and narrator? Is it accurate to claim that author communicates through narrator and narratee to the reader in the classical way? The author is unable to fully control choices or number of attempts. This is up to the reader to decide and accomplish. Are the failed attempts not part of the narrative? If yes, what is the narrative meaning of repeating aporetically the same general events during yet another mission attempt? As shown by Aarseth there is a discontinuity between author-narrator, and between narratee-reader. The reader has difficulty personifying with the narratee as it constantly repeats the same events, dies/resurrects and experiences the same narrative elements. How is the reader/gamer supposed to fully personify, in the same manner as in traditional narratives, with the narratee as he/she is constantly jumping between different paths and repetitions of the narrative in order to resolve the aporetic struggle and reach epiphany?

Further alienation and distancing from the main narrative is caused by the unfocused narrative components. Missions are deliberately isolated contextually from others. An illusion of narrative consistency is provided through references to previous missions, but this is as hollow as it is predictable due to the universal applicability through the local (employer) conditional queue-linking. Furthermore, the sequence of missions accomplished between different employers does not affect the progression of the narrative – sooner or later the protagonist arrives to a number of predefined and forced narrative turning-points. This distancing of an artificially static narrative is strikingly apparent to the gamer/reader when contrasted to the dynamic options provided during “interactive” play in the game world. The GTA series are lauded for impressive in-game freedom, but the narratives are as static, distant and disrupted as in the case *Afternoon*.

Any claims of readers becoming “reader-authors” ignore any discontinuities present in hypertext fiction and “narrative-driven” video games. Aarseth claims readers become “reader-readers” since he/she must read him/herself and the decisions made during the reading/exploration of the text, becoming “metareaders” of the hypertext structure, by mapping the
network and reading this map of his/her own reading, while continuously reading the hypertext itself. What should this process be called?

We might label *Afternoon* a *reluctant narrative*, or an *antinarrative*, or a *sabotaged narrative*, terms typical of modernist poetics. But perhaps the best descriptive term for *Afternoon* is *game of narration*. If we accept that narration can take place without narrative (as defined by the narratologists), we might come up with a better concept than weak and negatory terms such as *antistory* and *non-linear narrative*. *Afternoon* is not an antinarrative; it is something other than narrative. [...] the aporia-epiphany structure is not a narrative device, although it willingly generates narratives when experienced. [...] there is no reason that the basic elements of narrative cannot be used for other purposes. For instance, both stories and games of football consist of a succession of events. But even though stories might be told about it, a football match is not in itself a story. The actions within the game are not narrative actions. So what are they? The adjective I propose for this function is *ergodic*, which implies a situation in which a chain of events (a path, a sequence of actions, etc.) has been produced by nontrivial efforts of one or more individuals or mechanisms.

(Aarseth 1997, p. 94)

Claiming that video games do not generate narratives would be false, but claiming that video games *are* narratives is an assumption that Aarseth’s entire theoretical perspective opposes, which constitutes one of the main points of objection vis-à-vis narratologists. His pungent analogy to football has spawned other similar comparisons (Eskelinen 2001), and illustrates effectively the difference between a series of ergodic events and a story. A game of any kind can produce the most interesting and vivid stories to their players – but the game *in itself* cannot be treated as a narrative.

**INTRIGUE, INTRIGANT AND INTRIGUEE**

There is *some* type of story-telling going on in many video games, but how is the narrative communication performed in cybertexts? Some “interactive fiction” theorists, *e.g.* Niesz and Holland (1984), Ziegfeld (1989), and Randall (1988) approaches this question by means of Wolfgang Iser’s reader-response theory of Leerstellen, which focuses on the reader and how s/he fills in the blanks or gaps in the text of the author. The reader fills in significant blanks in the plot (“Leerstellen”), and (hopefully) discerns a story behind the events of the plot thus “co-authoring” its narrative. This theory suits the needs of certain theorists viewing video games primarily as a gamer/reader-oriented medium, thus enabling further theoretical
expansion into areas of reader emancipation and politicisation of the communication process.

Though quite compelling in its theoretical compatibility, Aarseth dismisses this explanation as the relationship between plot ("syuzhet") and story ("fabula") is not consistent with the traditional setup. The distinction between plot ("syuzhet") and story ("fabula") stem from the school of Russian formalists, where story, generated by the reader when reading, is the chronological event sequence, while plot is the presentation of those events, and generally constructed by the author. The difference between these notions is more nuanced than merely between the text "as read" and the "chronology" of the text – all narrative texts have a difference in the event sequence of their representation. Plot and story instead imply abstracted literary concepts that define relationships and narrative communication between author, reader and text. In Iser’s Leerstellen theory plot gaps are enriched by the reader, resulting in a reader-generated understanding of the story. Some scholars see this as the way gamers of video games relate to the “interactive fiction”. However, Aarseth claims that instead of discerning the full story, the plot is reduced to one successful single plot (“the winning plot” through the video game options). Readers/gamers do not fill in the gaps in plots, but are instead presented with a multitude of options of how to perform the plot. It could be argued that the reader becomes the story, or that the story ceases to exist in a traditional way. Aarseth argues stories are disintegrated and forces the attention of the player on an elusive plot:

Instead of a narrated plot, cybertext produces a sequence of oscillating activities effectuated (but certainly not controlled) by the user. But there is nevertheless a structuring element in these texts, which in some way does the controlling or at least motivates it. As a new term for this element I propose intrigue, to suggest a secret plot in which the user is the innocent, but voluntary, target (victim is too strong a term), with an outcome that is no yet decided – or rather with several possible outcomes that depend on various factors, such as the cleverness and experience of the player.

(Aarseth 1997, p. 112)

Aarseth introduces the notion of intrigue to explain the narrative communication in adventure/video games. Intrigue connotes secret schemes that plot to involve and influence target(s) as part of the greater scheme. The intrigue cannot be found on any particular level of the text, but determines what is transmitted with the text, rather than how. Intrigue is considered here to be more than a text/presentation dimension, covering issues of meaning and structure within video games. To the term of intrigue
Aarseth adds the associated concepts of *intrigant* and *intriguee*. *Intrigant* is the target of the intrigue and main character in the video/adventure game, which the player controls and identifies with, similar to the notion of narratee in narratology. The intrigant is the “architect of the intrigue” – an implied author creating the intrigue and involving the intriguee, but is not necessarily interested in the outcome of the intrigue, mostly focused on its construction.

Aarseth uses the intrigue-intrigant-intriguee concepts to demonstrate the inadequacy of notions of “author”, narrative and classical communication theories, in the case of text-based adventure games, and in particular *Deadline* by Marc Blank from 1982. This adventure game is best described as autistic since it corresponds to many of the characteristics of autism. There is no traditional voice of the author, but instead a plethora of voices from inside and outside of the intrigue. Notions of a traditional “author” become problematic as the voice in an adventure game is used for different types of communication, narration and purposes.

Once again, Aarseth’s example of Deadline provides a more compatible comparison with narrative theories, than a comparison with vivid three-dimensional video games. What is the “narrating voice” of three-dimensional graphics and sound? Nevertheless, applied to Grand Theft Auto III (*GTA3*), the intrigue-based terminology offers a comprehensive alternative explanation. From a Leerstellen perspective, the “plot” is presented by means of *FMV* (post-edited and pre-scripted movie scenes), whose both sequence and initiation is linear and in many regards irrelevant of the decisions of the gamer. The plot is reduced to a set of conditionally linked video sequences, strikingly similar to a simple and static hypertext novel with forking story paths. Furthermore, critical turning-points reduce the branching plot-tree to a single path, through which the gamer/player/reader must pass monodirectionally. The story could be seen as emerging from the plot. Unfortunately, that is not the case in *GTA3*, where user-actions and plot/story seem to be separated levels of communication. The player controls the narratee’s actions, but in a traditional narrative way the connection between the actions and the story are detached. Regardless of different actions and different missions, resulting in (slightly) different plots, the story always arrives at the same dramatic turning-point. This becomes in a sense a *more* restrictive narrative than a traditional (codex) book of fiction – a reader of a book can always skip a section or jump to the final chapter – in *GTA3* there is no such possibility since a gamer must carry out missions, must join Maria’s escape etc. The story is not interactively co-authored by the gamer, but the story is creating an “interactive game” on top of it, producing an illusion of narrative command and interactivity, when in reality it is a restricted game with in-game actions that trigger conditionally
linked events of the underlying plot/story. What is the link between the gamer’s actions, the plot and finally the story of GTA3? The plot/story is a static and slightly adaptive (“non-linear”) structure that is not generated from the user-enriched plot, but can rather be forced upon the gamer in order to provide an illusion of “interactive fiction”/story-telling.

An alternative explanation is a GTA3 intrigue. The intriguee is manifested by the main character, a projection of the gamer, existing in an entire intrigue world, whose sole purpose is to involve the main character/intrigee in its internal dynamics. Instead of the subordinated role of (traditional text) receiver/reader, the user/gamer is drawn into the video game – not because there is no alternative way, but because the user is intrigued and wants to explore making the notion of a pre-authored narrative not relevant. Analytically dividing a narrative into a story and a plot also divides two domains of reader/gamer, and of author/programmer. This intrigue-perspective eliminates this distinction. The intrigant is not the implied programmer/developer/designer or any other video game medium related synonym of author. The intrigant is also the narrator of the text/video game, in a traditional narratological and functional sense. Albeit vague, the best approximate location of the video game narrator is inside the elusive “game engine” that constitutes the technical platform upon which the game is enacted. The intrigant is similar to a narrator, though different in its functional properties due to the multitude of dimensions of this “voice”. It is an emergent position which is the result of the video game/text machine – it is a “ghost” of sorts that controls the intrigue. It could be perceived as an extension of the author or creator of the machine, but the following quote illustrates the difference:

[…] consider the imaginary being we invoke when we address our (ill-behaving) computers as “him” or “it” (e.g., “Oh no, he crashed again”). We are not referring to the person who wrote the program we are using (the implied programme) nor the voice that informs us that things have gone wrong (“Bad sector reading drive A:”) – because often there is no such report, just the bad news itself – but to that eternal whoever-it-is who ultimately controls every program we use and who is, quite deliberately, driving us crazy with its irrational behavior. This is the intrigant: an unwelcome devil in real life but pleasure-giving Mephistopheles in the cybertext.

(Aarseth 1997, p. 120)

GTA3 is quite rewardingly seen as an intrigue. The initial betrayal, the comeback, the progressing career through criminal organizations and the final revenge are all part of the intrigue. GTA3 does not dictate the player experience through a narrative, but lures and intrigues the player/intrigee into its world to such a degree that decisions are taken in belief that they
are independent, when in fact they are the fortunate results of (presumably) subtle manipulations of the intrigant.

Narratives, with their separation of story and plot, provide an imprecise and inaccurate depiction of the reader-text dynamics, and also a static separation of gamer/reader vs. author/programmer positions. Intrigue does not fully exclude the presence of some type of story – an intrigue usually involves predictions, plan and a sequence of events and other elements present in a story. Furthermore, the intriguee places the position of the player within the intrigue in a way which narratologist have to clarify and modify as regards traditional narrative theories – a static “blank-filling receiver”, which inevitably posits the reader outside of the text. Intrigee also more easily incorporates the dimension of author-reader communication. The paradigmatic difference between static and dynamic texts in terms of narrative communication must be explained, and extended.

In place of the problematically positioned author, an intrigant is introduced – much in line with Aarseth’s mechanical cybertextual machine perspective. The video game is a text machine with a mechanical system that the reader/intriguee becomes part of, instead of a more or less passive receiver of “interactive narratives”. The implied author/designer/developer/programmer constructs a text machine, and then leaves this machine in the hands of the user/gamer to engage with. Certainly codex literature is also left in the hands of the reader, and can be interpreted in thousands of ways outside the control and intentions of the author. Nevertheless, its (physical) text and plot is quite static and rigid, compared to the polymorphous and dynamic nature of the video game text.
COMEBACK OF THE STORY: NARRATOLOGICAL PERSPECTIVES

The previous chapters have laid down the fundamental tenets of the ludological perspectives. A perspective based on game medium as a dynamical text machine that involves the reader in a cybernetic system whose textual communication depends on the internal organization of the text machine. It opposes the notion interactivity and particularly if combined with narrative explanations of the medium. Narratives are not viable descriptions of the textual communication in video games, is the conclusion of the perspective.

But what is the narratological perspective on video games? In the following chapters this perspective will be presented and analysed. This perspective has arisen as a type of dichotomous opposite within the game studies field, and has generated heavy polemics with ludology. From a narratological perspective the debate is between narratologists and anti-narratologists, believers and non-believers. Inevitably, the notion of narratives in video games is a very powerful one, with origins and theoretical applications in practically all other major forms of media. So successful that some arms of the narratological tradition, mainly film studies, are also expanding into game studies, as will be shown in one of the chapters. The theory has also been extremely successful outside cultural industries in practically all forms of social studies, including business studies.

In the field of game studies the main proponents are represented by Janet Murray, Marie-Laure Ryan and Brenda Laurel. Murray is the most outspoken and salient of these. Her theoretical perspective will dominate the following chapters dedicated to the narratological perspective. Her framework is based on a basic assumption that all video games are types of abstract storytelling inside the Holodeck which is her preferred concept of the medium. Her theory embraces the new properties of the game medium such as the procedural, participative, spatial and encyclopaedic properties of the medium. Furthermore, she emphasises the new aesthetics of the medium based on immersion, (reader) agency and transformation. Murray
also presents an extensive theory of the so-called *procedural authorship* that outlines the challenges and solutions for the author of an interactive narrative medium.

This chapter will answer the following, and other questions and themes: what is the narratological perspective on the video game medium? What is an interactive narrative? How does the theory of predominantly static narratives adapt to incorporate dynamic texts? How do interactive texts influence the position of the reader and author? What are the fundamental characteristics and aesthetics of an interactive storytelling medium? Can film theory explain some of the dynamics of the medium? Is the narratological perspective really that different from the ludological?

The narratologic approach to video games emanates from the much older and wider field of narratology which studies narratives and its structures. The objects of study are all kinds of narrated texts – fiction and non-fiction – as well as dramatic structures, plot devices, characterisation, settings, genres, and literary techniques. It is founded on the notion of the narrative which broadly defined is a story of a sequence of events, and an interpretation of some aspects of the world. To quote the prominent French structuralist literary theorist Gérard Genette’s definition of narrative:

> One will define narrative without difficulty as the representation of an event or of a sequence of events.

(Genette 1980)

Although historically stretching back to Aristotle’s *Poetics*, modern narratology was predominantly founded on the influential works of the Russian Formalist School with Vladimir Propp, Roman Jakobson, Viktor Shklovsky and Yury Tynyanov as its most prominent theorists, active from the 1920s to the 1930s in Russia/the Soviet Union. Their perspectives is a strictly structuralist approach, and the resulting narratological theories also heavily influenced major structuralist thought. They developed and strove for a highly mechanised and structured theory of literature. Stories, tales, story-telling, fiction and other literature should be analysed as a strict system of narrative devices and mechanisms – the aim was to create a theory whose relationship to narratives would be similar to the one grammar has in the field of linguistics. One of many major theoretical contributions of the Russian Formalists was the distinction of story (“fäbula”) and plot (“syuzhets”), which have been analysed previously. Its influence on narratology, and subsequently many theorists of new media, hypertext and video games is extensive. In an age where post-structuralist thought is prevalent, and much of structuralism has been deconstructed and questioned many
times over, Russian Formalists and narratologists still offer rewarding perspectives on recent fields such as video games, as will be shown later.

One of the most noted works is Vladimir Propp’s, *Morphology of the Folktale* (1968) whose theories are heavily applied by one of the most prominent video game narratologists, Janet Murray in her analysis of procedural authorship of interactive fiction in her acclaimed *Hamlet on the Holodeck: The Future of Narratives in Cyberspace* (1997). Propp’s study concerned Russian folktales. He analysed more than 450 (oral) Russian fairy tales, and discovered that beneath a surface of seemingly radically different narratives was in fact an intricate variation of a limited set of generic themes, functions and characters. Propp’s term for the smallest narrative units in these tales was *narrateme*, and the number of functions was 31. Functions consist of descriptions such as “XI. Hero leaves home” or “IV. The villain makes an attempt at reconnaissance” (Propp 1968, p. 28). Propp finds 8 broad characters such as *The Villain*, *The Princess* and *The Hero* (or Victim/seeker hero) among others.

**INTERACTIVE NARRATIVES**

Narratological perspectives on the video game medium are not surprising since similarities to “narrative media” are hard to ignore. Narratology, like all successful theories (regardless of field), has expanded its theoretical boundaries almost to the point of invalidating its central assumptions. Moving from literature, to oral storytelling, to drama, to film and now to video games and beyond, is an expansion that has required significant development and rethinking. From a narratological point of view, the computer has from its infancy been within the realm of codex-based communication. Visionaries such as Vannevar Bush, Ted Nelson and Douglas Engelbart predicted, and to some extent developed, concepts of hypertext media, videoconferencing, emails and online systems among others, several decades before they were realised on a full scale. Imagining the computer as a storyteller was in other words not that far of a stretch. In the 1970s in academic environments, computer science innovations such as MUDs, adventure games and some *ASCII art* (combination of text characters as elements and approximations of graphics) merged two spheres of texts – as interface and “electronic” codex/fiction – gave rise to a new text form that almost instantly entered the domain of literature. Niesz and Holland’s *Interactive Fiction* article (1984) introduced the term of the title to literary studies, by claiming that:

This fluidity of medium and technology implies an essay, fiction, poem, or play almost unimaginably different from what readers have
grown to know, expect, and love these past three centuries. Microcomputers will change our ideas and our practice of literature as much as Gutenberg did, deeply redefining the humanities in the process.

(Anthony Niesz & Normand Holland 1984, p. 127)

Furthermore, they predict an illustrious future for the medium of “interactive fiction”:

We think it likely that within the next decade, interactive fiction, which as of 1984 can boast only a dozen texts that go beyond the adventure game, will become as popular a medium of entertainment as television is today. It could well become a competitor to other forms of light fiction, indeed, an improvement over the usual spy, detective, or romantic stories in being more open, less passive, more challenging to a reader’s mind. Should major writers turn to writing “comput fiction,” we imagine it could become a major innovation, a genre for intense creative activity, like the early novels.

What the genre might look like in two decades, it seems impossible to say, given the rate of technological change. As we write, for example, the genre is advancing yet another technological step. Nationwide computer networks connected by telephone now maintain programs called “electronic novels.” These admit totally free-form fictions: the original author simply starts out the story, and then anyone who wishes can add a chapter. These are, then, multi-author fictions, written not by one or two or even a dozen authors but many, probably anonymous and probably casual and playful rather than authorially committed to writing a Novel with a capital N. In principle there is no limit to the number of possible authors, nor is there any reason in principle why such a novel need ever come to an end. The network makes it possible for the writing to go on and on and for the novel to exist in indefinitely many versions.

The prediction is as accurate as it is erroneous, which very often is the case with this type of prognostic endeavours: they correctly perceive the immense potential of the medium, and also “the next step” (Internet), but they do not foresee the almost total transition to computer graphics. Numerous other researchers, from the fields of hypertext studies, literary studies, linguistics, semiotics and narratology joined the analysis of the intersection of computer texts and literary texts. Who does not want to take part in defining the foundations and boundaries of this new phenomenon, and influencing the way it is perceived? Evidently this has attracted numerous attention, giving rise to an academic equivalent of a gold rush.

Hypertext theorists are concerned with the notion of hypertext, which has existed in the realm of computing since the 1960s, but also as perspective for media analysis. Much of their key arguments have been discussed previously. Prominent hypertext theorists such as Bolter (1991), Landow (1992), Yellowlees Douglas (1994), Joyce (1990; 1995), Moulthrop (1991,
and Lev Manovich (2001) have produced perspectives on hypertext and on a much wider array of phenomena than the core examples, i.e. the notion of hypermedia. Coined by hypertext pioneer Ted Nelson (1965) it is similar to the text-based concept, with the significant extension of other forms of media such as video, sound and graphics. A film can for instance, according to this perspective, be seen as a hypermedia network, consisting of a straight and unidirectional network path of video sequences, i.e. scenes, whose navigation is transient and not controlled by the viewer/reader. A book is in a similar manner a network of text-nodes (pages, or rather text chunks/paragraphs) that are explicitly linked to a multidirectional path controlled by the reader. Admittedly, much of current video games research perspectives are influenced by hypertext theory. Practically all current video games research concerning the narrative dimension is fundamentally structuralist in its approach: narrativists, ludologists and hypertext theorists all assume that video games can be analysed and understood as structures. Aarseth’s approach is on occasions extremely structuralist in its attempts to discern the fundamental mechanisms of ergodic texts and video games. Furthermore, two of the core variables of Aarseth’s typology of textual communication, Access and Linking are clearly hypertext-based notions. Aarseth invests considerable effort in criticising but also in positioning his theory in relation to hypertext perspectives, and is in many regards a theoretical development away from a field heavily dominated by hypertext theory, and into the nascent field of video games studies. Currently, there are few video games theories solely devoted to hypertext perspectives as exclusive theoretical framework for analysis.

As with many other initial “textual” (text-based) analysis of the electronic textuality, they struggled with the rapid transition of the medium into animated graphics, video and images. However, “textual” approaches did not die cease to exist – quite the contrary, many gained strength as the revised re-applications of their theories on new graphics-based video games purportedly proved the viability of their perspectives – it is all part of the same “interactive text medium” according to some theorists. This is most definitely the case with Aarseth’s theories, which, as demonstrated in previous chapters, have with some modifications remained valid in the new age of computer graphics. Quite obviously this is also the state of narratological, and hypertext for that matter, approaches to video games. The arrival of graphics and its explosion of possibilities, have required a rethinking of the notion of “text”. Insisting on treating games as “texts”, the codex-based “text” has been exchanged for a more abstract form of “computer text” that is being read by the gamer/reader on different levels (Kücklich 2002).
FILM/VIDEO GAME THEORY

The advent of video graphics radically changed the object of study. It also ushered in new theorists coming from different and new directions, primarily from film theorists who could not resist the obvious temptation of seeing similarities between the moving images of video games and those of the cinema screen.

Film theorists in video games studies brought an impressive theoretical advantage: they have spent years developing a terminology and analysis of the remarkably dynamic, fluid and multi-faceted nature of the moving images/film medium. A medium that combines numerous different art forms into a highly multi-layered and complex unity – yet extremely accessible, requiring a less formal type of literacy compared to other forms of (narrative) expression. A (codex) text can communicate aspects and characteristics that a film sequence cannot and vice versa. However, the film sequence will be understood by a broader spectrum of people since reading a text requires a more complex, contextual and formal set of knowledge such as alphabet, words, grammar, cultural references, etc.

Film also demands cultural and contextual understanding of (primarily) dynamic visual meaning. Its analysis requires an incorporation of narrative dimensions, formal aesthetics, acting, music, socio-cultural contexts and meanings, directing among many other issues. Film analysis has produced a significantly larger body of works and perspectives, than video game studies. One of the more prominent video game researchers articulating a film studies approach on video games is film theorist Tanya Krzywinska, who together with Geoff King motivates the applicability of film theory to video games as follows:

Our argument is that perspectives from film studies offer a valuable set of tools with which to approach games, especially in getting to grips with close formal analysis of the onscreen game world, an aspect of game study that traditionally been subject to neglect. Approaches
from film studies can be used to highlight some points of similarity between films and games, but they can also serve as a useful way of drawing attention to a number of major differences.

(King & Krzywinska 2006, p. 112–113)

The strength of film studies is its formal analysis and similarity to the on-screen game world, and that it also sheds light on aspects which have been ignored by previous research. The foundation for their claims is Bolter and Grusin’s (1999) concept of remediation, which states that not all media forms exist in isolation but contain and encapsulate within their form and logic other forms of media. Bolter and Grusin draw on the renowned media theory thinker McLuhan and the visual culture theorist Mitchell to launch the notion of remediation:

[...] Marshall McLuhan remarked that “the ‘content’ of any medium is always another medium. The content of writing is speech, just as the written word is the content of print, and print is the content of the telegraph” (23–24). As his problematic examples suggest, McLuhan was not thinking of simple repurposing, but perhaps of a more complex kind of borrowing in which one medium is itself incorporated or represented in another medium. Dutch painters incorporated maps, globes, inscriptions, letters, and mirrors in their works. In fact, all of our examples of hypermediacy are characterized by this kind of borrowing, as is also ancient and modern ekphrasis, the literary description of works of visual art, which W. J. T. Mitchell […] defines as “the verbal representation of visual representation” (151–152). Again, we call the representation of one medium in another remediation, and we will argue that remediation is a defining characteristic of the new digital media. What might seem at first to be an esoteric practice is so widespread that we can identify a spectrum of different ways in which digital media remediate their predecessors, a spectrum depending on the degree of perceived competition or rivalry between the new media and the old.

Remediation is a process through which one media form represents another in its presentation. It might seem infrequent, but according to the authors it is a widespread phenomenon which they spent the book proving providing examples from among many Renaissance paintings, graphical user interfaces, photographs, wooden Italian baroque cabinets, virtual reality, newspapers, TV shows, web sites and video games. The concept is a form of “intertextuality of the new media forms”. It is based on three concepts: remediation (central concept), complemented by immediacy and hypermediacy.

Immediacy, or transparent immediacy, is the desired attempt by media to appear invisible to the viewer/reader. For instance, a Renaissance painting, with its geometrical perspectives, almost wants to be a window into the
depicted world of the painting. Cinema, virtual reality or a simple photograph all want us to focus on the immediacy instead of the form of the medium. A semiotical way of expressing the effect of the immediacy is the attempt to collapse the link between signifier and signified.

Hypermediacy, on the other hand, is almost the opposite of immediacy. It attempts to remind the viewer/reader of the existence of the medium and its effects. Typical examples of hypermediacy consist of the “‘windowed style’ of the World Wide Web pages, the desktop interface, multimedia programs, and video games” (Bolter & Grusin 1999, p. 31). In these applications different types of media forms are dynamically combined to produce a fusion which makes the reader fully aware of the presence of the medium. For instance, a contemporary newspaper web site is obviously inspired by broadsheet newspaper design and layout, and it also adds elements of videos, animated graphics (sometimes with three-dimensional objects), sounds and other types of media (podcasts, rss-feeds etc). This resulting multimedia fusion presents the viewer with an awareness of the different media forms and what each of these forms can provide. Hypermediacy communicates a combined channel that cannot be transmitted by the individual components themselves.

Immediacy, hypermediacy and remediation (as the most dominant) form, according to the authors, the three traits of the genealogy of new media. The relationship between the three traits and its effect on new media development is elaborated as:

It is possible to claim that a new medium makes a good thing even better, but this seldom seems to suit the rhetoric of remediation and is certainly not the case for digital media. Each new medium is justified because it fills a lack or repairs a fault in its predecessor, because it fulfills the unkept promise of an older medium. (Typically, of course, users did not realize that the older medium had failed in its promise until the new one appeared.) The supposed virtue of virtual reality, of videoconferencing and interactive television, and of the World Wide Web is that each of these technologies repairs the inadequacy of the medium or media that it now supersedes. In each case that inadequacy is represented as a lack of immediacy, and this seems to be generally true in the history of remediation. Photography was supposedly more immediate than painting, film than photography, television than film, and now virtual reality fulfills the promise of immediacy and supposedly ends the progression. The rhetoric of remediation favors immediacy and transparency, even though as the medium matures it offers new opportunities for hypermediacy.

(Bolter & Grusin 1999, p. 60)

King and Krzywinska argue that video games studies might benefit from the application of theories of an older medium. It is not merely a ques-
tion of visual similarities, but also a question of remediating the film medium within the video game medium. Consequently, King & Krzywinska present a brief overview of the video game relevant perspectives of the film studies field. Three broad modes of film analysis are presented: formal analysis, social-cultural-political analysis and industrial-institutional analysis. The authors prefer formal analysis since it is the most specifically associated with film studies as a distinct discipline.

Social-cultural-political analysis is concerned with issues of cultural contexts and their effect on film. This intertextual web of meanings and references situated in a context of cultural dynamics is a theoretical gate through which researchers from sociology, anthropology, ethnography, cultural studies and other disciplines of humanities enter the field of film as well as video games studies. In recent years, the rapid expansion and success of MMOGs (Massive Multiplayer Online Games) have resulted in an impressive influx of researchers studying this phenomenon. The emergence of “virtual worlds” with millions of inhabitants puppeteered by players from numerous countries across the globe, create a virtual melting pot of cultures, confrontations and exchanges giving rise to an endless amount of interactions and dynamics begging for theorising by scholars who have been studying similar phenomena in the “real world” for decades. Issues such communities (Hand & Moore 2006; Rheingold 1993), identity (Filiciak 2003; Turkle 1997), gender (Bryce, Rutter, & Sullivan 2006; Cassell & Jenkins 1998), intersection with cultural studies (Crawford & Rutter 2006) are some of the more popular themes in this vast area of research.

The extensively published research field concerning video games and violence, with its highly infected, politicised and agenda-driven polemics (Anderson & Dill 2000; Bryce & Rutter 2006; Griffiths 1997; Grossman 1995; Irwin & Gross 1995; Kirsh 1998) can also be considered to be one of the more prominent components of social-cultural-political analysis (at least from a mainstream media coverage point of view). It studies the impact of video games on the social aspects of gamers. Predominantly it concerns under-aged gamers and children, who are, according to some researchers, considered to be vulnerable to (violent) media messages. Much of this work stems from (psychology) research relating to violence and media consumption, a filed previously predominantly concerned with cinema and TV.

The third and final mode of film analysis consists of industrial-institutional analysis. It is part of the cultural industries field, presented previously. One of the major topics in this field is the combination of business objectives, such as budget and marketing restraints, with the artistic objectives of the filmmakers. This perspective also describes the production and marketing logic of the film industry. Creative products, such as films
and video games, do not exist in some idealised world of meritocracy and unlimited possibilities, but rather in an environment with excessive supplies of professionals with creative ideas and limited production resources giving rise to dysfunctional markets with various filtering mechanisms. This perspective also takes into account the intricacies of current media industry environments such as language barriers, oligopolistic media conglomerates, cultural imperialism, path-dependent production logic, limitations and/or disruptive potential of technology, to mention just a few. The object of this study, which (partially) attempts to investigate the effects of the video game industry on the medium itself, and vice versa, is very much in line with the industrial–institutional analysis perspective.

King and Krzywinska focus on the formal analysis since it is the “most specifically associated with film studies as a distinct discipline”. Obviously the most film-like dimension of contemporary video games, the cut-scene or FMV sequence, is chosen as a departure point, but also point of contention, for the analysis:

> The fact that cut-scenes are the most film-like aspects of games, and that they intrude on active gameplay, has been taken by some to imply that film-related perspectives can be of relevance only to what is sometimes considered to be marginal aspects of games. We argue against this position, offering a number of tools of analysis developed in film studies that can be applied to many other aspects of games and to a comparative analysis of points of similarity and difference between the two media forms.

(King & Krzywinska 2006, p. 115)

Departing from the cut-scene, King and Krzywinska present six analytical perspectives imported from the field of film studies. These perspectives are point-of-view, mise-en-scène, iconography, genre, sound and finally narrative.

Formal analysis is best suited for games with two- or three-dimensional space. The way space is created on the film screen through framing of images, mise-en-scène, shifts in time/space, and the use of sound effects/music, is similar to the way video games generate space. Point-of-view is a concept applied in different (graphic) arts to represent on a flat surface a three-dimensional space the way it is perceived by the human eye. Within literature studies it is related to the narrator, and what type of relation is provided to the narratee. In film studies it defines the main character’s perspective: through the “eyes” of the character i.e. first-person perspective, or from a seemingly objective external “over the shoulder” perspective i.e. third-person perspective. This terminology is present in the video games medium, and such a dominant characteristic that many genres are defined by it, e.g. the First Person Shooter genre (shooting objects from a first-
person visual perspective). As a more “naturalistic” perspective it purportedly increases identification and as shown by the following quote where the perspective is linked, possibly in an excessively simplistic fashion, with violence among children:

In many violent video games, however, one is required to take the point of view of one particular character. This is most noticeable in “first-person shooter” games, in which the players “see” what their character would see as if they were inside the video game. Thus, the player is forced to identify with a violent character. In fact, in many games, players have a choice of characters to play and can upload photographs of their faces onto their character. This identification with the aggressive character is likely to increase the likelihood of imitating the aggressive acts.

(Douglas & Anderson 2003)

Nonetheless, the perspective inevitably influences the gamer-character relationship. Many games offer combinations of these two dominant perspectives, e.g. the Ratchet & Clank series of video games offers a third-person perspective, but also the possibility to switch to first-person perspective (for precision action, such as sniper shooting). GTA3 allows switching between 9 different perspectives, which vary depending on game environment (“in-car”, or “out-of-car”). Interestingly, in this three-dimensional video game one “in-car” driving-mode is a top-down perspective (“helicopter view”) transforming the video game into a new two-dimensional street racing game, to associate with the previous titles in the Grand Theft Auto-series played from an identical top-down two-dimensional perspective. This illustrates how different visual perspectives can be used for several purposes such as gameplay functions, continuity (with previous video games), and generating new aesthetic dimensions.

Other concepts from formal film analysis are also useful for analysing video games. Mise-en-scène is a concept applied to everything that appears on the film screen – actors, costumes, objects, sets, props and others, often referring to the “visual voice” or “language” of the film. Studying the mise-en-scène of GTA3 (again) there are several insights that can be gained from an analysis of the on-screen objects (Dymek 2004b; Dymek & Lennerfor 2005). The game world is a stereotypical North American city called Liberty City with two districts Portland (poor and rough neighbourhood: industrial warehouses, Red Light District, dangerous harbour area, gang members, homeless people, prostitutes) and Staunton Island (typical American downtown area: skyscrapers, shopping malls, sport stadium, and university campus). The selection and design of objects as part
of the mise-en-scène create different emotional milieus and settings. By analysing these objects many of GTA3’s communication mechanisms can be explored and defined.

**Iconography** in art history refers to the set of symbols and icons associated with a certain theme within art, such as rainy weather with sad feelings, or revolvers, desert cactuses, and cowboy hats associated with Wild West themes. Iconographies have been established and developed through thousands of years of visual arts. The video game medium, however, often draws on iconographies from the world of cinema. Many film genre iconographies such as science fiction, fantasy, certain historical periods (e.g., Second World War or medieval times), sport and military environments are frequently applied. Much of the success of the GTA-series is attributed to its acclaimed transfer of exaggerated cinema-based iconography of organized crime environments into the world of video games. These iconographies generate a cultural context and immersive depth for the gameplay elements.

Highly institutionalised iconographies form together with particular conventions, compositions and (in many traditional media forms) also narrative components, constitute a genre. Iconographies identify structures of icons and symbols in visual media, while genre studies identify all types of common dimensions and structures. The genre of “love story” transgresses the boundaries of most media forms: oral storytelling, novels, theatre, film, musicals and even video games.

Video game sound is also explored. King and Krzywinska provide two categories, based on the film studies notion of diegetic. In the context of sound, it indicates whether a sound has been created by “on-screen” or “off-screen” activities such as the music score or similar. This type of formal distinction provides fundamental analytical tools for video game sounds, and development towards theories concerning sound and music influence on the video game experience.

Finally, King and Krzywinska arrive at the film studies notion of narrative. They acknowledge that the classical narrative model of “linear narrative structure” is not entirely applicable on the case of video games. Referring to Jesper Juul’s (2005) notion of “games of progression” (as opposed to “games of emergence”), they elaborate how progressive games place narrative elements in a setting of gameplay components. GTA3 is a typical case of this type. RMVS provide an overarching narrative setting and a sense of progression while elements of gameplay (the missions) generate the “narrative movement” between these points. The overarching narrative form a “narrative background” whose details are fitted in by local events. These two planes might seem separate: narrative and individual gameplay actions. King and Krzywinska claim that they are often integrated, but
change from one video game to another. In some video games the over-arching narrative at certain points affects the local gameplay actions (Maria's escape in GTA3), while in other types, typically MMOGs and MMORPGs, the individual gameplay can play endlessly without in anyway affecting the “narrative background”. On the other hand, when the “narrative background” changes this radically affects the gameplay. So-called “expansion packs” can add new features and background story to the MMOG, e.g. when World of Warcraft: The Burning Crusade (Blizzard Entertainment 2007a) was released (incidentally one of the most successful day-one sales of any video game in history) it radically changed the gameplay for the 2.4+ million players who bought it within 24 hours of its (almost) global release (Blizzard Entertainment 2007b).

King and Krzywinska conclude that narrative progression is shifted to the outlines; it becomes a secondary context to the actual gameplay. Many video games, “movie games”, consequently refer to established narrative contexts from cinema. This practice also relieves the video game from producing narrative context (FMVs, introductory texts etc.) – the narrative background is a priori established and implicit. A Spiderman game does not need to explain the narrative world of the superhero – it is safely imported from comics series, TV series and films containing Spiderman and his narrative. Shifting the narrative to the outlines is also at work in film, according to some film studies researchers. One can strongly argue that in many contemporary Hollywood-blockbuster films the narrative progression is pushed aside for special effects, bombastic action sequences or musical numbers. King and Krzywinska provide the example Jurassic Park (Spielberg 1993) whose major attraction is its impressive (at the time) visuals with digital depictions of prehistoric dinosaurs. Most viewers of Jurassic Park know unquestionably that the dinosaurs will appear, they will also predict that the dinosaurs will escape, the main characters will face danger and obstacles and at the end find a fortunate escape – the only question that remains is how. When finally (and unsurprisingly) the dinosaurs do escape from their seemingly fail-proof imprisonments, the narrative progression is almost shoved aside and an impressive spectacle of action sequences and digital special effects take centre stage. This phenomenon is not by any means anything new – musicals and soap operas place the narrative progression in the background and prioritise other aspects such as music numbers with dancing, or in case of soap operas an exaggerated (oral) elaboration of emotional experiences. Consequently, King and Krzywinska claim that the narrative communication process of video games is not unsuitable for film studies analysis since certain cinema genres are also transforming the narrative communication process. Furthermore, the spectacle and sensation provided by “narratively non-progressive” dimen-
sions in video games could be studied with a film studies perspective. King and Krzywinska distinguish between contemplative films, which focus on astonishment of scale, detail and fascination of image; while the second variety of films consist of more aggressive “in your face” type of sensation and spectacle. In video games, for instance, contemplative games such as Ico (Team ICO 2001) offer stunningly beautiful vistas of the interiors of a mystical castle, while more aggressive “in your face” games are exemplified by basically all fast-paced FPS video games.

Interactivity is found to be the biggest point of departure between film and video games, according to King and Krzywinska. Much of film studies has been developed with a spectator in mind, a viewer that more or less passively receives the contents of the film – in many regards a continuation of Shannon and Weaver’s (1969) traditional communication model. Unquestionably substantial work has deconstructed and opposed the notion of the passive viewer focusing on issues of reinterpretations/renegotiations of structures, semiotics, psychoanalysis and others. However, these theories rarely involve the viewer/reader/spectator in the direct and material manner required by video games. It is one thing to, say, explore the film as an “universe of signs” organized by numerous “interrelated semiotic systems”, but it is something else completely to press the button of a game controller igniting the motorboat engine in GTA3 and escaping together with Maria from Portland. The video game medium is an extranoematic medium requiring the active participation of viewers in manner which is not possible in film, and consequently not taken into account by film theories.

CINEMATIC JEALOUSY

An obvious limitation of the film analysis paradigm is its ability to only analyse those aspects that resemble the film medium, i.e. that explore two- and/or three-dimensional depictions of (human) spaces. This excludes many video games with abstract graphics and representations such as puzzle games, music/party games, pinball, and some simulation games to mention a few. Obviously, the oft-mentioned example of Tetris would be excluded from the formal film analysis category.

Furthermore, film studies approaches to video games analysis focus on games with human(like) environments and subjects, first and third person point of view, mise-en-scène and practically all examples point towards a selection of “cinematic games”. A type of video game that wants to be “interactive cinema” – a new type of film, a fundamental revolution of visual media, where the players can control the main character in a cinematic world. These types of video game are salient among the upper echelons
of the video game industry – the so-called AAA video game productions. “AAA video game” is one of the most recondite concepts of the video game industry. Lacking a formal definition it refers to video games with the highest prestige in terms of technological sophistication, development budget and marketing campaigns. Prominent game designer and game theorist Raph Koster offers this definition:

The common definition of a AAA title seems to revolve around marketing and around scope. You don’t hear of a AAA puzzle game, even though Bejeweled had great production values, addicting gameplay, and massive commercial success. Instead, AAA seems only to be applied to games with a certain scope, a certain level of graphical polish, and a certain marketing budget and hype factor. Would Lemmings be considered a AAA title if it were created today? I suspect the answer is no. Would Tetris? Definitely not. […] My personal definition of a AAA title is driven by these factors even if I don’t want it to be. It’s the equivalent of a Hollywood blockbuster, basically--and much as we would like to think that it means a great game, it doesn’t necessarily mean that.

(Koster 2005)

Bejeweled (PopCap Games 2001) and Lemmings (DMA Design 1991) are highly successful puzzle games, but can hardly be considered AAA productions. The concept revolves mainly around issues of marketing and the size of the production apparatus. Koster draws parallels between Hollywood blockbusters and AAA titles, which he implies are both concepts devoid of any correlations to quality and craftsmanship. This study will at a later stage actually claim that much of the video game industry is driven and aligned by the elusive struggle for an unknown, but “cinematically jealous”, vision of the video game medium – a Holy Grail of the video game industry driven by an infatuation of all things Hollywood: its aesthetics, visuals, themes, star status, business models (to some extent) and position in society.

King and Krzywinska claim that the narrative perspective is one of the major intersections between film analysis and video games. Films are unequivocally considered to be narratives in most film theories. Narratives literally drive films forward through space and time and are by many considered to be almost the fabric of the cinema medium. The French “demigod” philosopher Gilles Deleuze’s notorious theories of film highlight (among many things) fundamental dimensions that attenuate the seemingly unquestionable link between narratives and films. Or as Deleuze theorist Claire Colebrook puts it:

Deleuze traces the power of cinema in the transition form the movement-image to the time-image. The movement-image is the first
shock of cinema, where the play of camera angles moving across a
visual field gives us the direct expression of movement, and thereby
opens thought up to the very mobility of life. In the time-image we
are no longer presented with time indirectly – where time is what
connects one movement to another – for in the time-image we are
presented with time itself.

(Colebrook 2002, p. 30)

The Deleuzian film-related concepts of movement-image and time-image
will not be elaborated here, as they are outside the scope of this text. They
are both separate theoretical frameworks in their own right, as Deleuze
has dedicated one book for each concept Cinema 1: The Movement-image
(Deleuze 1986) and Cinema 2: The Time-image (Deleuze 1989). Neverthe-
less, these concepts illustrate that Deleuze’s theories revolve around com-
pletely different concepts than narrative, and that they actually question
some of the foundation of that theory.

The ubiquity of narrative theory in all media forms is astounding. Nar-
rative theory has equated itself with “storytelling” and other mainstream
notions of narratives, and is a de facto preferred way of framing most media
forms, and beyond. Narrative is the ascendant notion in most media analy-
thesis, either explicitly or implicitly through associated and synonymous con-
cepts. Despite this “hegemony of the narrative”, theories such as Deleuze’s
can act as reminders that film can be seen as something completely differ-
ent, with an alternative theoretical perspective. Colebrook, citing Deleuze,
insists that cinema retains its own theoretical existence:

To deal with the specificity of cinema, he [Deleuze] argued, we might
also have to re-think philosophy: ‘Cinema itself is a new practice of
images and signs, whose theory philosophy must produce as concep-
tual practice’ […] cinema demands a whole new style of thinking, such
that its ramifications can be gauged well beyond cinema.

(Ibid.)

Cinema must according to Deleuze be theoretically treated separately as
it is a completely new “practice of image and sign” and its analysis requires
a re-thinking of philosophy and film theories. This strongly opposes the
transmedial nature of the narrative theory and the constant application of
its theory to new media forms, and in many cases beyond the strict con-
fines of “media”. Simply put, Deleuze promotes the study of the differences
and uniqueness of (film) media, while narrative theory attempts to identify
similarities and common dimensions between various media forms.

The previously discussed theory of remediation by Bolter and Grusin
would probably side with the narrativist perspective on media differences/
similarities:
Our second observation concerns our culture’s insistence on the newness of new media. It is not surprising that enthusiasts should continue to make the claim for novelty, for they have inherited from modernism the assumption that a medium must be new in order to be significant. As Cavell [...] has remarked, the task of the modern artist was always “one of creating not a new instance of his art, but a new medium in it”. In digital media today, as in modern art in the first half of the century, the medium must pretend to be utterly new in order to promote its claim of immediacy. It must constitute itself as a medium that (finally provides the unmediated experience that all previous media sought but failed to achieve.

(Bolter & Grusin 1999, p. 270)

Whether Deleuze can be labelled as “modernist” is definitely outside the scope of this study (probably not would be a qualified guess), but nonetheless Bolter and Grusin claim that novelty and significance are not mutually exclusive. These are matters quite outside the aim of this study, but they do illustrate the complexity of analysing the film medium, and also the ramifications of transferring one theory from one media form to another. Consequently, film is not narrative per se, but the theoretical tradition of its analysis puts it in the close vicinity of the narrative theory, and vice versa. Since video games do provide some experiences that resemble the storytelling process in various degrees, this will be reason enough to study this aspect. The purpose is twofold: to incorporate another fundamental perspective on video games; and to provide further impetus to explore narrative theory and its particular adaptation on video games.
NARRATOLOGY

Surprisingly many introductions by theoretical schools claim that they are a disparate, decentralised and incohesive perspective with distinctive theorists whose body of work covers a sprawling spectrum of subjects and sometimes even contradicts itself by containing internal polemics. Every researcher is after all a unique and unclassifiable thinker (even if this, in many instances, is not actually the case). The following quote by Christopher Butler, which introduces post-modernist thought, is a good example:

I will be writing about postmodernist artists, intellectual gurus, academic critics, philosophers, and social scientists in what follows, as if they were all members of a loosely constituted and quarrelsome political party. [...] It is not particularly unified in doctrine, and even those who have most significantly contributed ideas to its manifestos sometimes indignantly deny membership – and yet the postmodernist party tends to believe that its time has come.

(Butler 2002, p. 2)

The post-modernist movement is thus considered barely a movement, but a “quarrelsome political party” and its most prominent contributors “deny membership”. Exceptions exist: those with a “school building” – a single university department from which the movement originates. Theoretical perspectives such as the Frankfurt school of critical theory, the Chicago school of economics or the Birmingham school of cultural studies, to mention a few, follow this principle. The video game narratologists cannot be considered adherents of the “school” principle – they stem from various backgrounds, universities and even countries. Few of its contributors label themselves as part of a video game narratological movement. Despite being a comparatively young medium, and video games studies being an even younger academic field, it has all the trademarks of more established fields: decisive issues, polemics, dedicated journals and conferences.

Having cleared these initial issues, it could be said that the most prominent proponents of the video game narratology perspective are Janet Murray, Brenda Laurel and Marie-Laure Ryan. All of the previous
disclaimers concerning non-membership, internal contradictions, lack of common agenda and distinctive works, apply to this “movement”. Most vocal of these theorists is Janet Murray, whose work will be analysed most extensively in this segment. She rarely positions herself as a “video game narrativist” (or similar), which has been noticed by video game theorist and outspoken “ludologist” Gonzalo Frasca:

Another example of the non-existence of this ludological/narratological debate is the difficulty to find the identity of the narrativists. Mateas clearly identifies the ludologists but fails to name the narrativists. Henry Jenkins claims that Janet Murray is usually referred to as a narrativist. However, I am not aware of any article by Janet Murray where she takes a position in this so-called debate. It is true that Murray's approach to games is in the context of storytelling (and drama) but it would be inaccurate to situate her on the opposite of "studying game play from the point of view of their mechanics".

(Frasca 2003a, p. 3)

As will be shown later, the backbone of Murray's line of argumentation is based on the narratology and in particular certain theories of the Russian Formalist school.

Brenda Laurel's pioneering work Computer as Theatre (1993) focuses, as the title implies, on analysing the “computer medium” as a theatre stage, and is an oft-cited work within video games studies even if it does not address video games directly. Laurel's analysis of the computer medium is predominantly founded on dramaturgy and in particular Aristotle. Laurel's body of work also includes topics such as gender, design research (Laurel 2003), human-computer interaction, virtual reality, political and artistic issues in interactive media. She has also worked in the video game industry and as an entrepreneur dedicated to creating video games for pre-teen girls – an experience which she described in Utopian Entrepreneur (Laurel 2001).

The third video game narrativist Marie-Laure Ryan is from Switzerland, educated in Germany, and holds an M.A. in German and Linguistics and a Ph.D. in French, and currently labels herself an “independent scholar”. Her research focuses on narrative theory, genre theory, linguistic approaches to literature, and digital culture. Her most prominent and cited work is Narrative as Virtual Reality: Immersion and Interactivity in Literature and Electronic Media (2001) where she delves into the subject of narratives in digital environments such as virtual reality. Her analysis of “interactive narratives” places her somewhere in-between the ludological and the purely narrativist position according to her own opinion (Ryan
2002), thus making her a somewhat contradictory member of the video game narrativist movement.

This is indeed a disparate agglomeration of researchers but they are united by one criterion: their theoretical perspectives are founded on the use of “narrative” as an analytical perspective on video games. This chapter will be dedicated to explaining the major traits of these video game theorists. Hopefully this will lead to an increased understanding of video games, and in particular the storytelling dimensions of this new medium.

MURRAY’S HOLODECK HAMLET

Murray’s perspectives on video games belong without doubt to the most well-known in the field, and also outside it. She is very outspoken, and her perspectives have achieved noticeable attention outside the field of video games. *Hamlet on the Holodeck – The Future of Narrative in Cyberspace* (1997) is her seminal work, first published the same year as Aarseth’s work *Cybertext – Perspectives on Ergodic Literature*. In it she summarises concisely the narrativist perspective on video games:

> A game is a kind of abstract storytelling that resembles the world of common experience but compresses it in order to heighten interest.
> Every game, electronic or otherwise, can be experienced as a symbolic drama.

(Murray 1997, p. 143)

From the perspective of this study and its investigation of video game theories, this statement outlines the major dividing line between narrativists and ludologists. All types of games (“electronic or otherwise”) are intrinsically defined as narrative – a definition which many video game researchers, and ludologists in particular, cannot subscribe to. The quote stringently encapsulates the essence of the debate: few doubt the existence of “symbolic drama”, but does this constitute the essence of this medium? A session of Tetris has a beginning, middle and an end. It contains various difficulties that are overcome. Tension is created, interpretational challenges are generated. Joy, fear, pride, failure – a wide spectrum of feelings accompany the experience, even in the case of the abstract Tetris. The pivotal question consequently becomes: is this similarity (to narrative media) enough indication to define video games as narratives? Is every game necessarily “a kind of abstract storytelling”?

There is more to Murray’s views than merely video games. The preferred term for framing the medium is *digital environments* or *cyberspace*. In much the same way as Aarseth investigates the much broader range of ergodic
texts (electronic or non-electronic), Murray’s analysis focuses on issues of narratives in all sorts of digital environments, which she considers the next frontier of the thousand years old tradition of storytelling and narratives. She describes the enormous potential of “cyberspace” as a new medium for storytelling. “Digital environments” are intrinsic storytelling mediums.

THE HOLODECK

Murray’s guiding star concept is the “Holodeck” from the science-fiction Star Trek television series. Using a range of non-existent fantasy-like technologies such as matter replicators, tractor beams, shaped force fields and holographic projectors, a simulated reality facility is created. It is shaped like a room into which the player enters, interacts without any aids, and experiences no difference to “real life” – everything feels, sounds, looks and even smells like the “real” thing. This environment is enacted with a so-called “Holonovel”, which are narratives for the Holodeck medium.

Murray is particularly interested in a specific episode from the numerous Star Trek series and film incarnations, in which a certain spaceship captain, Kathryn Janeway, enters a Holonovel set in a historical Victorian context and falls in love with a Holodeck character. Besides providing a slightly cumbersome rendition of historical Victorian environments inside a fictional simulation machine onboard a spaceship set in a distant 24th century future, the Holonovel episode illustrates, according to Murray, another vital aspect of simulation technologies: the risks. When she kisses the Holodeck character Captain Janeway falls into a catatonic trance, effectively symbolising the anxieties about new technologies of simulation.

More examples of simulation technologies in literature and film are provided. Considering the topic – simulation technologies – all of the examples are taken from the genre of science-fiction. Aldous Huxley’s description of “the feelies” in Brave New World, Ray Bradbury’s “televisors” in Fahrenheit 451, William Gibson’s “simstim” medium in Neuromancer, the Tek-technology in the American television series Tek War, and virtual reality technology in the film Lawnmower Man, are all provided as examples of different anxieties associated with simulation technologies.

The examples of science-fiction literature and television series might contextualise the subject in a popular culture frame of reference, but also illustrate another issue: the curious affinity between video games culture and science-fiction genres. Murray’s pop cultural framing of her research is not coincidental – video games culture, and its researchers, have an inclination towards science-fiction. Numerous video games genres and titles contain a science-fiction setting, from one of the first video games ever Spacewar!
to current global megahits *Halo 3* (Bungie Studios 2007). Without getting into normative statements concerning the aesthetics of science-fiction, it could be easily claimed that the science-fiction genre is over-represented in the video game medium, which inevitably affects the (aesthetical) development and the mainstream recognition by society. The science-fiction genre is often disdained by literary critics, despite breakthroughs such as the award of the 2007 Nobel Prize in Literature to Doris Lessing, who has written (among many other genres) several science-fiction books (Brandel 2007).

Murray positions the “cyberspace” medium in relation to other media forms, by describing tradition of narrative storytelling spanning from 5,000 years old cave paintings in Lascaux, through Shakespeare, Gutenberg and Don Quixote to today’s nascent digital world, where narratives are pushing against the boundaries of today’s limited technologies, just waiting to realise its full potential and explode into the digital universe of interactive narratives:

Now, in the incunabular days of the narrative computer, we can see how twentieth-century novels, films, and plays have been steadily pushing against the boundaries of linear storytelling.

*(Murray 1997, p. 29)*

Murray’s presentation of the evolution of narratives gives the impression of almost being driven by a deterministic force. She analyses how certain 19th century authors used innovative narrative devices, such as flashback and crosscuts, which later blossomed in the world of cinema. We are also currently approaching the limits of the cinematic age – several examples of films are conceptualising the possibilities of going beyond the constraints of traditional linear narrative cinema by exploring multiform stories alluding to prospects of interactive narratives. Murray proposes a linearity of narrative evolution, in order to prove the non-linearity of future narrative forms.

There are two ways to interpret these claims. One (less constructive) way is to totally repudiate the claim as being without foundation. Her examples, however, indicate a fairly credible notion – certain narrative devices are usually anticipated before they can be fully accomplished in a different medium – but is this necessarily proof of the progressive deterministic nature of narrative evolution? Murray’s argumentation implies that narrative techniques essentially “grow tired” and move on to a new medium where they can spread their wings and develop their full potential. Narrative forms in cinema are becoming constrained by the old dusty linear narrative – cyberspace is the medium where narratives can finally break
free from the shackles of linearity and do whatever they want. Cyberspace, it seems, is the new and free world for oppressed narrative form. On the other hand, this could be a case of Bolter and Grusin’s notion of remediation (Bolter & Grusin 1999). Instead of seeing cyberspace as the next frontier for multiform stories, cyberspace could be perceived as a remediation of (narrative) techniques from previous media forms (i.e. cinema).

When finally the narrative computer has pushed beyond the boundaries of linear storytelling awaits the multiform story. Murray supplies early examples of multiform stories in literature, e.g. Jorge Luis Borges’s *The Garden of Forking Paths*, which is about a World War I spy who is preparing to murder a victim. During this quest the spy becomes aware of the multiple alternative and various futures his decision cause from a multiform story point of view. Another historical example is *In Dreams Begin Responsibilities* by Delmore Schwartz, where in the dream of a young man he is watching a silent movie of his father proposing to his mother. Miserably he wishes that he could change the course of his family’s history and shouts in despair at the cinema screen. Murray considers this an evident example of a narrator attempting to turn a linear, passive medium into an interactive one. Examples of successful transformation are achieved in Robert Zemeckis’ science-fiction film *Back to the Future* (Zemeckis 1985) where the protagonist is actually doing the opposite of Schwartz’s character by trying to save his family’s life by going back in time using a time machine and eliminating the different adventurous obstacles to his parents’ love and consequent marriage. The science-fiction examples continue with Alan Lightman’s *Einstein’s Dreams* where the author investigates parallel systems of time. Similarly to the film comedy *Groundhog Day* (Ramis 1993) where a man is forced to relive the exact same day repeatedly in a “time loop” until the friend character of Rita falls in love with him. Murray concludes that these examples constitute the burgeoning narrative revolution, but also a sign of our times:

As this wide variety of multiform stories makes clear, print and motion picture stories are pushing past linear formats not out of mere playfulness but in an effort to give expression the characteristically twentieth-century perception of life as composed of parallel possibilities. Multiform narrative attempts to give a simultaneous form to these possibilities, to allow us to hold in our minds at the same time multiple contradictory alternatives. Whether multiform narrative is a reflection of post-Einsteinian physics or of a secular society haunted by the chanciness of life or of a new sophistication in narrative thinking, its alternative versions of reality are now part of the way we think, part of the way we experience the world.

(Murray 1997, p. 37–38)
Murray attempts to link the multiform story form (in linear media form) to the current state of western society – a world of “secular society” and “post-Einsteinian physics”, but without mentioning post-modernism as a possible explanation for the fragmented and deconstructed nature of many contemporary western societies. Associations between post-modernism and electronic textuality have also been popular, in particular among certain hypertext theorists, which has been elucidated previously in this study. Murray avoids postmodernism even though she implies similar conclusions: in a society of secularisation, fragmentation and relativity, multiform stories are more suited to depict contemporary issues compared to traditional linear media.

The multiform story requires a new type of reader – the active audience is her preferred term, where the reader assumes, not surprisingly, a more active, but also more risky, role. By giving the active audience access to the alternatives, choices and narrative forking paths of cyberspace, they run the risk of feeling the disillusioning presence of a storyteller (or a narrator) – there is something outside the story – making its presence felt (which has been discussed where hypertext fiction disrupts the narrative communication process due to the interruptions caused by the aporetic text structure). This distancing effect is according to Murray a two-edged sword: disillusioning effect, but also an invitation to join the creative process. Murray points to several examples of comics, novels and genres that induce creativity from the audience by asking the question of “what if...?” – by questioning major events in well-known narratives. The “what if” question is indeed at the core of many of Murray’s previous multiform examples (“what if someone could go back in time and interfere with ancestors?”). Murray sees this “what if”-induced creativity in various expressions of fan culture, which has gained prominence with the rising popularity of the Internet, where users take matters into their own hands and create their own “what if”-scenarios (predominantly television series, but also films and fiction), sometimes by writing alternative episode manuscripts or even going as far as re-editing entire films according to their own liking. This was pioneered by the infamous The Phantom Edit which was a re-edited version of Star Wars Episode I – The Phantom Menace where an anonymous editor by the name of Phantom Editor (later revealed to be professional film editor Mike J. Nichols) chose to remove elements from the original film which he deemed unsuccessful according to critics and Star Wars fans (BBC News 2001). The most dedicated fans take it even one step further by enacting their favourite narratives in live-action-role-playing, a form of live theatre set in environments and with characters from the admired narrative – a tradition which has greatly influenced the video game culture, as proven by the immense popularity of RPG and MMORPGs.
Murray claims that the Holodeck medium it is not too distant in terms of technology. People can (predominantly in the USA) already take special “ride the movie”-themed amusement park rides where a vehicle is moved in sync with movie events shown on a giant screen. Viewers can for example “ride the Jurassic Park-movie” by going to a Universal Studios amusement park. IMAX theatres already provide the three-dimensional effect of the Holodeck. As people grow accustomed to the three-dimensional presence, Murray asks the immediate question: “what kinds of stories is such a high-sensory technology suited to tell us?” (Murray 1997, p. 45). This rhetorical question inevitably exposers Murray’s focus on narrative dimensions of technology. A valid counter-question is then: does every “high-sensory technology” have to “tell us” stories?

Murray turns to hypertext and video games. The pioneering efforts of the “serious hypertext” publisher Eastgate Systems are mentioned, as well as the seminal “postmodern” work of Afternoon: A Story (Joyce 1990) (also analysed previously by Aarseth). Video games have in developed their own narrative forms, but Murray is sceptical to the current state of the video game medium. It provides “thin narratives” and plenty of violence:

The largest commercial success and the greatest creative effort in digital narrative have so far been in the area of computer games. Much of this effort has gone into the development of more detailed visual environments and faster response time, improvements allowing players to enjoy more varied finger-twitching challenges against more persuasively rendered opponents. The narrative content of these games is thin, and is often imported from other media or supplied by sketchy and stereotypical characters, This lack of story depth makes even wildly popular figures like the Mario brothers of the Mortal Kombat fighters impossible to translate into successful movie heroes.

(Murray 1997, p. 53)

Once again, Murray fundamentally posits video games as having (or rather currently lacking) narrative content. A successful video game narrative is also expected to be translatable into successful film format, as indicated by her examples (it should be noted that both her examples have indeed been translated into film formats with abysmal results). Some exceptions with a “richer level of story satisfaction”, “theatrical experience” and dramatic turning points exist: Planetfall and Myst. The latter is an oft-mentioned video game in video games studies, as it was an immensely popular title at the beginning of the “CD-ROM era” and spawned a series of successful sequels. Released in 1993, Myst was a pioneer due to its visual achievements, with impressive and panoramic vistas of fascinating fantasy landscapes, and also because of its elaborate storytelling.
Closest to Murray’s heart is the technology of Virtual Reality (VR). This technology of computer-simulated environments creates its “virtual” image of reality with stereoscopic head-mounted displays (HMDs) that cover and project an image close to the eyes of the user, giving the user impression of total immersion inside the digital graphics environment. Occasionally combined with haptic technology, i.e. force feedback devices, it adds another dimension to the VR experience. Rising to prominence in the late 1980s and early 1990s, through a surge in research and development but also tremendous mass-medial and artistic attention, VR was long considered to be the future of media and communications. Many video game companies also joined the bandwagon, such as Nintendo in 1995 when it introduced the infamously unsuccessful Virtual Boy game console that projected “true three-dimensional graphics” through a HMD, but unfortunately it was underdeveloped with monochromatic red display lights, and quickly removed from the market after only one year (15 years later revived in portable format as Nintendo 3DS). During the late 1990s the futuristic VR hype subsided somewhat due to massive technological challenges, but also due to confusion regarding the purposes outside the world of entertainment. Nevertheless, VR technology holds huge potential, and much of its concepts persist in the fields of human–computer interaction, ubiquitous computing and in many regards within the video game medium.

The influx of interest in the VR medium also emerged in the academic world. Some of the more interesting and impressive work has been done by Marie-Laure Ryan in her influential Narrative as Virtual Reality: Immersion and Interactivity in Literature and Electronic Media (2001). In her broad study of electronic texts Ryan explores the dimensions narrativity, which she almost intrinsically links with electronic texts, as manifested by the title of her study. In a somewhat quirky fashion the title implies that virtual reality is a rewarding way to understand narratives (and not the other way around). The “two faces of VR”, immersion and interactivity, existed as dimensions of text media long before there was “electronic text” or VR (which depending on definition has not yet been fully technologically implemented). Ryan unquestionably sides with a narrativist perspective on video games. To explain her views Ryan defines eight properties of the “Holodeck medium”, which is inspired by the science-fiction technology presented in the Star Trek series, but is also an analysis of Murray’s notion (Ryan 2001, p.51–52):

1. Active embodiment.
2. Spatiality of display.
3. **Sensory diversity.**

4. **Transparency of the medium.**

5. **Dream of a natural language.**

6. **Alternative embodiment and role-playing.**

7. **Simulation as narrative.**

8. **VR as a form of art.**

Active embodiment signifies that the user enters a simulated world and actively embodies certain aspects represented inside this world. This can be done with several (human-machine) interfaces as specified by Ryan: headsets, data gloves and wired bodysuit. This embodiment does not lead to a Cartesian mind-body split, as is sometimes claimed by occasional VR critics. This embodiment is only made attainable by the spatiality of displays that enable three-dimensional depiction of space, giving rise to immersion. This feature has existed in many forms of media since the dawn of visual art: panoramas, cycloramas, stereoscopes, Renaissance perspective paintings, VR headset displays, imax cinemas, and even wide cave paintings all aim to represent space on a flat surface.

The VR medium provides sensory diversity as it incorporates multiple sensory outputs: images, sounds and even touch through haptic technologies. Smell and taste are left out (although commercial applications of on-demand scent experiments have been performed in Japan, Boyd 2008). Like Murray, Ryan indicates how multisensory media has been portrayed as a form of treacherous “anti-art” – best exemplified by Aldous Huxley’s “Feely” in his dystopian science-fiction classic *Brave New World* (Huxley 1932). Somehow, the notion of a fully immersive and translucent medium, that can deceive the senses, is a frightening prospect for many commentators. VR offers a total transparency of the medium. Drawing on the works of media theorists Bolter and Grusin (Bolter & Grusin 1999), Ryan endorses the view that historically media development has been partially driven by providing transparency of medium, *i.e.* making the medium’s format/technology as invisible as possible to the user/reader (perspective painting during the Renaissance, television, interactivity as simulation technology, photography, film, stereoscopes are only few examples). It could be convincingly claimed that VR is, due to its, as of yet, undeveloped implementation, more a manifestation of the ultimate medium transparency, rather than an incremental technology format.

VR/Holodeck implicitly incorporates the dream of a natural language. Every media form requires an interface language – reading a book not
only demands knowledge of a spoken and written language, but also of the “interface language” of a the book medium with layout, chapters, table of contents, indices, footnotes, prologues, foldouts among several examples. Even in such a naturalistic, and fairly transparent, medium as the radio it requires a separate interface language – frequencies, volume, time schedules and program formats create a radio-related (technological) language. The challenge of computer science, and IT commercialisation in general, consists of making the esoteric language of IT accessible to a larger, and technologically less informed, audience. Despite massive progress, with user-adapted Graphical User Interfaces (GUIs) and similar, IT still requires the understanding of a fairly synthetic symbolic/visual language, which can be challenging for large user segments. With increased complexity, the arrival of new (Internet-based) technologies which introduce entire universes of new symbols and concepts, the GUI-based paradigm is becoming a complex set of symbolical languages with considerable learning curves. Ryan proposes the ultimate dream: to create a medium whose interface mechanism is so natural that it becomes (seemingly) fully transparent. The dream (interface) language becomes totally invisible due to its correspondence to the natural language of reality – a mechanism that dispenses the need for symbolic interactions in favour of a computer system that understands our innate languages and concepts from the real world.

The VR medium provides alternative embodiment and role-playing since users can assume any visual shape or appearance imaginable. VR constitutes the ultimate mask and costume – there are practically no limitations except imagination (and cost of technology…) to assume any conceivable “virtual” role. This opportunity both frightens and fascinates various theorists. Renowned Polish science-fiction writer Stanisław Lem in a collection of non-fictional essays Bomba megabitowa (Lem 1999) deals with the potential downside of technology, condemned the use of avatars – that he calls phantomatisation (“fantomatyzacja”) – since it represents a danger to human communication due to escapism and the blurring of the boundary between reality and fiction. A different perspective is provided by Sherry Turkle whose influential work Life on the Screen: Identity in the Age of the Internet (Turkle 1997) explores and in many ways celebrates the possibilities of creating multiple identities by means of (IT) technology. Turkle, and many others, denounce the notion of one “real” identity in the physical world, with other manifestations in video games, chat forums, online communities or MMOs somehow representing a “virtual” and less valid alternative.

Ryan posits simulation as narrative, which puts her squarely in opposition to the ludological perspective and firmly inside the narrativist camp.
of video game researchers. Without any lengthy elaborations Ryan refers to Baudrillard’s view that simulation is in essence a deception and then defines the relationship between simulation and narratives as follows:

The essence of computer simulation, whether in VR or in less sophisticated environments, resides in its dynamic character. […] A typical simulation consists of a number of agents that are given an environment to live in and some rules to follow. The sum of these elements constitutes a narrative world, complete with characters, setting and principles of action.

(Ryan 2001, p. 63)

Thus, “a number” of elements create an environment and the result of this environment is a narrative world. The notion of “world” is central to Ryan’s theoretical framework where “worlds” are often portrayed as dichotomies to “games”. In this regards she differs from Murray by focusing on narrative worlds as opposed to just “interactive narratives”. Ryan quickly points out that the structures of narrative worlds do not constitute proper dramatic forms – the Aristotelian rise and fall of tension. Instead these structures assume the form of epics or serial (episodic) narrative. If and when the VR medium evolves, Ryan projects, it will be possible to steer user’s choices towards Aristotelian structures, which reaffirms Ryan’s theory as narrativist theory where the role of the video game/VR medium is to adapt, generate and influence the video game mechanisms in order to provide an experience of narrative(s) – in a traditional literary sense.

Finally, Ryan considers VR as a form of art. She concludes shortly that it becomes an evident result of the other features. There are not really any formal reasons why VR/Holodeck/video games should not be seen as a form of art, except perhaps perspectives founded on extremely subjective aesthetical foundations that define art in terms that restrict the notion to the traditional fine arts only.

Ryan establishes the VR/Holodeck medium as dynamic, three-dimensional (spatial), multisensory, transparent, simulation medium with a natural interaction language, allowing active and alternative embodiment inside a narrative world. Ryan does not elaborate the feasibility of achieving this type of medium, and at all why it should be created. This development vastly deviates from the pioneering works of such VR visionaries as Jaron Lanier with his legendary company VPL Research that envisioned the Home Reality Engine, a consumer product that would bring VR to the mainstream society and into everybody’s homes.

Murray, on the other hand, establishes a roadmap to the Holodeck medium, by comparing the current state of computers to the Lumière brothers’ first screenings, or to Gutenberg’s first movable type prints. Murray
chooses Joseph Weizenbaum’s eliza from 1966, as the groundbreaking and prophetic moment in computer history when the future potential of a newborn medium could be imagined. eliza is simple and experimental conversation program that imitates and parodies a Rogerian psychotherapist by continuously avoiding answering questions and rephrasing statements from the reader and posing them back.

MURRAY’S ESSENTIAL PROPERTIES

The eliza example acts as the stepping stone for the central elements of Murray’s theoretical framework, the four essential properties of digital environments: procedural and participatory properties that make up the interactive dimension of cyberspace, which together with the immersive dimension of cyberspace is constituted by the spatial and encyclopaedic properties. The combination of interactive and immersive as fundamental dimensions of digital environments/electronic media also constitute the major pillars of Marie-Laure Ryan’s analysis of narratives in virtual reality (Ryan 2001).

The procedural property of software/video games is an essential characteristic constituted by the mathematical and binary logic of IT/electronic hardware/software. Video games are sets of mathematical rules, from a purely technological point of view. However, an information technology-based medium does not necessarily have to be procedural – there is nothing procedural about watching a film in digital format on a computer screen (except for the procedural underpinnings that translate the film from bits into a display of motion pictures).

Slightly exaggerated it could be claimed that much of the captivating and imaginative uses of information technology are those that successfully disguise the procedural mechanisms that produce an interesting software application. The innovative success of Weizenbaum’s eliza lies in its perceptive (and highly ironic) identification and subsequent translation of Rogerian psychotherapy into a set of simple procedural rules that could be executed by the fairly limited computer workstations of the 1960s. The entire field of artificial intelligence (AI) research is founded on two pivotal challenges: to define and identify the dynamics of (human) intelligence, and subsequently translate these definitions into strictly procedural terms and mechanisms. AI is the ultimate and quintessential challenge of disguising procedural logic to the point that its intelligent behaviour can only be recognised by human intelligence, in accordance with the principal postulate of the so-called Turing Test (Kurzweil 2000).
The procedural dimension is enhanced by the participatory property that allows the player to induce procedural behaviour, which is responsive to our input, and gives rise to further induction of procedural behaviour. This constitutes the primary representational property of the computer:

Just as the primary representational property of the movie camera and projector is the photographic rendering of action over time, the primary representational property of the computer is the codified rendering of responsive behaviours. This is what is most often meant when we say that computers are interactive. We mean they create an environment that is both procedural and participatory.

(Murray 1997, p. 74)

Consequently, Murray’s definition of interactivity consists of rule-based environments that allow participation by the player.

Murray illustrates the participatory dimensions with one of the first text-based adventure games Zork (Anderson, Blank, Daniels, & Lebling 2004) from the late 1970s. Murray assumes that it involves characters in some sort of narrative, positioning it close to Aarseth’s perspective textual typology variable that determines whether the player plays a strategic role in the game/text world (Aarseth 1997, p. 63). The participatory property is an essential component of interactivity, but in Murray’s perspective it is focused primarily on “narrative” video games (such as Zork).

Zorkwas developed using the LISP programming language (List Processing Language) and, according to Murray, one of the first to employ so-called object-oriented software design. This programming paradigm organizes the source code into programming blocks called objects, which have properties, functions and relations to other objects, defined by programmers. This suits video games’ software design where object-oriented programming lends itself conveniently to the challenges of creating a consistent and structured video game world full of objects of different kinds. The procedural and participatory properties can be implemented in an intuitive and corresponding fashion, which has radically affected software design and technology of video games.

The third property is the spatial property of cyberspace and is characterized by its power to represent navigable space. Unlike “linear media” such as books and film, which can only describe or portray space, Murray claims that only digital environments can present space that users can move through. The spatial property is independent from user interface, graphical perspective and communicative function:

Although this spatial property has been widely exploited in graphical applications, it is in fact independent of the computer’s ability to display maps, pictures, or even three-dimensional models. It is also
independent of its communicative function in linking geographically distant places. The computer's spatial quality is created by the interactive process of navigation. We know that we are in a particular location because when we enter a keyboard or mouse command the (text or graphic) screen display changes appropriately. 

(Murray 1997, p. 80)

The spatial property is part of the immersive dimension (and not interactive), but the spatial property is in its essence “created by the interactive process of navigation”. It is not a question of (graphical) representation, since text-based Zork together with the highly visual and three-dimensional Myst are mentioned as instances of navigational creation of space. Murray does not elaborate what type of space the spatial property is referring to. Most of the examples are text/graphical depictions of (physical) three-dimensional space. This corresponds adequately to most contemporary video games that use 3D-space form. It corresponds completely to the Star Trek vision of the Holodeck – all depictions are from the transmedial “Star Trek universe” with 3D simulations. Evidently, this type of “space” excludes myriads of alternative spaces available in “digital environments”/video games. Puzzle games, music games, party games or other video games without depiction of physical space, are all excluded. Murray does, however, imply different types of spaces – hypertext novels, and in particular Victory Garden (Moulthrop 1991) – where the “space” is the hypertextual network with exploration of the labyrinth of links and options in the hypertext fiction. She is apparently positing space as a prerequisite of navigation, which is at the core of the spatial property of digital environments.

The immersive dimension of cyberspace is created by the spatial property together with the encyclopaedic characteristic, which emphasises the “infinite resources” of information technology (compared to other narrative formats):

The encyclopedic capacity of the computer and the encyclopaedic expectation it arouses make it a compelling medium for narrative art. The capacity to represent enormous quantities of information in digital form translates into an artist’s potential to offer a wealth of detail, to represent the world with both scope and particularity.

(Murray 1997, p. 84)

Once again Murray demonstrates her explicit assumptions regarding the computer and its resources to be intrinsically narrative in its constitution. She marvels over the capacity of modern memory storage technologies – and in particular the CD-ROM (700Mb capacity), which became immensely elevated and synonymous of a new computerised form of (multi)media. It
was used in applications that previously were prohibitively expensive such as encyclopaedias, interactive books, interactive learning programmes, video games and even non-entertainment software that tapped into the ample resources of rich, vivid and interactive content from various media forms – hypertext, sound, video, computer graphics. CD-ROM had nonetheless several limitations: it was a static, “read-only” (content cannot be modified by user) and slow technology. In spite of this, aspirations associated with this technology were almost unlimited:

Now you can use them [CD-ROMs] to choose a hotel, track down a patent, or teach your kids to read.

(Alpert 1992)

It became a buzzword and the epitome of the infinite, but yet unfulfilled, potential of the information age in the pre-Internet era, a stepping-stone for the burgeoning “multimedia industry” – computer-mediated work of (graphical) artists could be used for an interactive CD-ROM, a video game, television graphics or the print-based industries. Seminal software tools such as Macromedia Director, Adobe Photoshop and 3ds Max gave rise to an entire generation of computer-based artists, and have profoundly affected the creative uses of computers.

IMMERSION, AGENCY AND TRANSFORMATION

Murray defines three elemental characteristics of cyberspace aesthetics: immersion, agency and transformation. Immersion, as defined previously, is created with the new abilities of the digital environment, but also through the interactive dimension where users take part in the narrative. This aspect is further developed with the aesthetic characteristic of (cyberspace) agency with navigation as one of its components. This navigation is both through graphical space, but also narrative space, which in line with much of narratologic research, is represented as different types of mazes and labyrinths. The third and final aesthetic dimension concerns the transformative power of computers with morphing story environments.

Immersion

Immersion is when a player/reader enters a new world that completely surrounds them with sensations that absorb their attention to the point of dominating the whole perceptual apparatus. Sometimes, a way to escape reality (overflowing the senses with impressions), but other types stimu-
late participation and learning. Murray focuses on the latter type – the enjoyment of immersion as a participatory activity. Murray’s immersive cyberspace dimension is based on child psychiatrist D. W. Winnicott’s notion of “transitional objects” (Winnicott & Löfgren 2003). It is part of the transitional experience zone between the real world and the self. A classic example is that of a teddy bear as a transitional object for the infant child. It reminds the child of its soothing mother, thus part of the child’s emotional self and encoded with emotional significance, but the teddy bear is also part of a real world independent of the child. Narratives, according to Murray, have the same position between the real and the self. It is part of an external reality since it created by someone else, an author – but it is also part of our internal self, something that we, the readers, project onto the narrative. Murray sees this balancing act between the external and the internal dimensions as pivotal for understanding the immersive aspects of cyberspace.

A fundamental problem in participative narratives is the boundary between fictional and real world. How is the boundary maintained without disruption, when the reader/player is participating within the narrative? She provides examples where narrative suspension of disbelief is disrupted when the reader becomes aware that the narrative is constructed and part of the author-text-reader relationship. When watching a film, from the sloppiest kind of second-rate porn-movies to the most sophisticated high-art film, the viewer is predominantly assumed to be an invisible observer that watches through the camera lens. A departure breaks this illusion, except for films that allude to vague references of post-modernism and/or post-structuralism usually also containing glimpses “behind the cameras” with the film set and its crew, e.g. in Michael Winterbottom’s Tristram Shandy: A Cock and Bull Story (2006), where half of the film takes place behind the camera in a pseudo-documentary fashion.

The boundaries between representational and actual world lie in the digital equivalent of the theatre’s fourth wall. Actually, many early works of newly established media are focused on the exploration of this boundary, as illustrated by examples from film and digital media. A well-used method is to structure the participation as a visit. An illustration of this are the previously mentioned amusement park rides, where the experience is set up as a narrative of a visit. Nevertheless, the visit will offer limited immersion if it is only by means of a shielded viewing platform – users/players prefer to engage more deeply with the immersive world if it is to provide a lasting impression. This type of engagement is, despite appearances, also present during the conventional act of reading, according to the literary theory school of reader-response (Iser 1975) which focuses on the implied reader and how it must respond and engage during reading – “filling in the
gaps”. The process of reading a text or watching a film thus requires more than passive reception and the “willing suspension of disbelief”, but in Murray’s words is rather an “active creation of belief”. In cyberspace this creation of belief is more active than ever.

Throughout history narrative participation has often been structured with the aid of masks – pageantry, the Renaissance, Halloween – disguising the identity of the wearer, but also aiding the creation of belief by separating participants from non-participants. In digital environments these masks are constituted by avatars – the graphical representation of characters within cyberspace. If other participants are present – the challenge of creating collective immersion arises. A popular way of achieving this is to assign roles, which limit and contextualise the narrative on an individual character level – providing a framework of possible actions, goals and motives. A frequent application of these techniques, for collective immersion and narrative engagement, is within Live-Action Role-Playing (LARP) games where people assume masks and roles and develop “interactive” narratives in the form of theatre. The tradition lives successfully on in the video games medium, as MMORPGs and similar role-playing video games.

To maintain the fragile nature of immersion, regulation of its boundaries is necessary. Murray explains that if a film becomes too real it has transgressed a boundary that limits the immersive effect. That is why in many cases a (good) Hollywood blockbuster film depiction of love (making) can be significantly more pleasing than watching a porn movie where “love” is depicted in its most physically explicit way (without context and boundaries that generate tension of immersion). Something needs to be left to the imagination, in order to “regulate the arousal” as Murray puts it. The narrative conventions that control the boundary between the real world and the illusion are present in the case of LARPs and MUDs as rules of the world/game. Murray sees rules as the first step in the conventions of the new participatory theatre stage that is the computer, and constituting its “fourth wall”.

**Agency**

An immersive environment provides the reader/players/users with incentives to be active – the more immersive the environment the more active the player wants to be inside it. If this activity brings about meaningful results it gives rise to the second aesthetic characteristic:

Agency is the satisfying power to take meaningful action and see the results of our decisions and choices. We expect to feel agency on the computer when we double-click on a file and see it open before us.
or when we enter numbers in a spreadsheet and the totals readjust. However, we do not usually expect to experience agency within a narrative environment.

(Murray 1997, p. 126)

Agency is one of the most differentiating aspects of digital environments. Participatory narratives/theatre forms have existed throughout history with sing-a-longs or even stage appearances/acting by members of the audience. However, this participation is highly structured and in most cases illusional since the agency of the (external) participants is practically nonexistent, and the outcomes are well-known and pre-scripted (the possibility of changing sing-a-long lyrics are quite limited). There are in other words rules, formulas and conventions to these forms of participatory narratives. Digital environments also have similar rules of participation, with differences in terms of agency and the scope of the rules. Digital environments dynamically alter according to our participation – the sing-a-long does not allow that kind of dynamics. Murray posits agency as related to the term interactivity, which she finds to be a vague yet pervasive term often confused with activity. Agency goes beyond both participation and agency, and is an experience in itself. When entering the domain of games, Murray asks a pivotal question:

Therefore, when we move narrative to the computer, we move it to a realm already shaped by the structure of games. Can we imagine a compelling narrative literature that builds on these game structures without being diminished by them? Or are we merely talking about an expensive way to rewrite Hamlet for the pinball machine?

(Murray 1997, p. 129)

There are some implicit assumptions in this quote: the computer is shaped by the structure of games, secondly games are (possibly) in a negative relationship to narratives, and finally games should be adapted to narratives.

Murray does not elaborate extensively why the computer is shaped by games. Video games are successful applications of “digital environments”, but so are for example ERP systems, accounting software and ballistic calculations too, to mention just a few. Murray most probably means that video/computer games are currently closest to her vision of “interactive narratives” in digital environments. The claim that “compelling narrative literature” is possibly diminished by “game structures” posits games and narratives as conflicting antipodes. Murray considers current video games as having “thin narrative content” mainly evolving around “finger-twitching challenges”. Inevitable there is a clear hierarchy of high culture aesthetical values in Murray’s study: narrative media constitute a higher form, than
the nascent video games medium. Murray’s project is in an attempt to theoretically develop the video games medium into a higher, and more narrative, (art) form. Part of this project is to alter the video games medium into something that provides a narrative experience on the same profound level as other narrative media forms, but with the added exceptional properties of digital environments. Murray depicts an almost deterministic force driving the historical development of media forms, and the unifying texture of these disparate forms of expression is constituted by the elevated notion of narrative.

Murray highlights several aspects of agency in video games/cyberspace/Holodeck: navigation, maze stories, rhizome, regulation of anxiety, journey stories, game stories, constructivism and interaction as authorship. Narratives emerge from various types of navigation – be it navigation of physical spaces, or story spaces. Navigation of a digital environment is in itself a dimension of the video games medium. The spatial property of digital environments entails spatial exploration. Murray identifies two types of narrative formats generated by space exploration: solvable maze and tangled rhizome. The solvable maze stretches back to ancient Greek mythology, through Kafka to contemporary video games. It incorporates a classic narrative of lurking dangers, but always salvation at the end of the maze. The cognitive problem of finding the way out of the maze is often juxtaposed with the emotional problem of overcoming fears of dangers and unknown, thus resulting in a powerful narrative form that has lasted for thousands of years. Besides being literally depicted as a physical maze, the solvable maze category of narratives also includes metaphorical varieties, for instance with Kafkaesque “mazes” of depersonalisation (or similar). The navigation in the case of solvable mazes moves the player towards the unfolding of the story – this process affords narrative agency to the player. The drawback to this type of narrative is its single solution – the end of the maze.

The second type of labyrinth is the rhizome, stemming from the Deleuzian notion of non-hierarchical network of nodes where every node may be connected to any other node. Instead of a solvable maze with a single exit and conclusion, a rhizome is without exits or endings. This concept has been applied by various post-structuralist and post-modernist theorists, and in particular those studying electronic (hyper)textuality, representing a text that does not follow the traditional linear organization, without borders or conclusions. Some hypertext theorists see this non-hierarchical/non-linear text organization as a revolution in (media) communication – emancipating the readers, killing authors and democratising mass-communication. Like Aarseth, Murray disputes many of these claims, noting how rigid the navigation control is that many celebrated literary hyper-
texts give their readers. Nonetheless, Murray claims that there is expressive power in the rhizome structure where the pleasure is in the endless exploration and not in finding an exit with closure.

Another narrative format with participative agency is the journey story. The root of this format stretches back thousand of years to oral storytelling of adventurous voyages of courageous men such as Odysseus or Sinbad. It has countless versions and entire genres (e.g. “the road movie”) in contemporary narrative media. The notion of the journey and additionally a hero carrying it out, has been analysed and elucidated by Joseph Campbell in the seminal work *The Hero with a Thousand Faces* (2004) outlining the so-called monomyth of many narratives from various cultures and ages. Campbell’s claim is that most narratives and myths can be generally outlined with seventeen stages of the monomyth. These stages describe a hero’s journey, which generally adheres to the following structure:

1. *Hero gets called for adventure, which means leaving home and setting on a journey.*
2. *Hero overcomes various obstacles during the journey.*
3. *Hero succeeds, which often entails important insights for the hero.*
4. *Hero returns home.*
5. *Hero improves his home world with his improved insights.*

The examples provided by Campbell, and various followers of his theories, include Buddha, Moses and Jesus myths and in modern settings the Hollywood films Star Wars, Indiana Jones and Matrix, to mention only a selected few. Some would even claim that basically all major narratives in films could be described using Campbell’s theory (Vogler 1998). Campbell’s theories thus constitute a salient attempt to describe an overarching super-narrative of narratives.

One obvious criticism of the theory is its abstract, universal and all-embracing scope – what about narratives outside the reach of the hero’s journey, are they even possible according to this theory? Another criticism is the implicit gender perspective – the hero’s journey considers the male to be the hero, and even posits the female as temptress, which is one of the seventeen stages of the monomyth. Evidently this does not account for all myths and narratives, and presents a gender-based view on narrative structures, something that several theorists have objected to and proposed an alternative heroine’s journey (Murdock 1990).

Murray’s perspectives on the journey focus on the process of overcoming obstacles, which in the computer-based journey stories is intensified.
through the navigation process, or problem/puzzle-solving as it is usually referred to. Solving video game puzzles to further advance a journey is a classical gameplay element in many adventure video games. For instance, in the first installation of the video game series *Ratchet & Clank* (Insomniac Games 2002), the main character, Ratchet, can only open certain locks (“Invinc洛克”) by using a special Trespasser tool, which in essence is an escape from the three-dimensional adventure world into an abstract two-dimensional puzzle game where laser beams have to be aligned with receptors using circular shields. Another, significantly more integrated example of puzzle gameplay elements is the lauded video game *Ico* (Team Ico 2001), where the entire game is basically an elaborate puzzle game. Ico revolves around a boy (with a pair of horns) trapped inside a majestic and mysterious castle. The point is to solve the puzzle of getting from one room to another within the castle, and in the end escaping the castle in total while assisting princess *Yorda* – a passive and less agile person.

Murray warns that game satisfaction can be the direct opposite of narrative satisfaction. In her favourite example, Myst, the option of finalising and winning the game is significantly less satisfying than exploring other “loosing” options since those give rise to more intriguing narrative results:

> How can we impose endings that yield complex story satisfactions on a form that is based on win/lose simplicity? Many would argue that computer-based narrative will always be gamelike and that such dis-satisfactions are therefore inevitable.

*(Murray 1997, p. 142)*

Murray assumes that the complexities of story satisfaction are to be faced with the simplicity of a binary win/lose structure. Nonetheless, Murray claims that these two structures can be combined, by defining games as abstract storytelling that generates symbolic dramas by compressing and resembling the world. Regardless of content or reader/player role the plot of games is one of the following:

- I encounter a confusing world and figure it out.
- I encounter a world in and assemble it into a coherent whole.
- I take a risk and am rewarded for my courage.
- I encounter a difficult antagonist and triumph over him.
- I encounter a challenging test of skill or strategy an succeed at it.
- I start off with very little of a valuable commodity and end up with a lot of it (or I start off with great deal of a burdensome commodity and get rid of all of it).
I am challenged by a world of constant unpredictable emergencies, and I survive it.

(Murray 1997, p. 142)

Even luck-based games with dice enact symbolic dramas. Games are symbolic drama enactments of basic relationships to the world such as complexity, disorder, risk, difficulties, experiences, accumulation, uncertainties and emergencies. Murray likens these fundamental positions in life to the ritual actions of religious ceremonies, where patterns of life are enacted. Furthermore, Murray also posits games as “texts that offer interpretations of experience”. Part of this line of argumentation is Murray’s conspicuous interpretation of Tetris, which has attracted considerable attention in the video game studies field. In Murray’s eyes Tetris becomes:

[…] a perfect enactment of the overtasked lives of Americans in the 1990s – of the constant bombardment of tasks that demand our attention and that we must somehow fit into our overcrowded schedules and clear off our desks in order to make room for the next onslaught. [...] The screen objects are like a symbolic language for inducing our activity. [...] Tetris allows us to symbolically experience agency over our lives. It is a kind of rain dance for the postmodern psyche, meant to allow us to enact control over things outside our power.

(Murray 1997, p. 144)

Evidently this refers to a notion of narrative that is significantly broader than traditional definitions such as Genette’s: “the representation of an event or of a sequence of events. The active organizing of geometrical shapes could be read in several different ways, and its similarity to busy western lives lies most likely in the characteristics of dealing with an overtasked situation under time pressure. Murray believes the “simplistic story structures” of video games can be evolved with the most common game form of all – the agon, based on a contest between opponents, and also one of the French philosopher Roger Caillois’ four patterns of play, amongst alea (chance), mimicry (simulation) and ilinx (vertigo) (Caillois 2001). Not coincidentally, agon is also one of the oldest form of narratives – used extensively in the Ancient Greek drama world. Murray sees this form of narrative as an extension of the fundamental human tendency to organize the spatial and temporal world into dichotomies – in the contest the dichotomies are pitted against each other. Most current video games are based on contests between players (multi-player games), or between computer and single-player. One of the most acclaimed multi-player video games of all time, Counter Strike (Valve 1999), involves several players grouped into opposing teams that connect over networks to fight virtual gun battles in various
environments. These games offer an intriguing combination of entertainment and satisfaction. It not merely taps into the primordial human fascination with violence, but also manages to combine the agon with agency and immersion into an elementary game form. Murray does not consider this “simplistic violence” as the most developed form of the agon narrative and encourages FPSes and other agon-based video games to evolve the genre with different gameplay options such as playing on the enemy side, or raise moral questions about violence and war.

A sign of this development might be the so-called *stealth game* genre, exemplified by the successful *Metal Gear Solid* series. Seemingly set in similar gameplay environments, in this genre the preferred method of overcoming obstacles and opponents is not destruction or violence, but rather stealth and shrewdness. For example, in *Metal Gear Solid 2: Sons of Liberty* (Konami 2001) the player assumes the role of secret agent *Solid Snake* who infiltrates a terrorist base to liberate the President of the USA who is being held at ransom. In this video game, which could easily be considered one of the most cinematic and highly (conspiracy) narrative-driven video games of all times, the gameplay is *not* based on the expected violent killing of terrorist soldiers, but instead on sneaking and hiding. It demonstrates that more nuanced and complex agon gameplay forms can exist – even in such a similar context as the militarised and violent settings of many FPS video games.

Murray strives for *constructivist* digital environments, *i.e.* digital spaces that are not based on win/lose game playing, but on the “collective construction of elaborate alternate worlds”. The ability to construct things and then observe their autonomous behaviour is “the highest form of narrative agency the medium allows”. Playing games is consequently not fulfilling the narrative agency of the video games/cyberspace medium to the fullest. Since the writing of Murray’s study, the rise of MMORPGs and MMOs has indeed proven constructivist digital environments right, in large part thanks to the diffusion of (broadband) Internet on an affordable and global scale. One of the most rewarding examples of unrestrained constructivist digital environments is the online world of *Second Life* (SL). Developed by Linden Labs and launched in 2003, it quickly captured a large mainstream audience estimated at almost 12 million users, as of early 2008 (Linden Labs 2008). In the SL world users, like MMORPGs and MMOs, create avatar(s), becoming digital manifestation and representation inside the world. Users/players (or Residents as they are called in the SL community) can assume any given humanoid shape, and with no entry fees freely visit different areas. Residents can also construct any type of 3D digital objects using content creation tools supplied for free. Additionally, for the technologically inclined, pre-determined properties and behaviour can be added with small
software scripts. SL is a creative tool, platform, network and navigational environment integrated into one medium form. It constitutes the ultimate constructivist dream – there are no limitations to the forms, properties and behaviour of objects that users can create. Limitations occur when users/resident want entire digital environments/lands to place objects. Land has a price, in so-called Linden Dollars (L$), which can be bought/sold for L$ on the LindeX exchange, where relations to real currencies are set. Intentionally this has given rise to a to a virtual monetary economy, and this is where Linden Labs taps in, with taxes and virtual real estate sales, attempting to create a viable business venture.

This “inverted” business model where the core product/service is free, and added services generate revenues is not unique – several other video game developers have opted for a similar formula. For instance, the Swedish game developer MindArk with their Entropia Universe (EU) MMO allow free exploration of a three-dimensional science-fiction universe on the planet of Calypso where items such as weapons, armour, ammunition, machines, buildings and land must be bought with Project Entropia Dollars (Peds), which are traded at a ratio of 1:10 against the US dollar (MindArk 2007). Essentially, in these types of play-for-free MMOs the core product/service becomes an underlying public platform for generating revenues by charging for participation in constructivist expression.

With such dynamic constructivist environments as SL and EU a pivotal question arises: what is the position of the author and reader in these new settings? Several (hypertext/new media) enthusiasts subscribe to a more revolutionary perspective, where the traditional (linear) narrative communication is redefined to such a degree that the traditional positions of reader and author are being invalidated. This ambiguity and interconnectedness of the medium has given rise to comparisons with various currents of postmodern thought that emphasise the diversity, complexity, contradiction and fragmentation of current society and culture. Others, including Murray and Aarseth, propose a more cautious analysis. Murray calls the reader an interactor who plays a creative role within an authored environment – but do not have authorship of the environment itself, as a consequence of the procedural property of digital environments. Authorship is to define the mechanisms within these borders:

Procedural authorship means writing the rules by which the texts appear as well as writing the texts themselves. It means writing the rules for the interactor’s involvement, that is, the condition under which things will happen in response to the participant’s actions. It means establishing the properties of the objects and potential objects in the
Murray compares the author to a choreographer that supplies music, context and a set of steps, which the interactor can improvise to create a unique performance.

**Transformation**

Finally, the third characteristic “pleasure” (as Murray calls it) of digital environments is transformation. The computer bestows a tool that can transform and provide any type of shape in digital format – Formula One race track, gory World War II battlefield, foreign civilisations and planetary system, legendary luminaries in their historic environments, schoolyard full of bullies, or anarchistic and violent sin cities, to mention only a few. Again, Murray seems slightly reluctant to fully define concepts – the notion of transformation is not comprehensively established as it points to visual transformation power in digital environments, while other examples provide morphing stories and personal transformation, which begs for further clarification.

When this conspicuous digital affluence matures it can be applied as more subtle effects to visualise and enact alternative versions of interactive narratives. Murray’s preferred concept and metaphor for this new narrative environment is kaleidoscope. It displays fragmented reflections of one object/image from numerous angles, similar to interactive narratives that explore and display a subject from numerous perspectives. Inspired by renowned media theory thinker Marshall McLuhan’s observation that 20th century media communication is more mosaic rather than linear in structure, Murray prefers to call the multivariant options of interactive narratives, kaleidoscopic narratives. The computer can help the reader access different fragments of the mosaic of kaleidoscopic narratives. Murray focuses on the ability of kaleidoscopic narratives to present simultaneous actions in multiple ways. For instance, the FPS game *Battlefield 1942* (Digital Illusions CE 2002) gives the possibility to fight as part of the Allied forces during World War II or, intriguingly, as part of the Axis Powers. Joining the Axis Powers raises questions about the countless personal dilemmas of wars: why is the killing of an enemy considered bravery, while the death of an ally is something evil? The historical insights might be debated, but on a symbolic level it sheds light on historic events from two different perspectives. War films, books and documentaries are inevitably tainted by the...
perspective of the maker, no matter how historically objective the premises might be. Losers will emphasise their suffering, and misunderstandings, while winners will stress their triumphs in more or less refined ways – regardless of the views of the “historically correct” consensus.

This is just one of many contemporary examples of multiple perspectives on simultaneous actions with intriguing narrative consequences. New ways to organize and navigate these highly complex structures have to be developed. Murray proposes the theatrical conventions of exits and entrances, where the reader enters different spaces that are linked to the narrative events allowing visits to different places in time and space, creating a more profound immersion due to the more comprehensive understanding of mechanisms that unfold certain events. This, according to Murray, reflects more truly our “turn-of-the-century sensibility” where society has stopped believing in one single reality, perspective and society – kaleidoscopic narratives are more suited to represent this postmodern realm.

An alternative to exits/entrances is what Murray refers to as morphing story environments where interactors construct their own story out of a palette of formulaic elements. The interactor becomes a narrative bricoleur that assembles his/her own story from array of narrative modules. Murray gives examples of how the adolescent Brontë sisters created their own elaborate, and highly morphing, narrative universe with several written stories, and compares these to the video game worlds of Myst created by the Miller brothers. In these universes the elements are continuously transforming to tell new stories. Nevertheless at some point these narrative worlds cease to be appealing, and have achieved a narrative and emotional closure. Projecting and externalising fantasies (adolescent feelings of sexual longing and guilt, in the case of the Brontë sisters) onto a narrative world creates a safe haven in which the interactor can safely deal with his/her own fantasies without having to confront them personally. Once this underlying fantasy, an emotional tension, is brought to the surface it becomes resolved. Murray stresses that formulaic content in other media forms are similarly driven by this emotional tension. For instance television police series use highly formulaic content, but investigate various underlying fantasies that once brought to the surface have exhausted their emotional tension and suspension. The audience might be interested to see a farewell sequence that rounds off the series, but elaborate depictions of the police hero’s life post-mission (e.g. going for a drink or paying overdue bills) is not interesting in any way. Not because these events are boring in themselves, but because they are now detached from the underlying fantasy.

Another transformational characteristic is the possibility to achieve personal transformation. Murray’s notions of transformation are fairly vague: transformation of digital objects (predominantly visual diversity), transfor-
mation of story environments, and finally personal transformation (transformation of the reader/user/interactor). The connection between the first two types of transformation is comprehensible since Murray’s “morphing story environments” become ways to organize and various digital objects into event sequences and narratives. Formulaic story environments are also the relationships between objects, their properties and the events that occur to them. However, the causal link to personal transformation, i.e. providing profound experiences, is allegedly a result of the increased immersive effect of enacting narratives, instead of merely receiving traditional linear narratives. Murray points to the experimental use of VR technology to treat various phobic patients, that incorporate interactions within the virtual world as personal experiences, and later transfer to the patient’s perception of the “real” world.

These claims cut to the core of the entire debate about the purported link between violent behaviour and exposure to violence through video games media consumption. The debate is beyond the scope of this study, nonetheless most of the (psychology) research that investigates the purported relationship between video games and violence, rely on claims that the difference between fantasy and reality are being blurred when playing video games, especially among children below a certain age (Goldstein). The increased psychological impact of video games must consequently depend on some dimension pertaining to the nebulous notion of “interactivity”. Frequently, the attention falls on the notion of enactment and terms conceptually related to it. The fact that video games require the user/interactor to enact actions within the medium, set it apart from other traditional forms of media. Murray subscribes to this perspective, and subsequently also to the claims that video games can have negative impact on players (such as violent or antisocial behaviour), and children in particular.

With the three aesthetic principles of immersion, agency and transformation Murray has laid down the fundamental dimensions from the perspective of the reader. To fully understand the video game medium and its communication process, Murray also investigates dimensions of authorship. The next chapter will be dedicated to these matters.

**PROCEDURAL AUTHORSHIP**

Murray’s theories on the authorship of narratives in cyberspace is based on the concept of so-called procedural authorship, and stemming from the research done by Albert Bates Lord and studies on oral bards. Oral story composition, as Lord describes it, is based on narrative devices for patterning language into units that are used formulaically to produce stories that
are recomposed for each recitation. Murray also cites and applies similar
theories of Russian formalist Vladimir Propp from the Russian oral tradi-
tion. Murray believes that cyberspace narratives should be composed of
“functions” that produce entities in a multiform plot space through which
users navigate.

Murray claims that kaleidoscopic narratives are not radical departures
from the techniques of previous narrative media forms. Murray point to
Carl Jung, Joseph Campbell, Rudyard Kipling, Jorge Luis Borges and oth-
ers to elucidate perspectives on the similarities and structures of stories
regardless of culture and age. All of these thinkers have claimed that most
stories can be reduced to a limited set of archetypical super-stories and
patterns, which are particularly suitable for computer environments. How-
ever, captivating stories are something more than merely a resuffle of for-
mulaic patterns. To answer this challenge Murray turns to the oral bard
tradition, as famously described by literature theorist Albert Bates Lord.
As a professor of Slavic and comparative literature, Lord was interested in
the oral storytelling of the bards in the Balkan peninsula (more precisely,
former Yugoslavia). His remarkable conclusions showed that there were
similarities between the Homeric poems and those still told by oral bards
active in the Balkans. Consequently, the “works of Homer” were most
likely not the work of one single author but rather the result of storytell-
ing cultures, similar to the one in the Balkans, which relied on a formulaic
system of narrative patterns. They facilitate the organization of stories, but
also the process of memorising. One of the fundamental mechanisms is
a “substitution system” where certain archetypical concepts and characters
are associated with an array of epithets and synonyms. Simply referring to
things in synonymous ways meant that a simple core story could be refash-
ioned into an impressive number of stories. These patterns create the fun-
damental building blocks of narratives – Murray calls them “primitives”.

In the case of interactive narratives these primitives are constituted by
“the actions of the interactors themselves, as structured by the author.” Current-
ly the “primitives” according to Murray are too simple, and have to be de-
veloped into more expressive ones. This is already happening as the esoteric
text commands of early computer games are exchanged for more intuitive
and more transparent commands and movements in three-dimensional
space. Murray claims that these more advanced commands are comparable
to “a few useful epithets for the gods” of the oral bard tradition, but that the
primitives will have to mature significantly before truly expressive interac-
tive storytelling is possible.

The next step is the theme, which is a generic narrative unit that fits
into multiple narratives. Themes such as “a hero leaves home”, “the sea voy-
age”, or “the death of a hero”, etc set the stage for the development of the
narrative. For instance, the genre of road movies has the (motorised) road journey as narrative unit with certain standardised must-have elements: the departure, sweeping landscapes, images of endless roads, feelings of lethargy and the culminating arrival to the destination upon which the main character(s) stays, returns home or continues the journey endlessly. The theme becomes a device that produces certain standardised narrative dimensions due to the structure/logic of the theme. Murray finds strong resemblances between bardic themes and electronic games/muds. Electronic narratives are currently inspired by formulaic genres such as fantasy, science fiction and comic book heroes, which are in Murray’s view close to the folktale tradition. In these genres the readers/interactors have a set of popular narrative elements, similar to the narrative themes of the bardic storytellers.

Finally, on the highest level of Lord’s theory, is the assembly of thematic units into plots. Usually these are grand narratives of e.g. “the return of the hero” and similar. Lord concluded that basically all stories/songs concerning a given topic, were more or less the same story told in modified ways by rearranging various themes based on stock phrases into larger plots. The tradition of oral bard storytelling did not focus on preserving an “original” story – it was more interested in preserving the underlying structure of stories that upon recital is enacted and given a unique twist. Lord called these “fluid texts” or multiform stories, and this is also the inspiration for Murray’s notion with the same name where the author is no longer writing one single static text, but creating a dynamic and morphing text that users interact with.

Murray continues her development of the procedural authorship by applying the theories of the Russian Formalist Vladmir Propp whose impressive work consisted of reducing 450 Russian folktales into “functions”, or morphemes, thus creating a morphology of the folktale, i.e. the study of the internal structure of folktales. Propp’s theories not only identified functions/morphemes, but also provided rules, relations and combination of these functions/morphemes. It was recognised that morphemes, and indeed all types of narrative units/modules, are not universally versatile as regards contextual compatibility. For instance, if the hero dies on the battlefield, a triumphant return to the home village is not applicable – each consecutive event must adhere to the logic set out by the line of previous events. More refined and culturally contextualised/symbolical logic of events must also be taken into account – having a cheerful party after a funeral is fully possible, but within certain cultural conventions this event sequences is impossible too. Propp discovered that many elements came in pairs. Using special symbols for the morphemes and graphs Propp could visualise every Russian folktale into an equation-like formula, suggesting
that the Russian folktales were created according to rules with stringency and consistency as mathematical algorithms.

Muray’s persistent critique of video game narratives continues with her application of Propp’s framework to electronic narratives:

The story line in most gaming software can be described in terms of two or three morphemes (fight bad guy, solve puzzle, die). MUDs also rely on the repetition of a narrow set of plot actions, often limited to combat, negotiation and ceremonial events. Indeed, the lack of plot progression in MUDs is an advantage, since a limited repertoire of stereotyped activities makes for more easily sustained role-playing. Adventure and puzzle games usually provide only one route through various game levels, which results in a very linear story despite the high degree of participation activity. Games that offer choice-points leading to variant plot events are usually constructed with only shallow detours off the main spine of the plot. This is because even a story of less than a dozen branch points, with only two choices at each branching, would require hundreds of endings. Any branching story interesting enough to sustain our attention would therefore be too dense and confusing to write, since writers would have to work their way down each branch separately.

(Murray 1997, p. 197–198)

In this quote Murray concurs to a certain degree with narrativist critics who claim that video games’ narratives are essentially not part of their fundamental structure, and are basically only shallow hypertext networks of pre-scripted FMV sequences and in-game events. Creating a “truly interactive narrative” would require coherent alternative for each possible in-game option producing practically endless branches of the hypertext network. If hypothetically produced it would still mean that “playing” would equal “navigation”.

A truly interactive narrative would adapt the narrative to the interactor/reader and optionally generate new morphemes on its own. Murray mentions several experimental propositions for interactive narrative systems that create cohesive and adaptive digital narratives. Brenda Laurel’s playwright system would (it does not exist) shape the experience of the interactor according to classical Greek drama concepts. Another system, proposed by Marie-Laure Ryan, is a narratology theory-based story generation system able to create satisfying stories with symmetry and suspense. Basically, video game narrativists demand systems that constitute an interactive counterpart to the reader/interactor. These intricate and knowledgeable software systems understand the delicate aesthetical logic of intriguing narratives that engage with/according to the interactor. As yet, such systems exist primarily in the world of theoretical discussions, more than in the software paradigms of the game industry. The fundamental problem
with the construction of such story generating systems is the fragile and ephemeral nature of a “good narrative”. Even the construction of a barely sufficient narratives is highly challenging due to the vast amounts of contextual and implicit knowledge that goes into the process of writing, and later (and most importantly) reading a narrative. If the narrative is partially authored by the story generator system, part of the author’s understanding and perception of the world must also be understood by this system. For instance, the notion of “leaving a building” is something that involves extensive contextual knowledge: it is preferably done through stair and/or elevators, not windows – even if this is a plausible alternative from lower floors of certain buildings in case of particularly urgent situations, and given a free fall distance that is possible to survive. This type of constitutional contextual knowledge is part of our reflexive and subconscious mind, but is not the case in procedural software systems, such as video games.

One way of overcoming this challenge of contextual knowledge/intelligence is to reduce it to a subset of the interactive problem. For instance, instead of programming and teaching video game software human notions of “building”, “exit”, “stairs”, “windows” etc., it is much easier to simply prescript this action – an “autopilot” that follows defined path(s) out of the building. Murray also subscribes to this “complexity reducing” approach, that can simplify the process of generating a “good narrative”, adapting it to the procedural nature of the computer. One such system, Michael Lebowitz’ Universe, programs the logic of very specific story elements in terms of their own dramatic function. The system is given a goal to achieve with a set of formulaic dramatic functions. If the goal of a given story is to “escape murderers” then the function “leave town” or “hide somewhere” will fulﬁl this narrative goal. In this system the problem of generating a narrative has been reduced to the computer combinatory task of different formulaic and generic narrative modules. Murray acknowledges that story-generating systems are predominantly academic exercises, rarely interactive or participatory. The Universe system has fairly limited possibilities for participation, and should rather be seen as an impressive showcase of software technologies combined with literature theory. It also questions (academically) the position of the author: if a story generator can create interesting literature – what does that tell us about authorship in the future? Maybe the elevated position of the enlightened Author is slowly crumbling, as its roots in Renaissance, Enlightenment and Romanticism are being abolished. An engaging story is more than its underlying structures – readers are not satisﬁed participating in structures with generic and standardised narrative modules. A narrative is thus not the key to the entire experience – as shown by different film remakes, which reinterpret previously made ﬁlms usually by adhering quite rigidly to the narrative
structure of the original, but resulting in occasionally radically different films. For instance, the French director Luc Besson's (1990) iconic (female) action film *Nikita* (outside of France, sometimes bizarrely “Frenchified” to *La Femme Nikita*) was practically a different film when (disastrously) remade into an American film as *Point of No Return* (Badham 1993), despite its common narrative foundation. Murray proposes giving these issues of artistic direction and details to the author of interactive narratives:

The author must be able to specify all the elements of the abstract structure: the primitives of participation (how an interactor moves, acts, converses); the segmentation of the story into themes or morphemes (the kinds of encounters, challenges, etc.) that make up the building blocks of the story; and the rules for assembling the plot (when events happen and to whom). The author must also be able to control the particulars of the story: all the substitution elements (instance of character types, dangers, rewards, places, travel experience, etc.) and all the ways in which each instance will vary.

(Murray 1997, p. 204)

In essence, the author of interactive narratives is responsible for every component of the digital world within which the interactor participates.

The last element of “substitution elements” giving readers/interactors options is crucial to understanding Murray’s understanding of interactivity. In the early captivating days of fascination with “interactivity” it was presented as giving options to the viewers. Many TV shows, particularly talk-shows, claim to be “interactive” by virtue of simply providing some possibility of deciding on options, regardless of its limited significance in the overall communication process of the medium. In other cases users can vote by (sms) text messages, web or similar, and decide which recorded version of a film story’s ending will be the “winning” one – sometimes referred to as “interactive film”. Usually these films contain a conventional linear narrative with two endings at a dramatic point, at which the film is stopped and viewers are invited to vote for the ending. The problem with these “interactive” TV shows is their erroneous notion of interactivity. What part is interactive? – the voting system, the result, the television show in itself? These inventions could at best be called “mass-interactive components” of a traditional television medium. Perhaps in contrast with the “static” nature of television broadcasting, these elements add a level of viewer input – but traditional (telephone) call-in shows have existed in the television medium for decades, and prove that these formats are in many cases rhetorical arguments to demonstrate cosmetic innovation to established formats.
In Murray’s view these examples of television shows would barely be considered as interactive forms. These cases provide a (shallow) illusion of interactivity for the viewers, by providing options: to vote, comment or decide the ending of a film – creating a feeling of agency (potentially also interactivity). Options are highly limited and strictly controlled by the authors: the endings are usually two, the “public comments” are filtered for inappropriate content and relevance, voting is usually limited to three options ("Which Big Brother candidate is being thrown out tonight?"). The author of cyberspace environments should create a framework – a world – in which interactors can freely exist, and participate with a tangible feedback loop. However, the author decides over the particulars: e.g. what types of car are available, what the primitives are (i.e. how the car is driven), the segmentation of the story (i.e. what themes and morphemes are part of the environment).

Basically, Murray proposes that despite reader/interactor agency, author or reader does not dominate the video games medium. A traditionalist literary perspective emphasises the position of the author: video games do not change the author-reader relationship in any significant way since the author creates the game world. Another perspective is the much-hyped “revolutionist” view that “the author is dead” and that the reader is the new author – a wreader that emancipates the oppressed masses of readers hitherto communicatively enslaved by the hegemony of the tyrannical authors. This view is founded on the power of agency bestowed by the interactive dimension of this new medium. The reader chooses his/her own narrative path through the video games, making this process equivalent to authorship. Murray proposes a middle course between these opposing views: the medium becomes a collaboration between author and reader in completely new ways. The author creates structures (primitives, story segmentation, plot assembly rules) and particulars (substitution elements and aesthetic elements) of this participatory world.

The process of combining abstract structures and particulars, in a systematic fashion is a complex process. Murray proposes simplification by applying the Marvin Minsky’s notion of interconnected “frames”. Minsky’s frames contain “slots” or “terminals” in them – specific instances of which the frame is the abstract (ideal) concept. Furthermore, they contain information concerning the characteristics of that frame, and also constitute frames in themselves. Murray demonstrates how frames keep track of particulars, while maintaining links to the abstract (ideal) concept. For instance, the Sony Ericsson M600i mobile phone could be an instance of the abstract frame “mobile phone”, part of an even greater abstract frame called “electronic gadgets”. A particular example of the M600i mobile phone model might be an instance called “Miko’s mobile”. This particu-
lar frame contains information regarding Miko’s particular phone, and all the scratches, colour and specifics – but it also inherits the specifics of the mobile phone frame and electronic gadget frame. Minsky’s frame notion is closely related to so-called object-oriented programming, which organizes information, properties, characteristics, functions and relations of digital objects, into a hierarchical order where lower instances inherit the properties of the higher instances, while the lower are more specific than the higher. Murray believes frames notion can organize and implement interactive fiction. The author creates frames with morphemes, but also plot frames and their organization and combination, separating particulars from structures – the environment of a cowboy western could be exchanged for a Japanese Samurai village (as in Kurosawa’s Seven Samurai, 1954) or a torn World War II town (as in Spielberg’s Saving Private Ryan, 1998), since they could all contain the same morphemes and plot elements such as “a small number of male fighters protect their community from attackers”. Furthermore, if a frame stipulates that a western cowboy holds a revolver in his hand, then this can through its inheritance with the “weapon” class be exchanged for a Japanese katana or WWII rifle due to the hierarchical organization of the frames system.

When all structures and particulars have been created, there remains also a dimension of “moral physics”, as Murray calls them:

> Since plot is a function of causality, it is crucial to reinforce the sense that the interactor’s choices have led to the events of the story. It is common to talk about the physics of a simulated world […]. Stories have to have an equivalent “moral physics,” which indicates what consequences attach to action, who is rewarded, who is punished, how fair the world is. By moral physics I mean not only right and wrong but also what kinds of stories make sense in this world, how bad a loss characters are allowed to suffer, and what weight is attached to those losses.

(Murray 1997, p. 207)

After proposing artificial intelligence and contextual knowledge solutions to the challenge of story generating systems, Murray returns to this pivotal issue by disguising it as “moral physics”. Unfortunately no clues are provided as to how this might be implemented. In many ways the concept contains the very aspects of contextual knowledge that were previously discussed.

An illustrative example: a character in a story possesses a treasured keepsake with tremendous sentimental value (e.g. as the character Butch in Pulp Fiction, Tarantino 1994). How important is that keepsake to the character? Would he sacrifice it for a given sum of money, or would he jeopardise his life to retrieve this precious memento, as Butch famously
does in Pulp Fiction? The question becomes: given the possibility to play/enact Buth’s character in an imaginary Pulp Fiction video game, many interactors would probably leave the watch, because it is not worth losing one’s life over – how does that affect the narrative? Most likely it kills the emotional tension and the sense of the narrative. If the author’s aim is to provide a similar (Pulp Fiction) experience – how would the story generation system/playwright react to the decision not to return for the watch? Will the playwright magically guess and produce a memento that suits to the tastes and needs of the particular interactor? Is this possible without relying on complex intelligence and contextual knowledge? The author sets the themes, the player/interactor takes the decisions – why then does the simple story of a forgotten memento and its owner suddenly become too complex for the interactive narrative medium? An alternative is to persuade the interactor with the emotional value of the memento – by showing images, videos or texts that explain the background. This a popular solution where long introductory F.M.Vs set the narrative stage for the video game. However, only the interactor makes the decisions – he/she has still the option of throwing away the memento, or ignoring it totally! Murray’s notion of the interactive narrative and its emphasis on interactor agency – an interactive narrative stops being interactive if certain decisions are forced. In some cases these enforcements are more or less subtly disguised but these processes of concealment need to become infinitely more sophisticated and dynamic to effectively disguise situations of limited agency and option possibilities.

To answer these challenges Murray investigates various chatterbots, i.e. conversation programs that talk with users/interactors through a text terminal-based interface. The raison d’être has traditionally been as experiments within AI-research, computer studies, linguistics and literature studies. They provide venues for theoretical and practical elucidation of issues such as language, personality, psychology, intelligence and authorship. Recently, increased interest in this technology has been seen within more commercial applications as part of knowledge management systems, customer support systems or on the Web as Virtual Personal Assistant (vPA) or intelligent agents (IA) by replacing human sales or customer service representatives with software programs that attempt to understand natural human language questions. There is, in computer history terms, a long tradition of conversation programs in academic/experimental as well as in commercial applications. Murray’s focus is not the technical aspect, but the narrative dimension of creating interactive chatter characters. Some of Murray’s more prominent examples of successful chatterbots (except the previously discussed ELIZA) are from the field of psychology by psychoanalyst Kenneth Colby who has created several credible “chatterbot patients”
(paranoid young single man or neurotic woman), that on occasion manage to convince other (unknowing) psychoanalysts via text terminal interface communication that they might be real patients.

Aarseth, on the other hand, concludes that chatterbot-based fiction, such as Marc Blank’s (text) adventure game Deadline, is an autistic representation of fiction:

The characters you meet in Deadline appear to be living in their own private worlds. When questioned, they often repeat themselves without making sense, and you may stand next to them for hours without any sign that they know you are there. Intelligent conversation is exceedingly difficult and breaks down after at most a few exchanges.

(Aarseth 1997, p. 116)

By referring to a definition of autism from Encyclopaedia Britannica Aarseth concludes that the way characters act and talk in Deadline (and many other adventure games) can only be described as autistic, i.e. a neurobiological disorder that affects physical, social and language skills, often leading to meaningless and highly repetitive speech, and extremely limited social interaction capabilities. Murray, on the other hand, uses these cases of mental disorders to elucidate the importance of framing interactive characters. If psychoanalysts diagnose “chatterbot patients”, then the dialogue will be interpreted from a completely different angle compared to any other setting. Murray claims that given an appropriate framing and narrative contextualisation the authors of interactive narratives can skim over the task of creating fully intelligent chatterbots, and focus on creating as credible bespoke characters as possible, thus effectively disguising the procedural/binary logical underpinnings of its creation.

A new generation of “intelligent agents” that in place of behavioural models of human psychology have introduced goal-, plan- and script-based behaviour. This, according to Murray, suits the creation of digital narratives. Instead of attempting to create an invisible top-down AI-author who omnipresently controls every minute detail, the move towards intelligent agents can give rise to more distributed and autonomous storytelling where multi-faceted character behaviour can be created since each character dimension has its own sub-agent who cooperates with others. This gives rise to complex behaviour – given the same context, a character might respond differently depending on the “mood” of the different sub-agents. The negative aspect is the reliance on mathematical algorithms with definite answers and without ambiguity – the total opposite of real life characters and the fiction. Murray sees a bright future for the explo-
ration of the human mind, and the subsequent re-engineering of those insights into new type of technologies that can benefit the creation of interactive narratives:

The brain scientists have speculated that consciousness itself may be understandable as an emergent phenomenon, the results of numerous unintelligent neurons all lighting up at just the right moment. As we slowly learn to model the processes of human thought and demystify them, the brain is left staring into a dizzying mirror. With oddly celebratory bravado, the computer scientist Marvin Minsky is fond of proclaiming that human brains, in fact, human beings altogether, are simply “meat machines”.

(Murray 1997, p. 246)

When (shortly) the logic of the human “meat machines” is explored, we will be able to transfer it to interactive narrative technologies that will expand the horizons of storytelling and immersive experiences to unimaginable new levels. In other words Murray (fuzzily) hints at resemblances between the emergent behaviour of the human mind, and the emergent nature of interactive narrative technology.
LUDOLOGY VS. NARRATOLOGY

The previous chapters have analysed ludology and narratology. This chapter will confront and compare these two perspectives to elucidate their differences. The purpose is to summarise the perspectives but also prepare for the application of these insights on the game industry in the final Part III of this study.

In this comparison ludology and narratology will be treated as cohesive “perspectives”. A “theory” implies a more stringent and homogenous set of values and theoretical conclusions, while a “perspective” would imply something more general, a constellation where there are different theories and occasionally contradictory opinions. These “perspectives” are both young, as is the entire video game medium and the academic field that studies it. Aarseth and Murray published their seminal works in 1997. There are no populous legions of researchers representing each perspective, but instead one influential founder of respective perspective, and a limited set of like-minded theorists. Inevitably, the founders cannot be assigned the honour of having created the entire perspective, but have in many ways been the first to stringently and effectively formulate the opinions of a small community of researchers. The dichotomy of game vs. narrative, or simulation vs. representation, is not something “invented” by Aarseth and Murray, but something that is apparent to any analytical approach to video games. “Story-driven” vs. “play-driven” video games are categories that even the most casual gamer recognises. Consequently, this chapter and the comparison is about finding common denominators among a limited group of disparate theorists who are categorised as a “perspective” by other people – very often their opponents. These opponents, in their turn, often define their own positions in relation to their opponents (it is all Kriste-vian intertextuality anyhow). Nevertheless, much of the polemic concerns “what our opponents think about me/us”, rather than actually “what are we thinking” since in many cases there is not any “we” to speak of. Despite this, in the name of clarity, the arguments will be presented in terms of “camps”. “Ludology” is seen as the group of researchers focusing on video games as games, and not as narratives, dominated by Aarseth and his influ-
ential theories of cybertext/ergodic texts. “Narratology” (in the context of video games) was formulated by Janet Murray and her seminal theories of cyberspace narratives. There are several other theorists in both “camps”, but few are as decisive and prominent as these two “founders”.

Having made these introductory remarks, the four dimensions of both theoretical frameworks will be contrasted and compared. They constitute the fundamental dimensions of the video game medium, which appear in the analysis of the video game medium by most video game researchers in one form or another:

1. **Medium**
2. **Author**
3. **Reader**
4. **Interactivity**

**MEDIUM**

*Medium* refers to the perspective on the actual foundations of the entire video game phenomenon. In many regards this is what the entire ludology and narratology perspectives are all about – the attempt to describe the video game medium in the most comprehensive possible way. How do these theoretical perspectives perceive the “text” of video games (assuming it should be seen as such)? It becomes a question of cybertext vs. Holodeck.

*Cyborg Textual Rule Machine Structures*

Aarseth’s cybertext is an abbreviation of cyborg text machines. Video game software *is* a machine, not metaphorically but precisely as a material and mechanical device for producing and consuming verbal signs/texts. Software text systems are complex technology often interpreted in terms of infinite possibilities and visionary resources. Aarseth reduces this system to a core theory of scriptons, textons and traversal function, which constitutes the core of the ludological perspective, a focus on the mechanical organization of the medium – an essentially structuralist approach.

To another ludologist, Juul, the material, mechanical and systematic nature of video games is taken for granted. His aim is to create a (grand) theory of video games. With a interdisciplinary approach, from sources such as philosophy (Caillois 2001; Huizinga 1918; Kelley 1998; Suits 1978; Wittgenstein 1953), studies of game and play (Avedon & Sutton-Smith
1971), and more recent video game studies (Crawford 1982; Salen & Zimmerman 2003), he incrementally collects a set of rules to establish the foundation for “creating a basic theory of video games” (Juul 2006), which he condenses into six game features, which in short form are as follows:

A game is a rule-based system with a variable and quantifiable outcome, where different outcomes are assigned different values, the player exerts effort in order to influence the outcome, the player feels emotionally attached to the outcome, and the consequences of the activity are negotiable.

(Ibid., p. 36)

Juul’s investigation of game rules in terms of state machines, cellular automata and rule machines, without doubt indicates a perspective in line with a cybertextual machine approach. Obviously, Juul’s research differs considerably from Aarseth’s as it focuses on games (in all of their forms) and not on ergodic texts, which are after all firmly situated in the (electronic) literary theory field. Juul only focuses on classical (video) games and thus, in accordance with his own definitions, excludes many other forms of electronic textuality such as hypertext fiction, “open-ended games” (e.g. SimCity and the entire simulation video game genre) and, astonishingly enough, the whole category of MMOGs. These are not “classical games”, and deemed to be boundary cases, although his aim is to define the ultimate rule-based game machine that describes all known games. Juul’s theory takes for granted that video games should be perceived as games (and not narratives) and consequently continues Aarseth’s theoretical project (in his own interpretation) by focusing on the principles of the game machine, i.e. rules (according to him) – video games are machines that should be perceived as games.

Markku Eskelinen, occasionally referred to as “radical ludologist” due to his well-quoted statement that “If I throw a ball at you I don’t expect you to drop it and wait until it starts telling stories” (Eskelinen 2001), thus representing a strong anti-narrativistic perspective, perceives the video games medium in the following terms:

The old and new game components, their dynamic combination and distribution, the registers, the necessary manipulation of temporal, causal, spatial and functional relations and properties not to mention the rules and the goals and the lack of audience should suffice to set games and the gaming situation apart from narrative and drama, and to annihilate for good the discussion of games as stories, narratives or cinema. In this scenario stories are just uninteresting ornaments or gift-wrappings to games, and laying any emphasis on studying these kinds of marketing tools is just a waste of time and energy. It’s no wonder gaming mechanisms are suffering from slow or even lethargic
Again, what Eskelinen describes is a medium based on a system of *mechanisms, components* and *registers* that (ludologically evident) is *not* drama or narrative, but a game system. He elaborates that, according to narratology theorist Gerald Prince, a story relates to narratives/dramas in the same way that equipment relates to games. Elements are framed by situations and by certain activities, and games are a result of equipment being manipulated into a gaming situation/frame, similarly to how the elements of story are being recounted/enacted into the frame of narrative or drama. Consequently, games are principally a type of *equipment* that is being manipulated (together with rules and goals) into a gaming frame. Equipment is concisely defined by Eskelinen as “*pieces or tokens or whatever*” – in other words a physical type of equipment, which is very much in line with Aarseth’s mechanistic perspective on the medium of video games. This is no surprise as Eskelinen’s theoretical perspectives are heavily based on the writings of Aarseth and his cybertext theory.

Finally, another self-proclaimed ludologist, Gonzalo Frasca, whose research project is in many regards dedicated to interconnecting the simulational aspects of the video game medium with political activism, provides the following perspectives:

As a medium, videogames have the potential not only to represent reality, but also to model it through simulations. This powerful form of representation is based on rules that mimic the behavior of the simulated systems. As any constructed depiction of reality, simulations convey the bias of its designers. However, unlike narrative authors, simulation authors do not represent a particular event, but a set of potential events. Because of this, they have to think about their objects as systems and consider which are the laws that rule their behaviors. In a similar way, people who interpret simulations create a mental model of it by inferring the rules that govern it. By combining these two processes, as Sherry Turkle suggested, a new way of experiencing simulations could emerge. One where the goal of the player would be to analyze, contest and revise the model’s rules according to his personal ideas and beliefs.

(Frasca 2001b, p.113)

Once more, Frasca describes the typical ludological perspective as a *system* governed by laws and rules that yield a simulation. This definition of the video game medium as being *simulational*, and narrative media as being *representational* is quite powerful and influential as it captures the essence (as ludologist see it) of the principal differences between ludology and
narratology in video games studies. Evidently inspired by Baudrillardian philosophy it has been widely applied within the field of video games studies. In Frasca’s sense simulation affords (user) interaction:

Simulation can now be used to model systems that were before way too complex to deal with. We now have a powerful alternative to representation and narrative to explain and understand our world. And simulation does not necessarily have to be a tool for education, but also for art and entertainment (as it happens with videogames). Unlike narrative, simulation offers a first hand experience of a dynamic system (and if the term “dynamic system” doesn’t sound very exciting to you, you can replace it with “family”, “society”, “person” or whatever is that you would like to simulate). Simulation is a great tool for understanding rules and relationships among them. Certainly, representation has its own strengths and it would be very naïve to believe that simulation will replace it. The main problem is that representation is such a powerful ideology and is so ubiquitous in our culture that is hard to make the difference between it and simulation.

(Frasca 2001a)

Simulation becomes a new dynamic alternative to the ubiquitous culture of narrative representation. Simulation allows having a first hand experience of dynamic systems, which is a possibility that separates video games from traditional narrative representation.

It can be concluded that the ludological perspective on the video game medium is constituted by strong influences from systems theory where complex phenomena are analysed in terms of systems and their components. Depending on theorist the medium is a (software) system that is described as a cyborg textual system, with game components (scriptons, textons, traversal function), with game mechanics, governed by rules, with simulational properties, which separates it significantly from the representational media that are based on narratives.

Holodeck, VR, Cyberspace?

The narratological perspective on the video game medium is more vague. Murray calls it by several names: digital environments, cyberspace or Holodeck – most not yet constructed. Video games are currently the form closest to her vision, but severely lacks “rich levels of story satisfaction” that she expects from the cyberspace/Holodeck medium. This (yet) non-existent medium is heavily inspired by depictions of similar visions in science-fiction films and literature (particular Star Trek). Murray indicates developments in amusement park rides, IMAX cinema theatres, VR technology,
various artificially intelligent plot generating systems that will make the Holodeck medium vision reality.

Marie-Laure Ryan’s view on the VR/game medium is centred on immersion and interactivity. Above all it is a dynamic, three-dimensional (spatial), multisensory, transparent, simulation medium with a natural interaction language, that allows active and alternative embodiment inside a narrative world. Murray and Ryan share many theoretical elements. Murray’s four essential properties of digital environments are based on the dimensions of interactivity and immersion that yield the properties of procedural, participatory, spatial and encyclopaedic. A procedural environment with rule-generated behaviour allows the induction of new behaviour by users of the environment, giving rise to interactivity. This dimension is often neglected:

It is surprising how often we forget that the new digital medium is intrinsically procedural. Although we may talk of an information highway and of billboards in cyberspace, in fact the computer is not fundamentally a wire or a pathway but an engine. It was designed not to carry static information but to embody complex, contingent behaviors. To be a computer scientist is to think in terms of algorithms and heuristics, that is, to be constantly identifying the exact or general rules of behavior that describe any process, from running a payroll to flying an airplane.

(Murray 1997, p. 71–72)

The definition of computers as engines is a definition strikingly similar to Aarseth’s notion of cybertext – i.e. cyborg text machines. This indicates that there is more agreement between the polemicising perspectives than many would give credit for. Murray, though, seems to use the terms “computer” and “software” interchangeably. Murray does not specify the terms under which the medium is defined. Is the new medium defined by its functions? Or is it determined in terms of physical properties? Is the medium of video games defined in terms of physical and material properties (hardware), or is defined in terms of functions i.e. something that is the result of both hardware and software? If the medium is defined according to the latter – the medium can reside in both analogue and digital “encapsulations”. If in line with the previous it must be noted that many “new media” properties do exist in other forms/media, e.g. in analog environments. Reading a (codex) novel on an “electronic screen” is in terms of narrative and textuality no different to reading the same novel on paper or any other physical medium (marble, papyrus etc).

Murray’s four properties belong to digital environments, implying a technological line of reasoning since in this instance “digital” is used as
substitute for computerised, much in the same way as electronic is frequently used. It becomes a categorical component, which should be contrasted with Aarseth’s and Juul’s focus on transmedial phenomena – ergodic texts or “analogue” games that have existed for thousands for years. On the other hand, the four properties are rather functionally oriented and dimensions of the “digital” medium. Consequently, Murray’s notion of “digital environments” is a general term that might be hard to translate into a material and technological level of analysis. Where are the medium and its boundaries located? Due to the science-fictional nature of the Holodeck medium – it should be considered more as a metaphorical vision than an actual object of analysis.

There are several similarities between ludology and narratology as regards their views on the medium, as the following quote illustrates:

The more we see life in terms of systems, the more we need a system-modeling medium to represent it – and the less we can dismiss such organized rules systems as mere games.

(Murray 1997, p. 93)

Furthermore, after defining the procedural property Murray subsequently states that “the computer is not fundamentally a wire or a pathway but an engine” (Murray 1997, p. 71-72), it becomes evident that the system theoretical perspective on the video game medium is not fully alien to the narratological perspective.

It can thus be concluded that both perspectives acknowledge a system theoretical dimension of the video game medium. Aarseth/ludology incorporate this aspect into the core of its theoretical framework, viewing the game medium as a material and mechanical machine/engine created by the author and involved by the reader. Ludology and narratology share views, but ludology is definitely more material and closer empirically to software mechanics, while narratology inevitably tends to focus on the visionary functionality of yet to be realised technologies.

AUTHOR

The position of the author is, to say the least, challenged as regards the video game medium. The author has been proclaimed dead, others maintain its survival and even prosperity. The reasons behind these are buried in the elusive “interactivity” notion, or non-linearity. A medium that allows the reader to interact, thus becoming in Murray’s view an “interactor”, has given the reader a set of revolutionary new tools that displaces the classical
communication model and redefines the positions of the entities in the
author-reader dichotomy.

Rise and Fall of the Author

Interactivity allows the reader to influence media content in a significantly
more active way than was previously possible for technological and also
cultural reasons. Culturally, media has been linear, due to the inevitable
connection between media and cultural authority. From the cuneiform clay
tables of ancient civilisations to the present day media regulation authori-
ties, the centralisation of the author-function and the regulation of the
reader-function have always been in the interest of the elites, as elaborated
by entire segments of cultural industries studies with political economy
focus. Simply put, authorship is powerful and relinquishing that power
has required several technological and cultural revolutions throughout the
ages, such as radically improved increased literacy, Gutenberg’s movable
type printing, the World Wide Web, constitutionally protected press free-
dom, to mention a few.

Seemingly, for the first time in history the video game medium pro-
vides equality between reader and author. Readers are given a new type
of agency, as elaborated by Murray’s three elemental characteristics of the
aesthetics (immersion, agency and transformation). Previous media tech-
nologies afforded interpretational agency and limited/non-existent influ-
ence over the linearity of its presentation, but now video games provide
tools that allow and force users to take an active part in the development
of the story. Many video game theorists concur with Barthes’ conspicuous
proclamation of the “death of the author” since the post-modern reader
reinterprets, redefines and explores the text in a way which renders the role
of the author irrelevant.

Where does all this leave the author? Inevitably its position in the video
game medium is radically different from other traditional media forms.
Video games clearly break with this traditional type of communication,
where there is no linear temporality of the author’s text and each reader
has his/her own temporality. This, though, is not the first type of medium
to achieve this (c.f. any non-electronic ergodic text). However, the video
game medium achieves this new “non-linearity” in a significantly stronger
way than previous attempts due to the new aesthetical dimensions enabled
by information technology. The dramatically improved speed at which
contemporary video game hardware can produce spaces, objects and mo-
tion exceeds any previous possibilities of non-electronic ergodic texts – I
Ching can produce more than 4,000 different texts, but due to its non-
Aarseth argues that the traditional notion of the author should be abandoned in the context of ergodic texts/video games – the position of the author can assume a multitude of various control situations. Aarseth op-
poses the presumed weakness/death of author control in the game medium, since this is a static and generalising view. Author control depends on a plethora of variables and should therefore better be decided on a case-by-case basis. Furthermore, Aarseth considers the opposite — i.e. a “strong” authorship — also as illogical. The traditional concept of author in cybertexts should be rejected, as the computer never will be as good as a traditional author. Traditional notions of authorship, aesthetics and literary quality should be disposed of because the cybertext medium has its own aesthetics and its object is not to imitate and emulate traditional aesthetic principles. The author in his perspective becomes:

[...] only a label for the positions in a communication system in which the physical text is assembled without any regard for the social or cognitive forces active in the process.

(Aarseth 1997, p. 134)

Aarseth defines three main positions in the human-machine collaboration i.e. cyborg-author types;

1. Preprocessing
2. Coprocessing
3. Postprocessing

Preprocessing is when the machine is programmed, configured, and loaded by the human. Coprocessing involves the human and the machine producing text in tandem. Finally, postprocessing is where the human selects some of the machine's text productions and rejects others. These positions in the human-machine collaboration often operate together, either 1 and 2, 1 and 3, or 1, 2 and 3, or 1 by itself, although the human operator need not be the same in different positions. Aarseth does not perform a broad survey to illustrate the various dynamics of these three positions, but he concludes that preprocessing is always present and that coprocessing and postprocessing are almost mutually exclusive.

Aarseth acknowledges that this cyborg author model is simple, and that it does not even attempt to describe the huge possibilities that can be programmed during the preprocessing stage, nor the strategies that can be employed when coprocessing together with a machine. By positing the author as someone who a) a priori creates the text machine, b) cocreates actively with the text machine, and finally c) a posteriori produces by selecting the text machine's output, the author becomes an obvious and fixed position in the communication process. The “author” is not someone who merely creates the machine, it is also the person who operates and works
with the machine. Even though “author of a video game” is often considered to be the game designer/studio there are other forms of “interactive fiction” generated by text machines.

Aarseth’s perspectives on “interactive authorship” are primarily to deconstruct and invalidate the search for a “computer author” that will automate, replace and exceed the human author. Aarseth stresses that ergodic/cybertexts should not be judged aesthetically from the perspective of traditional media, but on their own and new terms. It is not the role of new media to remediate and imitate older (narrative) forms – their role is to establish aesthetic principles and values of their own that develop the communicative and artistic potential of the medium. For instance, film was used initially as a type of novel and technological funfair entertainment (one-minute long “phantom rides” of workers leaving factories, or trains leaving stations). These films were based on the aesthetic conventions of the theatre and extended well into the commercial film era of silent movies. It was when inherently film-based concepts of continuity, point of view, cross-cutting, reverse-angle, flash-backs among many other concepts began to establish the medium as a separate form of artistic expression. It might indeed be a case of Bolter and Grusin’s remediation, but the video game medium needs to establish its own separate and distinctive expression form instead of being a vehicle for traditional media remediation and imitation. To illustrate this point Aarseth criticises Laurel’s notion of playwright and the author perspective that it represents. Laurel’s playwright promotes the idea of positioning the video game (machine) as the author (in a traditional narrativist sense). Laurel’s vision, the playwright (“interactive fantasy system”) would generate a unique and bespoke “interactive drama” adapted to choices of the player. Based on classical dramaturgy concepts, it envisions a playwriting expert system enabling (first-person) participation by the user in the development of a story into well-formed Aristotelian “wholes”.

Aarseth criticises the arbitrariness and inconsequence of Laurel’s theories from a literary theory point of view. If the playwright is supposed to organize the interactive drama, and most importantly involving the user in this process, of what use is then the user? Does not the playwright become an autonomous story-generator without the explicit need of an external observer/user? This is after all an instance of interactive drama, where the user enacts and participates in the unfolding of the story. If there are larger (linear) structures that govern the creation of narrative wholes, where does this leave the agency and freedom of the user? The narratological perspective has not given up the hope of the traditional author:
As Janet Murray and others argue, the adventure game type of computer textuality is hardly one where the “author” has given up control. Rather, the user can be manipulated in new and powerful ways. In a narrated, linear expression text, the user/reader/receiver’s response and interpretation are beyond the control of the author, who can only hope that the text will be read from beginning to end. […] in a hypertext, the author can make sure that the user must go through a particular sequence to access a certain part; in an adventure game, the author can even make the user perform detailed and distasteful symbolic actions (e.g. “kill the old pawnbroker lady with the axe”) in order to continue the game. As with most games, the rules are well beyond the player’s control, and to suggest that the user is able to determine the shape of such a text is the same as to confuse the influence of a city’s tourist guide with that of a city planner.

(Aarseth 1997, p. 138–139)

The traditional position of the author is defended by narratologists as the notion of author is paramount in narrative/literary studies. Laurel’s (and other narratologists’) error lies in the attempt to theoretically transfer the author from the human to a location within the text (machine). Despite this technologically advanced proposition it subscribes to a traditional (and static) position of the author.

The possibility of creating an automated surrogate author – a simulacrum of an author – is probably impossible. Not only is it impossible due to the immense technological challenges, but also for literary reasons: what is the purpose of an automated author when its user becomes both directing dramatic agent and its audience? How is the automated author supposed to combine the individual agency of the user, and the dramatic structures of Aristotelian wholes that govern its logic? If the user is given agency, but is forced or manipulated into certain directions, those will soon become detested and the “active creation of belief” will diminish. One could even claim, based on Caillois’ theories, that a game/play ceases to exist if it is involuntary. To remain unnoticed these mechanisms must somehow predict and outsmart the user and his/her dramatic preferences. If writers, film/stage directors and others are immensely challenged artistically (with varying degrees of success) to perform this predictive process, how is then a binary-logic computer ever going to be able to this better than a human?

Aarseth questions the entire perspective of applying traditional literary theoretical frameworks to the phenomenon of dynamic texts/cybertexts/video games. Why debate the various possibilities of the “interactive authorship”, “digital Aristotelian wholes”, and numerous other narrative/drama related queries, when the most pivotal dimensions can be found in the organization of its internal structures, mechanisms, rules and play? Why spend time imagining media forms that are yet to be constructed, or
based on previous media principles, when a truly new medium is available? Aarseth, Juul, Frasca, Eskelinen and ludology as whole conclude that video games research should be based on a investigation of its internal mecha-
nisms and not by imitating other previous narrative-based media.

**Procedural Authorship**

Murray claims that interactive narrative authorship does not necessarily have to be radically different from the story techniques of previous narrative media forms. In her perspective narratives share similarities and story structures regardless of cultural context, age or technology. Based on Lord’s oral bard authorship theories, and Propp’s narrative morphology, she constructs a highly structuralist approach to authorship in the cyber-

space medium, primarily based on *primitives*, grouped into *themes*, used to construct *plots*, which as shown by Propp’s analysis of the Russian folktales can be used to generate hundreds of (fairly) independent stories.

Murray criticises the current state of the video game medium due to its poorly developed narrative structures, with two or three morphemes/narrative functions. She expects development of more nuanced and sophisticated palettes of morphemes. She aims to transfer the position of the traditional human author into the medium/text machine. The machine author is an automated extension of the “real” human author who constructed the story machine. The notion of the author remains largely unchanged – still the master of the narrative. Murray acknowledges the technologi-
cal challenges associated with creating an automated author, and proposes strategies for reducing the complexity of generating automated narratives. These strategies simplify associative structures by mere (human) organization and labelling. By creating and assigning “substitution elements” in larger object-oriented frameworks (inspired by Minsky’s “interconnected frames”) and then combining them with primitives/themes/plots, a separation of the abstract structures and the particulars can be achieved. The remaining puzzle-piece is a “moral physics” engine that simulates and organizes the moral dimension of automated narratives. It creates a fundamental sense of right and wrong, but also involves a sense of *what kinds of stories make sense in this world*. This engine will contribute to the creation of an effect of causality, which in Murray’s view gives rise to a plot.

To reduce the complexity of the “moral physics”, clues can be found in the artificially intelligent world of conversation programs/chatterbots. By creating a framework of conversation subjects and narrative contextu-

atisation the authors of interactive narratives can omit the need for full-
fledged artificially intelligent chatterbots. In the same way as “intercon-
connected frames” for creative associative structures, Murray believes that the complexity of conversation/narrative agents can be reduced with framing the conversation/narrative in a context of certain elements/themes/logic(s) that are well-known to the reader/interactor. In this way the need for a comprehensive (human-like) intelligence and cognizance is significantly reduced. A multitude of these intelligent agents, each representing a dimension, can cooperate and produce aggregate results that will be multifaceted and complex in their global behaviour.

To summarise, the difference in perspectives on the author: ludologists (primarily Aarseth) question the entire notion of the traditional author in this context, while narratology attempts to transfer the position from the human to the machine. The reasons for the ludological criticism of the author is primarily the plethora of different and dynamic positions that the author (inside, or outside of the machine) can assume – it is impossible to generalise one abstract position. Secondly, ludologists oppose the author due to its theoretical affiliations and affinity to narratology and its interpretations of the video game as a fundamentally narrative phenomenon.

The relevance of the author, from a ludological perspective, is similar to analysing the position of the inventor (“author”) of tennis, when interpreting, for instance, the Wimbledon finals. Rather than claiming the “death of the author”, ludologist stress that the “author is so different that maybe it is time for different concepts”.

**READER**

Aarseth questions the relevance of the notion of reader in the case of cybertexts. If the reader of Tetris drops a geometrical figure – where and what is the reader? Is the reader the block, or is he or she part of the medium, or perhaps even constitutes the medium itself? Aarseth considers the analysis of the reader problematic due to the strongly politicised and deeply rooted associations with this concept. The divide between producer/author and consumer/reader is, according to Aarseth, one of the most profoundly ideological divides in the social reality of western society. Theorists who propose the elevation of the reader to the level of author are transforming this into an act of emancipation and empowerment against the authoritarian and oppressive authors. The entire stratification of cultural production, low/high culture, and the culture industrial theories of Adorno and Horkheimer, is based on a strict and political separation between author and reader.

The cybertext theory does not perceive the medium as emancipatory or oppressive – it can be both and any number of positions in-between. The
question of (political) emancipation is not one of paper vs. electronic, non-linear vs. linear, or interactive vs. non-interactive texts, but rather revolves around the technological possibility to add and modify the text of the medium. Many theorists who subscribe to the “death of the author” automatically assume that the vacancy is automatically filled by the reader, but it is a more complex position. Emancipation is more related to media access than to the actual technological/material properties of the medium. Examples of moderated Internet user groups (or the more contemporary example of (we)blogs) illustrate that reader empowerment is significantly more complex. Omitting aspects such as the “global digital divide” and other socio-economical dimensions, these examples show that even though the Internet/web allows everyone to participate on equal terms, thus theoretically empowering the reader, many blogs are moderated, filtered and edited. Similarly, a blog can be brought down or interfered with by spammers and so-called “flamers”. On both sides of the author/reader divide there are forms of control. The often perceived subordinate position of readership can, contrary to emancipatory belief, also be used to actually increase power, e.g. in the case of wiretapping communication (e.g. the controversial Swedish IPRED law) or surveillance of letters, where reading is used as a tool of increased control.

Viewed from this perspective the often “reader-emancipated” medium of hypertext does not imply an evident democratisation of the medium, as it depends on issues of a) socio-economical access to the medium, and b) the (mechanical) internal structures of the hypertext that regulate access to its use. Most hypertexts allow limited reader-control since the dominant control mechanism (i.e. hypertext network) is laid down by the hypertext author. Users are sometimes allowed to add text elements, but truly equal control is where the reader creates his or her own hypertext structures. Even in cases where this is possible, e.g. the well-known collaborative online encyclopaedia Wikipedia, socio-economic and cultural dimensions limit full democratic control of the (hypertext) medium – some prominent Wikipedia authors have massive influence. This is indeed in line with the meritocratic ideals of the Wikipedia project, but further illustrates that hypertexts do not necessarily involve the “death of the author”, democratisation of the medium and the rise of the w/reader.

Touted as “the social web”, participatory, “consumer created media”, and dialogue-driven (due to comments/hyperlinks to other blogs/content) blogging has been hailed as a revolution that has transformed the communication structures of the web/Internet and emancipated readers/consumers. Creating a blog might be practically free (and even lucrative if successfully coupled with revenue-generating advertising) and is not much more difficult than sending an email, but restrictions might severely impede this
type of “emancipatory” media. Most nations actively monitor what is being published in the so-called blogosphere, and many nations (including Sweden as illustrated by the notorious case of a ministerially directed closure of a site with publications of the so-called “Mohammad cartoons” (TT 2007) in 2007) actively censure, limit and block blogs and even imprison their authors. There are also more prosaic difficulties such as making your blog voice heard. With millions of blogs created and updated daily how does one lonely blog make a difference? There are of course cases of rags-to-riches global blogs created by one reader/writer, but these are nonetheless engulfed by the imposing number of blogs created by established private/state-owned media conglomerates that have incomparably greater media/economic resources to popularise their content. Consequently, associating communicational and societal liberation with specific media technology are most likely attempts by some theorists to interconnect technology with influential (political) theories of liberation and/or deconstruction/reinterpretation of power structures, rather than a stringent analysis of the technology/medium.

Four Levels of User Positions

Aarseth challenges the notion of the reader, which is fully in line with the ludological objection to narratological explanation models. A more neutral concept of “user” is proposed. It lacks traditional connotations with texts/narratives, and also suggests participation as well as dependency. Four levels of user positions are identified, illustrated with the authoring system HyperCard – one of the pioneering hypermedia development systems available for the Mac. Requiring relatively limited technological prowess it allowed creating applications or frameworks for creating other (hypermedia) applications. It was used for a number of successful commercial applications/video games, such as the original version of the much-analysed Myst video game. The owner, Apple Inc., stopped selling the HyperCard system in 2007, and a more contemporary example might be the MediaWiki system, which is inspired by the HyperCard system (Wikipedia 2008a), and used by Wikipedia and thousands of other Wiki-based Internet projects.

A Hypercard/MediaWiki system is written in a software programming language such as C (or similar), compiled with a compiler into an executable file that constitutes the software. The programme itself allows other applications/frameworks to be created from a simple hypertext language syntax. The MediaWiki-based Wikipedia system was created with an intricate system of multimedia capabilities, but also content management,
verification hierarchies, access control, user profiles, language support and many other possibilities that make it particularly suitable for the creation of an online encyclopaedia (and not e.g. a software project wiki). These properties were modified versions of MediaWiki and developed by the founders (“authors”) of the Wikipedia project, but incrementally developed and modified by the Wikipedia community, which can collaboratively create, link and modify the millions of Wikipedia entries, which are accessed by millions of Wikipedia readers.

There are four user levels, but also four developer levels that relate to this hierarchy. The four levels of usership are interconnected with the possibility to develop, i.e. contribute on different levels, to the (software) text machine. On the first user level the ability consists of reading high-level programming language code, but also writing, modifying and understanding the structure of the software (e.g. the MediaWiki system). Applying this software, by Wikipedia administrators, constitutes the next (second) user level (third developer level), e.g. Myst or the Wikipedia project/application. The third user level and fourth (final) developer level are the editors/authors of Wikipedia articles inside the Wikipedia application/project. On the fourth level the Wikipedia user can search, read, and explore “non-linearly” the hypertext network of the millions of encyclopaedic documents (of various quality). This type of user constitutes by far the largest group since Wikipedia is ranked as the ninth most popular web destination in the world receiving 7 billion visits per month or 683 million visitors annually (Wikipedia 2008b). The third user level is also quite popular with more than 400,000 editors of Wikipedia articles (Wikimedia 2008). The second level, consisting of the creators and developers of the Wikipedia project (from the MediaWiki platform) is quite limited with only 3,880 administrators (Wikimedia 2008). Infinitesimal by comparison, the first level of usership has only 143 active software developers working on the MediaWiki platform (Ohloh 2008).

Aarseth’s four user levels bear a striking resemblances to the seventh variable of his typology of textual communication, the user function of cybertexts. This property defines additional functions performed by the user besides the fundamental interpretive function (making decisions meaning of the cybertext). Exploratory function is when readers explore paths in the text; with configurative function scriptons are chosen or created by the reader, and finally the textonic function allows the reader to (permanently) add textons or traversal functions to the (cyber)text. It is based on a similar logic of cybertextual components, and in particular the ability of the reader/user to influence the cybertext’s internal mechanisms. The fourth user level involves “using” passively an application where users access and explore Wikipedia texts/articles. To participate more, the user has to be-
come a Wikipedia editor – a user who knows the commands and syntax of certain (superficial) levels of the internal text machine structures, and can add new scriptons and textons to the Wikipedia (machine). On the lowest level new traversal functions can be added by administrators and/or the developers of the MediaWiki platform.

Aarseth’s four user levels and the user function variable together represent a function-oriented perspective on the reader position. The most decisive aspect is the possibility for the reader/user to add (text) elements into a dynamic text machine. It omits the uncritical dimensions of “interactivity” and focuses on what is being added by the user/reader, and the consequential effects. The reader, traditionally seen as a passive/interpretive recipient of an author’s text, is clearly rejected, and replaced by the more neutral position of “user”, signalising a more active and operational approach. This position is more neutral as regards the theoretical frameworks that place the reader in a (inferior) position in relation to the author, and attempt to establish the interactive reader as a politically emancipated reader, while still maintaining the properties and the qualities of the traditional reader. Aarseth’s cybertext user can be both less and more powerful than the traditional reader – it is a question of the cybertextual design.

The Interactor

The narratological perspective on the video game reader is less focused as it concentrates primarily on the media experience. Murray discusses it in terms of “aesthetics of the medium” where specific dimension influence the way the reader perceives the medium, probably indicating indirectly that the position is not considered radically different from previous narrative media forms. The reader is called an interactor (by both Murray and Ryan), who plays a creative role within an authored environment – the interactor does not have authorship of the environment itself as it is limited by the possibilities/rules established by the procedural properties. These author-created limitations create a “world of narrative possibilities”, which establishes contexts and sets of tools used by the interactor to improvise a unique performance. The interactor becomes the author of one particular improvised performance, but clearly separated from the authorship of the digital environment as such.

Murray defines the reader/audience as increasingly active – participating in an interactive medium, but also a self-reflective post-modern awareness of the storytelling itself and the “what if” possibilities of a narrative generation. The reader/audience wants to join the author, as illustrated by fan fiction, LARPs and narrative works (literature and film) where narratives
are treated as registers of potential storytelling, rather than a predefined, static and passive entity. The reader is becoming technologically capable of questioning/participating in the narratives, but also culturally aware. The cyberspace/Holodeck/“digital environments” medium is capable of developing this techno-cultural potential to the fullest. This computer-based medium is participatory, performing rule-based actions, which are also induced by interactor actions, which yields the “primary representational property” of cyberspace, which is to produce “codified rendering of responsive behaviours”. Murray does not elaborate extensively how and to what extent the reader becomes participative in the cyberspace medium. The primarily focus is on the aesthetic dimensions of the medium (immersion, agency and transformation), which are analysed from a strictly reader/interactor point of view. Immersion is when the interactor/reader enters a new world of dominating sensational experiences that stimulate participation and learning. Immersion as a participatory active creation of belief (instead of suspended disbelief) becomes a space between “the external real” and the interactor’s subjective internal projections. A way to structure the interactor participation is as mask, or from a collective interactor perspective, through (drama) roles. Participation is meaningless without agency i.e. “the satisfying power to take meaningful action and see the results of our decisions and choices”. Cyberspace provides hitherto unavailable levels of narrative agency.

Murray laments over the current underdeveloped state of narrative agency in digital media, dominated by “games”, a form that should be adapted to incorporate more narrative logic. Murray posits games as something opposed to narratives, and even something that might inhibit the development of interactive narratives. Murray presents several fundamental forms of narrative agency formats based on navigation and exploration of spaces – physical spaces (in the digital environment) or story spaces. Spatiality and simulational narratives (among many other things) are assumed by Ryan to constitute the properties of the VR/Holodeck medium.

Both Murray and others narrativists (Jenkins 2003) assumes that space frames narrative agency into fragmented multiform narratives. The narrative is “mapped” onto space, and the narrative reader/interactor agency consists of choosing his/her own path through this narrative space. Analogies to labyrinths/rhizomes are naturally close at hand. Similarly, monomythical journey stories (with origins in the Russian formalist school) also become a rewarding perspective. The transformational aesthetical dimension enables implementation of participatory environment with narrative agency supporting multiform/kaleidoscopic/interactive narratives. One way to organize this is through morphing story environments where the reader/interactor becomes a bricoleur that assembles (interactive) narra-
tives out of formulaic story environments. The transformational potential is also somehow reflected within the reader/interactor, which can achieve personal transformation through the immersive and participatory nature of the medium.

The narratological and Murray’s approach to the reader position differs significantly from the ludological. Narratology emphasises the aesthetical dimensions of the medium, which is deeply rooted in the tradition of literature and cinema, with dominant concepts such as author, text, sequence and (reader) experiences. While the ludological perspective attempts to define a new theoretical framework, the narratological is clearly a modification of an established transmedial theory with its own set of aesthetic values and priorities. Narratology prefers to analyse the participation mechanisms of the interactor/reader as a mask (drama) performance or a role rather than discuss the more material explanations as provided by the ludological perspective. The fact that certain “digital environments” can give varying (or even more) power to author or reader is not elaborated or taken into account. The focus is on a specific (yet non-existent) digital environment based on interactive narratives that (always?) provide increased reader/interactor agency (compared to previous narrative media). Above all (albeit not particularly surprisingly) the notion of narrative is the central core concept in the narratological analysis of the video game medium. The reader/interactor is defined in terms relating to the narrative, not in relation to text machine, author or other concepts.

**INTERACTIVITY**

The final comparison dimension is the concept of interactivity. Extensively analysed earlier this term signifies a plethora of meanings in a wide range of fields and with no apparent cohesive core meaning. Depending on field and era the term signifies various associations with user/reader freedom, user/reader adaptive media, artificial intelligence, user/reader participation, user-system equality and others. In many (most?) situations the concept is used as a synonym for “information technology”, “electronic”, “digital” or any other subject (industry, process, presentation, drama, teaching etc). Perhaps fuzzy and hollow in its meaning due to its prolific use, the concept nonetheless carries a useful symbolic and directional meaning for new media/video games. With a rapid technological development the user-computer inter/action has grown increasingly flexible transforming it into a participative and procedural medium. The pivotal question becomes: what should this increasingly sophisticated participatory and procedural dimension be called? Interaction has become the de facto concept to describe
this dimension. *Inter* and *action* combined, signifying a bidirectional action between two cooperating entities – user and computer. The term is used by basically all video games researcher. Concept clarification is not necessary in all cases, but the extensive use becomes troublesome when used as an explanatory and analytical concept. The notion of interactivity cuts to the core of the game media interpretation, and is an essential element of a comprehensive description of the video game medium and its “primary representational property” (to use Murray’s term).

Devoid Concept

Aarseth’s analysis of interactivity is the most radical: claims of “*interactive fiction is fiction of interactivity*” – the term should not be used at all. The use of the concept is merely a synonym for computerised, and represents an uncritical adoption of commercial/industrial rhetoric by society, mainstream media and the research community. It should be noted that even if the term is dismissed it is still used in Aarseth’s texts as a label for the participatory recursive process of digital/ergodic media. It is not an analytical concept, but occasionally employed as a term for describing the “unique” dimension of dynamic texts. Aarseth’s primary critique of can be summarised as opposing the narrow focus on the participation aspect. Without taking into account the possibility for the reader/user to add discursive elements to the ergodic/dynamic/interactive text, and solely focusing on the participative dimension, produces a contradictory analysis that lacks stringency. If interactive is equalled to participative then the video game medium from a reader/user perspective is not any different to being a member of an orchestra or the inhabitant of a building. The interactivity of video games (albeit not all) allows adding new elements that modify the core of its dynamics – it is the requisite of most video games. The user is expected to explore and make decisions that permanently affect the dynamics of the video game. If this possibility is analytically omitted then user reflectivity is ignored – the “what if” question (in Murray’s terms).

Aarseth replaces interactivity with a set of theoretical concepts that define *what* is being defined, and to what *extent* they are defined. It constitutes a function-oriented perspective that assumes that a wide range of different mechanisms for participation are available, and refrains from defining generalising statements. The interactive function of a static hypertext is obviously different from Second Life (previously analysed) where users can add extensive elements. Trying to define one form of general interactivity process based on such different variation is challenging, and according to Aarseth not rewarding. It is more important to define the
author, text and reader and the various relationships that these entities can assume. His cybertext perspective attempts to define a broader perspective on textual communication, and claims that it can describe all text according to their mode of traversal. With the three core concepts of texton, scripton and traversal mode he lays the foundation for a theory and typology that defines these new relationships. The typology and its seven variables define a new media landscape where there are no inherent areas of the user, author or text. These depend on the mechanism inside the textual machine that produce the ergodic text.

**Pivotal concept**

The narratological perspective extensively embraces the notion of interactivity. Interactive fiction/narrative are comprehensively applied and analysed as concepts. Murray posits the interactive dimension of cyberspace/Holodeck as consisting of procedural and participatory properties of digital environments. Murray is also careful to separate the notion of interactivity from activity and agency, which is often confusingly used synonymously. The mere fact that certain types of games require significant activity from the interactor does not make them interactive. Agency is required for an active and participatory environment to become truly interactive. Murray does not specify what type of agency behaviour and what the principles of participation are, but depicts the cyberspace medium in terms of an object-oriented architecture, where the interactor involves with software objects that together with Proppian “functions” generate a multiform plot space through which users navigate.

Marie-Laure Ryan’s analysis is also favourable to the concept of interactivity, as she defines it as one of the fundamental dimension of Virtual Reality (or electronic medium). Concepts of interactive drama/movies are embraced and analysed. Her analysis combines many elements from both ludology and narratology. Nonetheless, certain decisive dimensions of her theories clearly side with the narratological perspective. According to Ryan interactivity works on two levels: one constituted by the medium (or by technological support) and the other intrinsic to the medium itself. For instance, in Ryan’s view “Internet” provides limited interactivity as users can choose whatever they want to access, but many of the documents are straight linear texts. Ryan’s perspective on what constitutes a “medium” is somewhat unclear, as “Internet” is a collection of dozens of media forms. Ryan provides two types of interactivity: weak and strong, or selective and productive:
Types of interactivity can also be distinguished on the basis of the freedom granted to the user and the degree of intentionality of his interventions. The bottom of the scale is occupied by what one may call, with Söke Dinkla, a “reactive” interaction, which does not involve any kind of deliberate action on the part of the appreciator. [...] One step higher on the intentional scale is a random selection among many alternatives. When the user takes action deliberately but cannot foresee the consequence of his actions, the purpose of interactivity is to keep the textual machine running so that the text may unfold its potential and actualized its virtuality. [...] In the fullest type of interactivity, finally, the users involvement is a productive action that leaves a durable mark on the textual work, either by adding objects to its landscape or by writing its history.

(Ryan 2001, p. 205)

Selective interactivity is a weak, fairly passive, static and “non-productive” form of interactivity. The participation of the reader/user is limited to actions of selection and is thus “non-productive”. The fullest form, productive interactivity, gives the user the possibility of productive action which leaves a “durable mark” on the text, by adding objects or by “writing its history”. Ryan posits Aarseth’s “ergodic texts” as comparable to “interactive texts” (“that makes use of reader input”) and “electronic texts” (created by electronic support) which is definitely not in line with Aarseth’s opinions. Ergodic texts use a “built-in reading protocol involving a feedback loop that enables the text to modify itself, so that reader will encounter different sequences of signs during different reading sessions”. Together, these three types (interactive, electronic and ergodic) generate nine possible types of texts, which are produced by a classical set of Venn diagrams, constituting Ryan’s text typology. Within the interactive circle, there are also subsections of selective and productive interactivity.

Ryan does not specify what the analytical purpose is of separating texts into “electronic” or “non-electronic” – codex remains codex regardless of electronic support. This criterion is quite static although interactivity is evidently a process preferably analysed in terms of dynamic dimensions. Even in Ryan’s typology, the case of “interactive, nonergodic, nonelectronic texts” are exemplified by “exchange between parent and child during storytelling” (selective interactivity) and “conversation” (productive interactivity), which suggests a dynamic process and activity-oriented approach since interactivity is possible without the aid of electronics. Ryan incorporates elements of Aarseth’s theoretical framework. Like Aarseth Ryan defines certain aspects of “interactivity” in terms of possibilities for the user/interactor to add and modify existing structures within the text, which constitutes the difference between Ryan’s weak/selective and strong/productive interactivity, which can be compared to Aarseth’s four user levels, or the
user function variable in his textual communication typology.

Aarseth’s interpretive function is assumed by Ryan to only exist in cases of “nonergodic, nonelectronic, noninteractive texts” (paper codex). They are also available in Ryan’s typology (“electronic, noninteractive, nonergodic texts”) and are exemplified by “texts broadcast on TV” or “novels on CD ROM”. What additional insight, from an interactivity point of view, is gained from the “electronic text” segmentation? Ryan’s weak/selective interactivity is the equivalent of Aarseth’s exploratory user function where text paths are explored. The strong/productive interactivity is the equivalent of Aarseth’s configurative and textonic user functions. Ryan does not define these in mechanical terms but prefers to discuss aspects of immersion and interactivity in “text worlds”. Examples are brought from MMOS, automated dialogue systems (as Murray) and interactive drama.

To summarise, the ludological perspective on the video games medium as dynamic ergodic text machines yields a highly mechanistic and systematic view of interactivity. The most theoretically nuanced perspective within ludology is provided by Aarseth who dismisses the concept and replaces it with his own set of theoretical tools – primarily his textual typology and in particular the user function. Furthermore, mere active and dynamic participation is not sufficient to comprehensively theoretically define the relationship between user/reader and text. “Video game interactivity” primarily involves the possibility to add elements and modify mechanisms within the dynamic text machine. From a narratological perspective, interactivity becomes a novel feature that extends narratives into new media forms such as video games and others. Interactivity separates video games from traditional narratives such as drama, literature or film, but established notions of drama, fiction, narratives and storytelling are used as analytical concepts. Interactivity is a result of procedural and participatory properties of cyberspace/Holodeck/video games. The possibility to add new elements to the structure of the dynamic text are not elaborated. Ryan posits fundamentally interactive text as something that makes use of reader input and she also elaborates the possibility to add elements to dynamic text structures. Unlike Aarseth Ryan does not specify exactly what types of textual elements/objects are added to the text.

CONCLUSION: SIMULATION VS REPRESENTATION

The differences between ludology and narratology are in many cases apparent, while similarities exist in surprisingly many instances. This chapter will illustrate that there exists a fundamental decisive issue between the two perspectives, and that this issue diametrically affects the interpretation
and general understanding of the video games medium as such. The difference lies in whether the video games medium is based on *simulational* or *representational* aspects.

It should be noted, however, as has been done several times previously, that ludology and narratology do not represent coherent theoretical schools. Aarseth does not even apply the term ludology to his work, as claimed by another salient self-proclaimed ludologist Frasca:

> The first time I heard the use of the term “ludologist” was [in 2001]. It was used to describe Markku Eskelinen, Jesper Juul and myself. Since our research work generally follows Espen Aarseth’s, by extension the term has also been associated with him. Interestingly, Aarseth has never used the term “ludology” on any of his writings.

*(Frasca 2003a)*

The objection to narratological perspectives has unified a diverse selection of theorists with various backgrounds, sharing a common assumption video games constitute a new communicational realm that radically departs from previous media forms. Many assume that narratology and ludology are theoretical substitutes and rivals for the exact same theoretical positions, However, some researchers claim the opposite, among them Aarseth:

> To claim that there is no difference between games and narratives is to ignore essential qualities of both categories. And yet, as this study [*Cybertext – Perspective on Ergodic Literature*] tries to show, the difference is not clear-cut, and there is significant overlap between the two.

*(Aarseth 1997)*

The situation becomes even more interesting when the lines become increasingly blurred according to some theorists:

> […] ludology and narratology may not be absolutely antithetical. Murray seems to value configurative practice quite highly. She defends aesthetics of the “multiform story” against critics who find such work simply incoherent (89); she points out that the computer is an “engine”, not a broadcast receiver (72) and holds that the key to future artwork lies in “procedural composition” (273); she argues that interactive design must find “formats” appropriate to digital technologies, rejecting those inherited from earlier media (64).

*(Moulthrop 2003, p. 64)*

The similarities between ludology and narratology in Moulthrop’s view become apparent, particularly when focusing on Murray’s perspectives.
Ontological Differences

Nevertheless, Frasca proposes a definition of the difference as follows:

While I do not necessarily discard these approaches [narratologic], I think that games are ontologically different from narrative because they are not just based on representation. Instead, they rely on simulation, which is a way of portraying reality that essentially differs from narrative.

(Frasca 2001a)

Frasca’s claim cuts to the core of the entire ludology vs. narratology polemic: one views the experience of video games as a simulation, while the other sees the exact same phenomenon as representation. The difference might seem miniscule, but to elucidate the fundamental difference a number of assumptions have to be explained. The simulational interpretation is affiliated with the ludological perspective, while the representational aspect is associated with the narratological perspective. Representation is a way to communicate a simplified view of the world. It can never be complete, because then it becomes the object it depicts. By definition a representation excludes some aspects and enhances others in order to facilitate and shape the communication process. Paintings, text, film, drama, photography and many others are representative communication. Even if technological developments (e.g. photography) provide almost life-like fidelity and detail, they always introduce new types of boundaries that simplify and generate representation such as limited resolution, sensitivity, focus, zoom, image effects etc. Even a fully immersive and transparent medium (NB. the vision of VR) would still have to limit its representation – who would like to do the dishes, pay taxes, take out the garbage and do other mundane (and boring) tasks in a fully immersive alternative reality? The role of representation is not only to limit and hide the “truthful” world, but also to ameliorate the world by selecting and enhancing aspects that might get overlooked in all the complexities of the world.

Simulation introduces an alternative mode of communication and reality depiction. Simulation also presents a limited depiction of reality, but in a completely different manner from representation. Simulational communication provides the principles that constitute the depicted object – it adds another layer to the communication process of representation: the manipulation of input to the depiction. A classical case of representational depiction: a picture of a bicycle with close-ups of vital mechanisms/details with symbolic diagrams (arrows, etc) indicating the bicycle’s dynamics. This gives a fairly accurate depiction of reality, and has been used for centuries as a learning tool. Representational depictions form the communicational
foundation of all types of mass media, including pedagogy throughout the ages. Nonetheless, there is a limit to how much complexity can be communicated, and other forms of communication “closer” to the (material) reality have to be employed. That is why at some point medical students stop learning the Latin anatomy and start dissecting cadavers. Interacting with reality is not always feasible: how do you “interact” with the world of Napoleon when studying his particular era in history? There is a need for something between the selectiveness of representational communication, and interaction with reality. The solution, for ages, has been *simulational communication*: models (or other mechanisms) that explain the dynamics of complex phenomena by selecting certain dominating and decisive principles of its reality and translating them into the (material) mechanics of a model. For instance, a wooden mannequin is one of the oldest and most effective ways to *simulate* the visual properties of a human body. The simulational principles are quite simple: elementary wooden shapes that depict an (idealised) shape and relative proportion of a body part, and those are interconnected with bendable joints in a fashion that corresponds to the joints of the human body. In this way, complex and fascinating visual properties are simulated in ways that would require years of representational communication studies.

Does not representation and simulation of the same object, give rise to similar outcomes? Both rely on limiting, selecting and enhancing aspects of reality, which is done by their creator, the “author”. The reader/user of a representation/simulation is still in the hands of the author who encodes a message, transmits it through a medium (text or model) and then hands it over for encoding and interpretation. Contextualised in a narratological/ludological setting the question becomes: is not the outcome of a video game a narrative, even if it simulates a video game world? Frasca attempts to define the difference:

Certainly, each outcome [of a video game] could be considered as a narrative, just like any videogame session of *Super Mario Bros.* could also be viewed as a story (even if most would be quite strange by traditional narrative standards). And this is the reason why so many people insist to call videogames and simulation “interactive narrative”; *for an external observer, the outcome of a simulation is a narration*. But the simulation itself is something bigger than narrative. It is a dynamic system that yes, contains thousands of potential “stories”, but it is larger than the sum of its parts. The simulation itself is not a narrative, it is something different, in the same way that a kaleidoscope should not be understood as a collection of possible images but instead as a device that produces images according to certain mechanics.

(Frasca 2001a)
For Frasca the difference is: “for an external observer, the outcome of a simulation is a narration”. Consequently, the difference between simulation and representation (in the case of the video game medium) depends on the level of analysis. From an external perspective the experience for a player/reader of a video game becomes a narrative. The question becomes whether the experience of playing a video game from a reader/player/user/interactor perspective is a narrative experience, and whether the video game in itself can be considered to be a narrative. Is it possible to have a narrative experience with an *a priori* unknown outcome in the hand of the reader/user/interactor?

The question can be applied to other emergent phenomena. An illustrative (yet slightly pretentious) example might be the life of a normal human being. Life is often portrayed as a narrative, and this is particularly evident in biographies or most obviously in obituaries. In these “life narratives” the flow of life seems to follow certain rhythms, developments and occasionally a dramatic turn. Most importantly, life as such has a profound and overarching meaning (often associated with noble attributes): *e.g.* “He/she dedicated his/her life to helping those in need”. Even business magazines present careers with hyperbolic and hagiographic statements that create exciting narratives full of successful turnaround management decisions. A pivotal question is raised: are these human fates really narratives? Is a business career also a narrative? Gennete’s definition of narrative (“the representation of an event or of a sequence of events”, 1980) is applicable as these representations provide events sequences. However, is life itself a narrative for the person living that life? Does not life require a representation (i.e. writer) to become a narrative? Life is a narrative for the observer who recreates it in a representation, but life for the person living it is an unknown experience that develops in unknown directions with the passing of time and can only be assumed to contain one inevitable ending: death. If life itself constitutes a narrative then time itself also becomes a narrative, and subsequently anything that is affected by time (practically everything).

Similarly, in the video games situation the player does not know where the video game will take him or her next. In Frasca’s view this indicates that video games are *not* narratives since they are dynamic simulation systems that contain potential “stories”, but they are larger than the sum of their parts. For an external observer the video game becomes a representation of the sequence of events that the player takes during a video game session. Consequently, Frasca posits simulation as ontologically different to representation, and thus both represent diametrically different approaches to the video game medium.

However, some narratologists, such as Murray and Ryan, disagree with Frasca’s perspective. Both posit simulation as a type of narrative. Mur-
Ray extensively describes examples of the simulation game of *SimCity* as a narrative (Murray 1997, p. 88). The digital medium is a dynamic tool of representational communication:

All the major representational formats of the previous five thousand years of human history have now been translated into digital form. There is nothing that human beings have created that cannot be represented in this protean environment, […]. And the digital domain is assimilating greater powers of representation all the time, as researchers try to build within it a virtual reality that is as deep and rich as reality itself.

(Murray 1997, p. 28-29)

Ryan actually defines one of eight characteristics of VR as being “simulation as narrative”. She does not, however, consider these narrative worlds to follow traditional forms of Aristotelian drama, but instead assume forms of epic or episodic narrative forms. Ryan’s perspectives on simulation as narrative are not extensive, but are based on Baudrillard’s notion of simulacra, where the essence is deception and where simulacra is the embodiment of fundamental cultural and epistemological foundations.

A representational approach signifies a narratological approach since it treats the fundamental communication process in the video game medium as the same as in previous representational communication forms (film, literature, etc). The unifying theory of narratology interconnects various media forms into a cohesive theory of narrative communication. The ludologist Juul points out that simulation cannot be a form of representation since the two are quite simply fundamentally incompatible:

[…] there are two parallel claims being made:

1. Games and stories are very different things. (Story here understood as a fixed sequence of events.) What makes a game a game is exactly what makes it a non-story. It is a mistake to design games that try to be “story-like” and it is a mistake to analyze games as stories.

2. The enjoyment of games hinge on their rules, not on their representational level. The representation/fiction of a game is unimportant. (I believe I was wrong about this one.)

(Juul 2004)

Juul here depicts the representational perspective in a simplistic fashion. A story is a static and predetermined structure incompatible with the dynamic and interactive structures of video games, thus making “video game storytelling” an oxymoron unsuitable for academic analysis. It should be
noted that Juul has modified his somewhat radical approach about fully ignoring the representational aspects of video games.

On the other hand, as Wardrip-Fruin and Harrigan (2003) stress, the work of Bill Nichols and Lev Manovich have successfully shown that the simulational capabilities of digital media do distinguish these forms on a fundamental level from other media forms, which makes analysis based on approaches developed for older expression forms unrewarding. Few theorists, narratological or otherwise, would fully subscribe to a traditional representational interpretation of the video game medium, since this would, as Frasca claims in various texts, have to overcome the problem of describing a dynamic phenomenon with static tools. A hypothetical “fundamentalist” representational analysis of the video game medium would require a full description of every situation (“frame”) in the video game, or at least a description of the most relevant and frequent type of situations. Clearly, a “fundamentalist” approach is unfeasible due to the exhaustive effort it would require to analyse every representational dimension. Defenders of representational approaches, such as film theorists, claim that the interactive dimension of the video game medium does not fully eradicate representational aspects of its communication process, and that modified forms of representation do exist in the video game medium. They do acknowledge the simulational aspects of the medium, but consider it to be a narrative phenomenon that lies at the heart of the video game medium.

Consequently, the simulation vs. representation perspective is not as straightforward as Frasca would make it appear. Narratologists are not representational “fundamentalists” – many acknowledge the existence of simulational dimensions. Moderate adherents attempt to incorporate the extensive body of work that representational media analysis contains. Furthermore, many narratologists consider simulation to be a narrative device like any other. Simulation is recognised as a pivotal and dominant component of interactive media, but is not, contrary to Frasca’s claim, ontologically separated from narrative representation – “simulation is narrative” as concisely posited by Ryan, or implicitly assumed by Murray. This in essence constitutes the difference between narratology and ludology – the differing views on simulation. A clear line can be drawn here: does simulation represent a radical departure from previous forms of media expression? This decisive question has massive ramifications for the understanding of the entire video game medium.

If simulation is assumed to be a novel communication process then as a consequence the interpretation and understanding of the video game medium requires a nascent and innovative approach based on these premises. Simulation is intrinsically linked with interactivity, and can be considered a salient concept in the group of meanings that constitute the notion of
“interactivity” – it must be included in a “new perspective” on video games. Adherents of a ludological perspective assign particular importance to the simulational aspects. Aarseth defines concisely the relevance of simulation as:

The computer game is the art of simulation.

(Aarseth 2003, p. 52)

Furthermore, in his schematic model of the internal structure of adventure games (analysed previously) there are three major types of component: database, processing and interface. The processing engine is divided into a simulation and a representation engine. It is evident that Aarseth considers the simulation engine salient in relation to the representation engine, where representational aspects such as visuals or storytelling dimensions (see also Juul’s work) are considered as ornaments to the underlying game mechanical structures. Aarseth has been famously criticised by Murray (2005) and others, for having stated that:

[…] the dimensions of Lara Croft’s body, already analyzed to death by film theorists, are irrelevant to me as a player, because a different looking body would not make me play differently […]. When I play, I don’t even see her body but see through it and past it.

(Aarseth 2003, p. 46)

Many narratologists consider this perspective to be ludological “militancy” since it attempts to eliminate any significance of representational aspects, which of course has later been objected to by Aarseth claiming that representation is present in video games, but not in the same manner as in traditional media.

LUDOLOGY VS. NARRATOLOGY – A NATURAL DICHOTOMY?

After several years of polemics in journals and anthologies, occasionally with many exaggerated accusations put forth by both ludologists and narratologists, some claim that the debate has reached a point of saturation, where the arguments have been exhausted and the polemic stalled (Juul 2004). Some would claim that the debate never really even took place (Frasca 2003a). Even Aarseth refrains from calling his perspective “ludological”, and Murray claims that the entire debate is a synthetic one, where a number of “ludologists” have created a phantom adversary in the shape of narratologists such as Murray, Jenkins and others (Ryan, Laurel) (Murray 2005). Furthermore, Murray finds it ironic that most ludologists are
trained in narratology. She concludes by claiming that ludology is primarily a methodology and an ideology, a form of computer game formalism (CGF) – a methodology derived from structural narratology.

Neglecting these fuzzy negations, this study holds that the foundation upon which the debate is based is still highly relevant. Simulation or representation constitutes an ontological difference which resonates throughout the plethora of theoretical frameworks that have been created in this debate. Even though some might diplomatically claim that both perspective “shed different lights on the same subject” it gives rise to certain misinterpretations. For instance, some draw the conclusion that there are two types of video games: “play-games” and “story-games”. The play-games are the domain of the ludologists, while story-games are narratological fields. A typical play-game is (obviously) Tetris, while the quintessential story-games are for instance the Metal Gear Solid series (extremely story-driven with hours of FMVs). This type of reasoning is highly erroneous due to two reasons: both perspectives attempt to describe the entire video game medium. Ludology does not simply study “play-games” but all possible video games, including the “story-games”, as witnessed by Aarseth’s extensive analysis of “interactive narratives”. The narratological perspective also extends to puzzle games (such as Tetris) defining them as symbolical dramas, but viewing games without stories (“play-games”) as primitive and underdeveloped. Thus both perspectives, despite claims to the contrary, consider their perspective to be comprehensive and inclusive. Secondly, there are no such things as “play-games” or “story-games” as both are misinterpreted exaggerations of both perspectives. The misinterpretation is based on the assumption that video games with elements of storytelling (humanoid characters, FMVs, etc.) are automatically defined as “narratological”, while video games without these properties become “ludological”. These definitions are erroneous as both perspectives are attempting to define theoretical frameworks that encompasses the entire spectrum of video games – a general theory of video games.

Due to the nascent state of the video game medium, these perspectives inevitably influence how the video game medium is perceived, and where it should go. It is a fundamental tenet of this study that these two opposing discourses of simulation vs. representation, ludology vs. narratology and game vs. story, exist and resonate throughout the global media landscape of video games. The video game industry is one of several entities in this landscape, but inevitably due to their role as producers, innovators and developers of the medium have a privileged position. In the chapters ahead this study will develop the notion that the fundamental tension of
the video game studies also exists *within* the video game industry and that it actively shapes how we perceive the medium, what we expect from the medium and finally how the medium is developed.

The field of video games studies has been quickly dominated by these two discourses and have indeed shaped much of the discussion concerning the essence of the video game medium. Numerous alternative approaches have been proposed (*e.g.* semiotical analysis), but they lack diffusion and amplification in comparison with the two major perspectives. This rather begs the question whether ludology and narratology somehow represent a natural dichotomy of video game analysis? Are these perspectives of simulation and representation somehow intrinsically linked to the properties of the video game medium or a consequence of social constructions, institutionalisation and academico-political factors? It is probably a consequence of both: intrinsic properties and cultural factors.

The video games medium lacks a clear and ubiquitous identity other than the dubious concept of “interactive entertainment”. Video games have an astonishingly broad range from *e.g.* puzzle games, “interactive films”, MMOGs through exercise games, music games, story driven video games, FPS games and countless other different genres. The fundamental and common expression form of all these genres is still unknown. Some of the few common denominators are visual output (“video”) and user input (“interactivity”). The “video” dimension provides intrinsic associations to other “video” forms of expression (*i.e.* cinema and television), which instinctively gives rise to interconnections to the gargantuan tradition of storytelling and its sciences. The novel “interactivity” dimension produces diverging associations: revolution or evolution? The “revolutionists” somehow feel that storytelling perspectives do not do video games justice, as it overlooks too many (internal) aspects. Consequently, the “dichotomy” of story vs. game, representation vs. simulation, and narratology vs. ludology is a result of ontological differences in interpretation, but also as a result of interpretational heritage and cultural factors which situate the medium in a thousand-year-old tradition of media. The dichotomy is thus partially “natural” and partially contextual.

What the following chapters will show is how this “dichotomy” has been shaped, and is actively being shaped within the video games industry. The study will show how there is a fundamental and implicit uncertainty within the video game industry as to what the medium is all about. The discourses of ludology and narratology are highly reflected in this uncertainty and manifested through the industry’s production (video game content) but also in their behaviour (business strategies). The type of consequences the video game industry can expect if it chooses to culturally frame the medium in line with different paths, will also be elaborated.
PART III
DYNAMICS OF MEDIUM AND INDUSTRY
so what type of insights can be drawn from this presentation and analysis of video game interpretational/literary frameworks? The previous chapters have shown how the field of game studies is dominated by two opposing perspectives: ludology and narratology. At the core, these two perspectives constitute a confrontation between the game medium as simulation, or as representation. This dichotomy has existed prior to the (theoretical) polemics – it is an almost trivial observation that some video games aim to represent something (usually some kind of story), while other video games prefer to simulate various types (abstract or concrete) environments.

Part I described the structure and processes of the game industry. How the game industry creates and commercialises the video game phenomenon. It ended with an application of relevant cultural industries/economic perspectives that indeed provided perspectives on the dynamics of this process where the logic of business and industrialisation meets the logic of the video game techno-art. Nevertheless, they did not fully describe the relation between the game industry and its medium since the theory provides an abstract black box description of the medium. Part II provided an analysis of the game medium based on a review and examination of relevant theories from the field of game studies and in particular literary theory.

In the chapters ahead it will be shown how these interpretational frameworks and their perspectives indirectly resonate throughout the entire video game industry. They affect current development but also the evolution of the entire video game medium. By embracing the insights gained from game studies/literary theory and a broader, significantly deeper understanding of the industry can be presented. In a cultural/media industry such as the game industry, the ephemeral and mutable product to a certain extent is the industry since it reflects the authorship, values, creativity and decisions taken when making every new game title, even more so in this fast-paced and ever-changing industry landscape. Product and industry are inseparable, and consequently the dynamics of medium and industry should be analysed together.

Due to the still fluctuating, pioneering and youthful nature of the medium and the industry, there is an awareness and determination on the part of theorists and some developers to influence the direction and future of this industry/medium. Much of the research within game studies has this “evangelical” dimension. In part, this reflects a concern and disapproval of the current state of the industry, labelled mono-subculturing machine, that produces a limited range of game genres that symbiotically nurtures a hardcore subculture. This industry “machine” is smitten by a vision of the medium as part of an interactive cinema industry. The mechanisms of this
“machine” are defined as *hardcore subcultural industry spiral*, which will be presented in a separate chapter. It is upheld and defined by a *creative conservatism* culture of within this industry that will be analysed.

This produces a pretty dismal and gloomy picture of the future for the medium and industry — are there any alternatives to this vision/mechanism/industry? It turns out that there is and it is constituted by the innovative approach of Nintendo’s Wii console which embraces the mainstream by going *counter-stream* to the dominant strategies of the game industry. The industry is indeed at a crossroads: should it develop down the path of hardcore subcultural interactive cinema or open up to innovation that will redefine the medium, broaden the audiences and transform the industry from a subcultural industry to a mass-cultural media industry? To illustrate these points this study turns to historical comparison examples of media industries that have found themselves in similar situations: the comics and the film industries. Both constitute elucidating example and contrasting scenarios of what might be the future of the game industry. These are the pivotal questions not only of this study but also for the industry.
TOWARDS BRAVE NEW WORLDS

It is evident that both perspectives of ludology and narratology intend to influence the development of interpretational frameworks (within game studies), but also the evolution of the medium as such. Both perspectives, and in particular Aarseth and Murray, deride the aesthetic level of video games at the time of their writing at the end of the 1990s. Murray is by far the most vocal critic since her fundamental belief is that the medium should develop its inherent dimension of interactive narrativity. “So far”, according to Murray, video games are the most commercially successful and greatest creative efforts of “digital narratives” – and not the other way around, i.e. that the video game medium has given rise to games with digital narratives. Most efforts have been in the field of “more finger-twitching challenges” and “more persuasively rendered opponents”, i.e. developing the aspects of input and computer graphics. As evidence of underdeveloped video games narratives Murray laments that successful video game franchises, such as Mario and others, are impossible to translate into “movie heroes”. This is not incompatibility between the game-oriented medium and narrative/story telling, but rather a confirmation of the underdeveloped state of the video game narratives. Murray actually posits video game narratives as possibly being diminished by the “structure of games” thus assuming a potentially conflicting relationship between the characteristics of games and narratives. She and other narratologists provide theoretical tools to design more sophisticated video game narratives. A process/technology of *procedural authorship* (with primitives, themes, plots, morphemes, Minskian frames, story algorithms, moral physics engines and distributed intelligent agents/chatterbots) is proposed. Murray envisions a system of distributed agents that emergently create an interactive narrative that omits the need for a complex top-down AI-driven cyberauthor. Brenda Laurel outlines precisely this type of cyber-authorship: a *playwright* system acting as a “director” of an interactive drama based on principles of Greek dramaturgy. Marie-Laure Ryan also imagines a *story generator system* that understands
the logic of engaging narratives. Although not explicit, Murray’s texts are intended to shape the future of the video game medium by influencing the course of current and future developments. The video game medium finds itself in an embryonic and highly decisive phase in its evolution, and it is up to the stakeholders—gamers, academics, theorists, developers, reviewers, publishers and video gaming media—to actively participate in the process of defining this dynamic new storytelling medium.

Even Aarseth, who can generally be considered an avid advocate of video games aesthetics, is frequently critical of the commercial video game industry and their development of the medium. He particularly defends the early text-based adventure games genre (originally produced by academics/enthusiasts before and outside the commercial sphere of video games), which contains a “unique aesthetic field of possibilities that should be judged on their own terms”. Adventure game critics have two camps: apologetics and trivialisation. The apologists produce defence speeches that hail, defend and expose new dimensions of the video game medium. Although without statistical support for this claim, it could be readily argued that a majority of video game academics belong to this camp—they attempt to establish a serious academic field of video game analysis, and care deeply for their subject. Trivialists belittle the video game medium as being primitive and claim it will probably never become a “real” medium comparable with drama, literature or film. Aarseth positions himself somewhere in-between these two camps—he defends the game medium as having its own aesthetics, while at the same time claiming that current (at the time of his writing in 1996) video games contain a fundamental paradox: despite having lavish and expensive video game graphics, the “player’s creative options are still as primitive as in 1976” (Aarseth 1997, p. 103). “Creative options” are considered “primitive” and have not changed much during 20 years of technological development. Aarseth highly disagrees with the uncritical industry use of the term (concepts such as “interactive games”) and its products of “old escapist nonsense”. He hopes/hoped that the medium’s unique aesthetics would “stimulate the evolution of ergodic media in another direction of Hollywoodian ‘interactive entertainment’, thus expressing evident discontent with its current developments in the direction of Hollywood-inspired video game content. It is clear that Aarseth’s writings, and other ludologists such as Jesper Juul and particularly Gonzalo Frasca, are meant to influence and shape the general perception of video games, but also change the current course of video game development. Frasca, whose research project is in many regards dedicated to interconnecting the simulational aspects of the video game medium with (leftist) political activism, is most expressive about setting out a new direction for the video game medium. Like indie
games that try to reinvent the video game medium by challenging the established commercial game industry, Frasca is convinced that the medium and industry need a new course of evolution.

This study shares the analysis and intentions of both these perspectives: the video game medium is still in its formative stages and it is our task to develop it in the direction that we consider the most rewarding. There are many directions that the industry can and should take in the future. The global video game industry finds itself at a crossroads where extremely pivotal decisions have to be taken. In an age of increasingly globalised, fast-paced and electronic/digital market behaviour inhabited by international and hyper-affluent consumers with fickle loyalties – where should the video game industry go? However, when examining the current state of the video game industry and its strategies concerning risk management, financing, content, genre creation, innovation, software, hardware, marketing and communication, there seems to be a strategic void. We have purportedly witnessed the “collapse of the hardcore gamer paradigm” and the transition into a new era of reinvented and innovative content/marketing strategies adapted to the plethora of post-hardcore gamer audiences. However, is this really a fact or rather PR/IR/news release spin combined with wishful thinking of how the industry would like to be perceived? What type of new “master themes” is the video game industry putting forth in order to deal with the changing landscape of the global video game medium? Is the industry in charge, or is it merely improvising along the way?

Following a request (analysed in a previous chapter) from French philosopher Gilles Deleuze to “re-think philosophy” in order to deal with the “specificity of cinema” and its “new practice of images and signs”, this study supports a similar theoretical development of the video game medium to grasp and fulfill its unique characteristics and promises. Murray elaborates the “unique primary representational property” of video games which is identified as “codified rendering of responsive behaviors”, in other words “interactivity”. This study supports Murray’s view that video games have “unique properties” – be it representational or simulational. However, interactivity does not stringently define this property. In this regard, Aarseth’s comprehensive theory is more rewarding as it defines what, and how, different types of internal mechanisms of the video game medium interact with the reader/gamer. This study supports the quest for a theory that describes the interpretation of the video game medium and provides valuable insights as regards its artistic/commercial/societal development. Rewarding clues can be found in ludological and narrativist perspectives that expand their analytical concept from the meso-level of literary theory to the macro/cultural-level of business, economy and society.
THE MONO-SUBCULTURING MACHINE OF THE VIDEO GAME INDUSTRY

As has been outlined in the previous chapters with empirical descriptions of the industry (and its structure, dynamics and practices), a fragmented yet coherent picture of industry arises. The following traits can be identified:

- The game industry has grown explosively during recent decades, which has shaped a type of burgeoning, pioneering, experimental renegade industry where everything is in constant flux. Despite increased professionalisation and stabilisation the industry is still, in comparison with more traditional industries, a young and immature industry.

- This industry has never successfully managed to market products that serve a multitude of target groups – with the exception of segmentation according to international/globalised markets.

- Throughout its history the industry has predominantly targeted boys/men: from the initial Nintendo generation, through Sega and Sony, the target group has remained the same but varying in age. The aging hardcore gamer has “dragged along” its younger co-gamers, giving rise to game genres that target children’s, adolescents’ and educational markets.

- Women have historically been left out of the video game industry and its target groups. Awareness of this situation is growing and attempts to remedy this situation have been backed by efforts from academic, industrial, and society groups and organizations. Although claims of progress in this aspect are presented (predominantly from the “besieged” industry), males still vastly dominate the
industry, while statistical proof of radically increased percentage of women gamers are questionable.

- By a combination of external and internal factors the industry has for most of its commercial life (almost three decades) been dominated, in terms of marketing and commercial strategies, around the notion of the “hardcore gamer”, which is constituted by a young and affluent man, aged between 18 and about 34, living in North America, Europe, and Japan – a geographical triangle that has historically preoccupied practically all marketing strategy within the industry and continues to do so.

- Pricing, content, (high) technology, marketing and cultural factors have resulted in a global media channel that omits large parts of developing/emerging markets and Third World, thus excluding and stratifying culturally and commercially on an unparalleled scale in comparison with traditional media.

- The industry has acknowledged the “collapse of the hardcore gamer paradigm” and proclaims to have moved on by focusing on the underdeveloped segments of “women” and “seniors”, but has in reality not found any new prominent substitute concept(s) – fervently denying this fact, the industry is frantically searching for new segmentation and marketing techniques.

- Video game content, in terms of sales and consumption, is highly dominated by a short list of extremely rigid genres governed by strict types of gameplay formalism such as action, sport, racing, shooter/FPS, RPG, family/children’s entertainment, strategy, adventure and fighting.

- Rampant video game sequelisation and genre formatting through a form of plagiarism is adamant and has existed since the (commercial) dawn of the medium.

- Game content is characterised by a low level of innovation in terms of aesthetics and gameplay – technologically the industry provides highly innovative products. This claim is strongly contested by some industry professionals, often leading to debates about what constitutes innovation in this medium/industry.

- Video game console manufacturers are, with the exception of the initial formative console generation(s), a paramount industry force that controls practically every step of the value chain, excluding the final step: retailing.
• Video game consoles create “mega-platforms” in terms of business, technology and content. They give rise to an extensive ecology of secondary industries that are highly dependent on the dynamics of their “core”. This core constitutes the “meta-strategic” force of these global industries.

• The PC/Mac as a video game platform has historically been competitive in terms of technology and popularity, but is now decreasing in importance due to the technological and business-related instability of this platform. It is consequently repositioning itself as “hardcore”, “enthusiast” or “casual” platform.

• In terms of platform technology, the industry has a propensity to expand the video game medium into practically all types of electronics hardware with support for input, graphics rendering/computation and visual/audial output, thus hopefully moving it increasingly closer to consumers.

• Visual (photo) realism, and its technological quantifications such as graphics resolution or polygon count/rendering, is highly prioritised in the technological race to develop (better) video game (graphics) hardware.

• The visual realism race has drastically increased the technological complexity of video game development, both in terms of software, hardware and labour. Together with more extensive game world spaces (as a consequence of the expandable memory capacity of newer game media storage technologies) this results in a dramatic increase in game development costs and overall budgets. These increases are closely related to the introduction of new game console generations entailing milestone technology leaps.

• Overall global market sizes have continued expanding – in terms of sales, number of countries/markets, number of consumers/players but also number of (quality) video game titles – up to 2009 when a sharp and alarming industry decline was posted.

• Despite drastically increased costs and wider markets, the fundamental business model has not changed much in three decades: video games are sold in packages at retail and have a handful of weeks to generate most of their revenues. There are limited second chances or alternative revenue sources for the game product.

• For every new technology/console generation transition, effects are felt like a shockwave throughout the industry: consolidation in
every segment, smaller developers/publishers go bankrupt/are acquired, larger publishers buy mid-sized publishers (becoming even more influential in the global industry landscape)

- Consolidation in the video game industry will inevitably lead to a “big four” of global publishers being established soon, as in the music, film and other cultural industries. “Regional publishers” have long since ago lost the financial ability to successfully finance and publish AAA titles. Consolidation of the publisher sector will lead to an unprecedented consolidation of cultural production and power.

- Alternative sources of financing are limited or non-existent. Unlike the music, book and film industries that have successfully created a global landscape of state subsidy structures, the game industry has only in few regions (e.g. Quebec, Scandinavia and very few others) managed to convince government agencies/ministries to co-finance game development. The video game medium is not (yet?) considered worthy of receiving tax payers’ money other than indirectly to academic studies and the educational field.

- Online/electronic distribution, which is radically transforming the music, film and newspaper industries, has made surprisingly little impact on the video game industry, despite the fact that its product is in essence electronic. Effective copy-protection technologies, industry conservatism and excessive reliance on retailers can be mentioned as the main factors behind this reluctance to new forms of distribution.

- Game console online services have achieved some degree of success with the distribution of “casual” games i.e. simple small video games that do not directly compete with the “real” console games.

- In 2009 “social gaming”, a type of casual gaming that rely on social networks (such as Facebook) for electronic distribution and community gaming, have risen to prominence. Profits and sustainable business models for this new “genre” are, however, still elusive.

- The global success of Massive Multiplayer Online Games (MMOGs) points towards new forms of business models, game genre and game concept innovation.

In other words, the global video game industry can be described, somewhat exaggeratedly, as a dysfunctional and extremely path-dependent industry that thrives on producing an oppressively confined range of monotheoretical content based on stereotypical pre-modern polarised depictions
of excessively violent militarised, motorised and athletic masculinity that spawns a perpetual cycle of ever-more-expensive innovation-stifling sequels and competitor-plagiarised “genre games” with ever-increasing detail and visual photorealism – a medium that predominantly targets a semi-adolescent subculture of young, affluent, white, men in the western hemisphere obsessed with themes of sport, violence, guns, wars, car racing, science-fiction and fantasy. This situation is maintained by a mechanism of media business, technology and medium related factors. The inner workings of this mechanism will be analysed and elaborated in this and the following chapters.

Many game-interested people, and most particularly game industry professional, would object to some of the positions in the aforementioned description of the industry. In general, this description touches upon many sensitive issues of the industry – it presents an image of a primitive, adolescent and quasi-amateurish industry. However, these are not fabrications without foundation. They represent data and observations collected during the course of this seven-year study. More likely, these observations touch upon delicate issues that the industry is acutely aware of but prefer to not debate publicly. Many industry professionals would describe this as “historically correct”, but that the industry has left most of these issues behind and that this description is “outdated” and that the contemporary industry has moved on to new challenges. This might be a credible explanation. Or it might be a convenient defence speech/PR-spin by an industry in crisis that is painfully aware of its many shortcomings and is desperately looking for solutions that are yet to surface.

The game industry has a hard time covering many of its blatantly obvious insufficiencies such as: the male-dominated industry structure, the immensely successful but selected few of stereotypical genres that generate the majority of industry revenues, the stratifying effects of radically increased developer budgets, the increasingly closed and internal nature of the video game industry, the existence of a hardcore gamer culture that regardless of counterclaims still constitutes the most vocal and important target audience, the wave of industry consolidation which is not only horizontal but, also as of late, vertical creates highly concentrated power entities within the global industry, a never-ending plague of variety and innovation-stifling plagiarism, more expensive hardware and software, a marketing/communication tendency towards “subculturisation” where those inside the gamer culture are increasingly perceived as esoteric by outsiders *i.e.* non-gamers, among many other issues. These are core issues that remain to be resolved or at least addressed in a decisive manner by the industry.
To explain the logic and reasons behind each issue would require a separate chapter each—many of these issues mutually influence and reinforce each other, while others are more isolated. These are serious challenges—each represents a potential threat to the type of dynamic development enjoyed for almost three decades. They are not challenges that will “sort themselves out”—they require decisive action and serious solutions. There is no single simple explanation as regards why the industry has arrived to this moment in its development with this wide range of challenges. However, some themes can be recognised and two of these overarching themes will later be identified as the notion/theme of *interactive cinema* and the *hardcore subcultural industry spiral*.

It is this author’s firm belief that the game industry has arrived, or will soon arrive, *i.e.* during this console generation, at a crossroads where it must choose one of two conclusive paths: continue along the beaten path it has successfully trod during the last decades or reinvent itself in a way that will open up the industry to a wide range of innovations and new ways of thinking that will resolve the serious challenges that lie ahead.
THE PHANTASM OF
INTERACTIVE CINEMA

Q: Isn’t it [game production] very technical at the same time very “fluffy” with end-user experience and such? How do you combine these two worlds?

A: Yes, but this is exactly the charm of this business! It’s what makes it so interesting. It’s high technology and culture at the same time. And there are so many differences compared to… it’s so hard to compare… but you could compare it to making films, or you could compare it to making business software.

Former Swedish game publisher executive (2006-03-01)

This quote illustrates in an extraordinarily precise way the exciting tension that constitutes the very foundation of the global multi-billion dollar video game industry – “it’s high technology and culture at the same time”. It also illustrates two perspectives that permeate the industry: “you could compare it to making films, or you could compare it to making business software” – with one foot in the cultural industries and the other in the software industry. How the industry is organized to accommodate this phenomenon has been the subject of this study.

This combination of different skills has been elaborated in previous chapters, from a cultural economics perspective, as the motley crew characteristic. In the video game industry extremely sophisticated and complex technological skills are combined with a broad range of artistic skills such as two- and three-dimensional graphics, bit maps, lighting, architecture/decoration, storytelling/drama, animation, sound/music but also more integrated and vertical skills such as game design, level design or interactive storytelling. Like all other cultural industries, this disparate array of skills has to be combined with a commercial reality, which further complicates the already crowded intersection of skills in game production. It is the aim of this study to explore this intersection and outline the various “meta-themes” that dominate this space.
From the previous literature-theoretical analysis chapters, it can be concluded that the dynamics of the medium are dominated by themes of technology, text/machine/medium, game design/authorship/production and reading/playing/consumption. To understand the dynamics of the video game industry another layer of cultural industry/economics logic is superimposed. This perspective provides valuable insights regarding the economic/dynamics of the video game industry, but due to its foundation in neoclassical economics among several other factors, is incapable of taking into account the video game medium’s unique characteristics and its influence on the industrial dynamics.

An “IT perspective” on video games uses (information) technology as a foundation for inquiry, presents an exaggerated (technology) focus, consequently overlooking, in broad terms, the “creative” and “cultural” aspects of the medium and its influence on the industry. Numerous examples of “games design” literature propose a plethora of approaches (Bates 2004; Salen & Zimmerman 2003; Saltzman 1999) for how to understand and create new games. These perspectives in various degrees elucidate the uniqueness of the game medium and the technological challenges of production, but seem to lack any theoretical views on how to bridge these perspectives with aspects of business, media, commerce, organization and “culture” (in a cultural industries sense). Consequently, this study proposes a broader perspective that incorporates all of these aspect into a more comprehensive and eclectic theory of the video game industry and its economy. It is time for a text/medium-based perspective on the video game industry that will incorporate more extensively the position of author/producer, reader/consumer and the dynamics of text/medium.

“INTERACTIVE CINEMA”

The industry is dominated by a number of themes/discourses that highly correspond to the topics analysed in previous literature theory analysis. The notion of “interactive cinema” and other indirect/direct references to a medium of interactive storytelling with moving images, is an adamant discourse in the video game industry, as proven by this quote:

Production-wise they’re [cinema and video games] becoming increasingly more similar. Partially in terms of screenplays where we share more and more common ground. Especially in the type of [genre] video games we work with. A large game can have at least 10,000 lines of dialogue. A film has maybe 1,000, 2,000 lines of dialogue. It’s very comprehensive work for scriptwriters. Those we cooperate with are scriptwriters in Hollywood with backgrounds from movies. They’ve got the same skills to write dialogues, but also overall dramaturgy
that resemble movies. And then there’s acting that’s becoming more prevalent. These 10,000 lines of dialogue have to be read by someone, voice-over or by actors.

cEO of major Swedish game developer (2006-03-03)

The cEO considers the video game and film medium to be becoming increasingly similar, based on a range of shared production and media features. Actors and Hollywood scriptwriters are needed since there is five to ten times more dialogue in an AAA game than in a film, indicating that the narrative complexity, at least in terms of dialogue, is even more complicated in video game production than in films.

The previous game professional represent a particular type of video game developer who focuses on high quality, high budget, (commercial) avant-garde productions of titles that push the boundaries of the medium by developing innovative new products i.e. AAA games. This developer cEO speaks from experience of several successful AAA titles with international game publishers. S/he compares the similarities between film and video game primarily in terms of storytelling and narrative terms. Consequently, these sentiments must be shared by the publishers, who have invested substantial resources in development of their AAA title. This is elaborated by a former cEO of a game publisher (unrelated to the previous game developer):

I realised, rather quickly, that game methodology and game dramaturgy constitute the key that makes this so incredibly interesting – basically anything. All the way from education to pure entertainment and probably also information dissemination and stuff like that. [...] Above all there’s a value in telling stories somewhere, because it’s all about telling a story and creating a dramaturgy.

Former cEO of Swedish game publisher (2006-02-09)

The publisher cEO is of the opinion that the key drivers of the video game medium – from educational, through entertainment video games to information dissemination in general – are game methodology and game dramaturgy.

In this third quote, the cEO of a game developer further corroborates that the essence of video games is storytelling:

Film, television, music and books have been the dominating forms of entertainment for a long time and now suddenly comes a new fifth big industry that’s actually up there and competes on roughly... almost on a par with these both in terms of people’s time consumption, but also revenues and so on. If you compare with film, which in my opinion is perhaps sort of the most developed and advanced of these industries. In comparison with it there’s much we can borrow from it, but in a
long-term perspective there's even greater potential for games, I would say. Because we have much of the storytelling and similar, but in the same there's participation – “sense of accomplishment” – that you get when you finish a difficult game. There are many aspects that are combined together: an emotional experience, motor skills challenge, intellectual challenge, partially a social collaboration and social challenge etc. There's a lot that is tied together in a good game.

CEO of major Swedish game developer (2006-03-03)

The CEO predicts an even greater future for the video game medium because the medium is essentially a storytelling medium but has more engaging features than older narrative media. The film industry is deemed the “most developed and advanced” of cultural industries and constitutes a role model for the game industry.

From a narratological perspective, the previous quotes abundantly display elements of narratological concepts. All of the three quotes consider the video game medium to be a storytelling medium. Furthermore, analogies to film, Hollywood, dramaturgy, dialogues, scriptwriting and acting are made. All of these quotes (and many not included) point towards one conclusion: the video game industry sees itself as closely connected to the film industry – not only in terms of production or business models, but also in terms of media similitude. Much of the contemporary visionary thinking within the industry concerning the video game medium and its future development is very much in line with a narratological interpretation.

However, there is indeed some deviation and questioning of this “hegemony of the narrative”, as evidenced by the following quote:

I've always thought that it should always be story and the experience that drives, but I actually don't believe in that if I'm honest. There's a pursuit of being realistic in a way that is... It's interesting if you look at it. A car game is more realistic, it's even better, which I'm inclined to agree with, as a gamer. It's more fun... you often sort of forget the story somewhere there. I still believe and for a fairly long time in the future, it will be realism [that is most important] how fast it is, screen and detail resolution, how close you can go and stuff like that.

Former CEO of Swedish game publisher (2006-02-09)

In this quote the former game publisher executive questions the prevailing “story and experience” as drivers of the video game medium. S/he emphasises something else, possibly immersion – “the pursuit of being realistic” – that makes video games “more fun” and makes the player “forget the story”. Despite massive support for narratological perspectives, the last quote indicates that there is something beyond the story that drives the experience
and makes the story less relevant. The ludological perspective does not
denounce the possibility of storytelling in the video games medium and
openly acknowledges that video games can be used for storytelling and
that this is indeed the case quite frequently. A ludological interpretation of
these quotes would claim that respondents elaborate the (game) mecha-
nisms beyond the narrative, such as "sense of accomplishment" or the feeling
of "realism". However, is the latter a pursuit of a narratological dimension?
Murray, and particularly Ryan, would indeed be inclined towards such an
interpretation. Nonetheless, it could also be interpreted as a "ludological
dimension". As a simulation medium its graphics engines simulate visual
photorealism, it physics engine the laws of gravity, the effects engines vari-
ous reoccurring effects, the AI the behaviour of NPCs, etc. These engines
improve the simulative realism of the medium.

This study proposes calling the vision of an interactive storytelling me-
dium based on moving images for interactive cinema. This notion is dis-
tinct from the confusingly similar concept of "interactive movies" or "inter-
active films", which is a particular video game/multimedia genre, similar to
a type of hypertext with video episodes as nodes. In this study interactive
cinema is also distinct from the experimental concept/film type, e.g. the
1968 Czechoslovakian film Kinoautomat, where audiences in cinemas vote
and decide the unfolding of the film's narrative – in essence hypertextual-
ised film in a communal and public formatting. Interactive cinema is used
in this study as the name of a vision of a hitherto unobtainable futuristic
medium of interactive storytelling. If and when accomplished it will give
the player the sensation of being inside a film, but with the revolutionary
difference that the actions on the screen are controlled by the player. It will
become a cinema of interactive non-linear storytelling and experiences –
simply put: an interactive cinema medium.

There are two major characteristics of this interactive cinema medium.
It is envisioned as:

- A storytelling medium.
- Based on visual communication – more precisely moving images
  with accompanying sound (identical in general form to "traditional"
cinema).

One general observation in this study is that the video game medium is
frequently seen as narrative medium by game industry professionals, and
more importantly by business-related executives who also extend this simi-
arity to production factors and overall industry structure and dynamics.
The visual photorealism aesthetics of the video game medium have been
established previously: the historical development of the medium can be
characterised as a deterministic quest for increased graphical realism. The Holy Grail of video games is to create a video game space with perfectly photo-realistic dynamically and interactively rendered real-time graphics. It could be claimed, somewhat exaggeratedly, that photorealism is one of the few objectives that all game industry professionals agree upon: executive officers, game artists, game programmers, publishers, console/graphics card manufacturers, marketing executives and others – artist or business executive, they all wish for “better graphics”. Better game graphics are appreciated by developers as creative opportunity for artistic expression, while executives, marketing professionals, publishers, distributors, retailers appreciate graphics since it (in most cases) signifies more attention/sales and higher end-consumer satisfaction. It is evident that this technological quest is partially driven by the significantly broader industrial dynamic of IT, hardware and electronics miniaturisation – “Moore’s law”.

Evidently, the interactive cinema project is a work in progress as no video game, or other interactive medium, is anywhere near of achieving this complex vision of storytelling and (graphics) technology – in experimental or in commercial form. Challenges abound: AI, automated story generation but also the more complex narrative issues of involving the reader/player in the interactive cinema medium in a transparent fashion. The gap between the vision of interactive cinema in relation to existing technologies and potential development trajectories, is immeasurably vast. The vision is driven by ideological aspirations rather than careful analysis of current technologies and medium. Even if perfect photorealism is achieved – how are the challenges of interactive dialogues, stories, acting and many others, resolved? Perfect photorealism might actually even impede the development of interactive cinema since it will expose more visibly the shortcomings of AI and interactive story generators – a type of “uncanny valley of interactive narratives” (“the uncanny valley hypothesis” within robotics and computer-generated imagery states that when robots/representations look almost human-like it causes a disproportionately negative response – in other words, the more realistic computer simulations become the more obvious their minute flaws become to the observer).

Why is the industry pursuing this vision? Why has the industry selected this vision? What are the consequences of this vision in terms of industrial dynamics, target audiences, marketing, technological development and business models? Are there alternative visions? Will it ever become reality and (most likely) prove to be one of the most powerful and expressive media forms ever conceived – or is it an socio-cultural-technology-industrial phantasm chased by a clique of zealous game artists and influential executives with their minds firmly set on an ideological and unobtainable vision?
IMPLEMENTATION OF THE VISION

The vision of the interactive cinema could be referred to as an industrial theme, meta-trend, social construction or discourse. It is of less significance what it is actually called. What matters is that this vision permeates cultural aspects, such as the aforementioned quotes and convictions among various industry professionals, but also material aspects such as in the actual video game titles and technology design (console, graphics card, software etc). It could most probably be referred to as a discourse. This study, however, is not a discourse study and will consequently not be dedicated to the proliferation of the “discourse discourse” (sic) and the discourse analysis (DA) methods or Foucaultian notions of power-knowledge discourses and countless other DA frameworks. Whether it might be called discourse or not is not essential for the result of this study. It could as well be called a social construct. It is indeed something “social” created by cultural interactions between influential game professionals, academics and the larger spheres of media, fan communities and markets/consumer. Deeming it a social construct is not a priority of this study. The most fascinating aspect is not what we call it, but what it does and most importantly how it works.

Why not call interactive cinema a type of business strategy since it involves strategic business-related decisions that dynamically influence medium, market and industry? There are some objections: this is not a deliberate strategy actively developed by a group of people/executives in order to reach defined strategic objectives for certain industry organization(s). Interactive cinema constitutes an emergent meta-strategy/phenomenon that has developed in a distributed fashion over the last decades. There is no single author or single responsible organization. Consequently, it is hard to consider the notion of interactive cinema as a type of “industry strategy”, although some of its processes share similar traits.

How is the vision currently implemented? There are several examples in the current video game medium, and particularly in AAA games:

- Humanoid/anthropomorphic cinematic settings – Surprisingly many video games are set in humanoid or anthropomorphic environ-
ments. This facilitates the spatial identification of the environment by gamers, but also enables the creation of familiar narrative context. It is easier to relate to the three-dimensional city settings of GTA4 than the abstract game of Tetris or three-dimensional Snakes. These humanoid settings are often inspired by the aesthetics of popular environments from the world of cinema: futuristic space/science-fiction world, police/crime contexts, war, organized crime settings, secretive special mission task force, sport arenas, racing tracks and similar.

- **FMVs (Full Motion Videos)** – These pre-recorded segments of video sequences are triggered at pre-defined moments and constitute the primary containers of “narratives” in contemporary (story-driven) AAA video games. In many video games FMVs are used as “mission formatting devices”: FMVs at the beginning (and optionally at the end) of an in-game mission/task frame the “interactive actions” (required to solve the mission) in a narrative context of a background story. The gamer actions are “infused” with story, meaning and context. Most adventure, tactical as well as FPS, action and racing games employ this narrative use of FMVs. In order to maintain visual consistency these are often (though not always) rendered using the same (but slightly improved) graphics engine as the “interactive” in-game spaces.

- **Character development** – FMVs are rarely based on isolated episodes without any narrative connections. It is more popular to use FMVs as glimpses/puzzle pieces of an “opaque” narrative background revealed one FMV at a time. By cross-referencing in-game objects and/or other FMVs a contextual web of narrative containers is spun. Together with other gameplay components they establish characters — i.e. a memorable (humanoid) person that represents certain qualities that the gamer is expected to create relationship with. The use of characters is inevitably related to the tradition of storytelling. In many cases they are imported from other (film, book, TV) settings and in those cases the recognition is much stronger and requires less elaborate ins-game character-building.

- **Character animation** – A popular trend within game development is the practice of digitalisation of real-life acting. By recording movements of human actors using so-called motion capture (“mocap”) technology body and/or face movements of actors/stuntmen are transferred into digital form and re-used within the video game space in order to represent more realistic movements/animations
of characters. This expensive process is technologically complex and mainly driven by the requirements of visual realism – often in narrative contexts.

- **Dialogue-driven in-game storytelling** – Most story-driven video games contain FMVs with extensive use of dialogues presented by characters and written by scriptwriters. They have to be recorded by real-life actors (speech synthesizer technology is inadequate). Since this requires *ex ante* anticipation of all possible dialogues it is an extremely time consuming and expensive process. The previously quoted developer executive proudly boasts about this laborious process, in comparison with movie productions. Dialogues, with computer-graphics generated faces/characters, create a more personal communication aesthetic compared to text or similar. It also aligns the aesthetical expression form with a cinematic/drama tradition with clear connections to narratological media communication.

- **Scripted elements** (“hypermediafication”) – These types of scripted elements refer to the practice of creating paths of narrative developments that affect the possibilities of the in-game actions. Ultimately it is supposed to generate “interactive narratives” where the gamer perceives narrative agency and influences the narrative development. This is rarely the case – most cases of “scripting” create a more or less sophisticated hypertext network of FMVs and game-levels. This has been analysed earlier, with the case of GTA3, where game developers design a hypertext network of FMVs and missions. Admittedly this practice generates a narrative-like experience with a fairly similar “storyspace” experience.

- **Movie games** – The industry rationale behind so-called “movie games” have been extensively analysed previously. These titles enjoy marketing synergies with cross-media promotions and advertising campaign from other members of the franchise. Although practically universally derided as the “movie game curse” for its predominantly low quality, this genre has surprisingly many devotees in the upper echelons of the video game industry, particularly among AAA productions. The reasons for the “movie game curse” can be related to restricted production schedules and creative limitations of the IPR itself (the video game characters/IPR cannot deviate too much from its film equivalent). Many AAA game developers remediate this by envisioning a separate genre of “movie game without the movie”. These highly cinematic, story- and character-driven
AAA productions are adamant among influential groups of game executives and game developers. Groups that decide over the evolution of the (commercial) video game medium.

CLOSER TO THE VISION?

Clearly, the “interactive cinema” vision of the video game medium is being slowly implemented in contemporary video game industry – primarily in terms of visuals and storytelling. However, is this vision closer to Murray’s Holodeck vision, or Laurel’s playwright, or Ryan’s VR story generator systems? Stunning interactive dramas where the video game medium acts as an interactive storyteller that adapts to the interactive decisions of the interactor? Do these contemporary techniques contribute to a medium with the same type of interactive storytelling communication process as envisioned by the narratological perspective?

The answer to these questions remains a unanimous no. AAA productions with movie aesthetics, dialogues, mocap animations and character-driven FMV-episodic storytelling based on hypermediafications does not bring the video game medium closer to the interactive narrative vision of narratological theory. These techniques predominantly affect the gameplay aesthetics – the titles refer in style, visual and audial appearance to the aesthetical tradition of film storytelling. Or, as Bolter and Grusin would frame it, these video games attempt to remediate the film medium experience. However, style does not equal substance as these techniques primarily visually mimic the general style of the film medium. Interactive storytelling/narrative techniques remain virtually undeveloped from the technological visions of hypertext and hypermedia by Ted Nelson in the 1960s. In most story-driven AAA titles the “interactive narrative” consists of a hypermedia network of FMVs, dialogues, in-game objects and event sequences. The gamer explores this conditionally linked network by doing various actions (usually finishing a level or mission) that open up new branches (missions/levels) of the network tree. Regardless of how visually impressive this hypermedia network becomes by sprucing and dressing it up with impressive FMVs and NPC dialogues, it still remains a simple type of hypertext. This most certainly does not constitute Laurel’s playwright system or come anywhere near Murray’s moral physics. There are some unsuccessful attempts to provide more sophisticated interactive storytelling mechanisms such as primitive forms of dialogue systems, but these are
hypertextualised branching dialogue trees where the player on a turn-by-turn basis in the dialogue (with the NPC/system) can decide from a handful of options where to take the conversation next.

Murray, Laurel and Ryan’s visions of interactive storytelling rely completely on a tremendously knowledgeable AI core that inspects the storytelling logic (“the moral physics engine”). As might be expected there are no moral physics engines anywhere in sight of contemporary AAA productions. The technical challenges associated with the development of such a morally conscious and utterly intelligent storytelling system are monumental for academic research, let alone a single game developer. The issue of whether the interactive cinema vision is possible or not is not simply a technological question that boils down to the issue of feasibility of AI technological development, but also involves literary and communicational challenges.

It can be concluded that the interactive cinema vision is inevitably a narratological vision. Much of its dimensions are aligned with the visions/theories of the narratological perspective. Current attempts are more focused on creating an illusion of interactive storytelling rather than developing the underlying techniques and mechanisms for delivering this vision. Even narratologists acknowledge that their vision is a futuristic one. In order to realise this video game vision, substantially more aspects than just the technological one have to be developed. New literary concepts and devices have to be invented to incorporate the creative potential of the interactive media/storytelling dimension. At present there are limited signs of this type of narrative technique development. Since the notion of interactive narratives is a highly contested proposition, in particular by the ludological perspective, it might be appropriate to ask whether it is prudent to base the influential interactive cinema vision on a theoretically disputed and perhaps technologically impossible vision? Can the vision ever become reality in terms of technology, medium and literary communication – or is it a hollow and questionable phantasm that baffles the mind of the game industry elite?

What is the ludological perspective on the interactive cinema vision? The most obvious points of objection would be the adamant use of FMVs and hypermediafacation. A narrativist claim is that FMVs somehow episode-by-episode outline the plot (“syuzhet”). The gaps in-between are filled in by the gamer/reader through in-game actions (levels, missions etc.) thus creating the story (“fabula”) – in line with Iser’s literary Leerstel-len theory. The gamer becomes a “co-author” of the video game text by means of “gap-filling” and is in charge of his/her own “interactive fiction”. This claim has been refuted by Aarseth as an inappropriate application of Iser’s theory. Aarseth claims that instead of filling in the gaps with the
same independence as the author, the reader/gamer/player explores the
game structure/space to discover the “winning plot”, as strictly defined ex
ante by the author/developer. This is a more stringent literary-theoretical
way of expressing what most gamers discover when playing “narrative-
intensive” video games: you are not in charge of the narrative/story but
more akin to a “passenger of the story” manoeuvred under the (visual) illu-
sion of free choice/will, to make “successful” selections that “develop” the
story forwards. Expressed in a more practical way: many gamers skip the
FMVs (if allowed) and figure out the solution during gameplay. Badly im-
plemented FMV-intensive AAA productions become a sequence of slightly
branching FMV chapters that are triggered by conditional player-actions,
thus transforming the player into a “go-between of story episodes” – leav-
ing one FMV chapter with the next chapter in sight. In theory the gamer
can resist “the next chapter”, but this only amounts to ignoring the game.
Or as game theorist Caillois puts it: an involuntary game cannot be con-
sidered a game. The gamer must want to continue the game, otherwise
he/she is no longer playing. In essence, FMV-intensive AAA titles are types
of hypertext with dynamic branches (best case), or static network more
restrictive than a codex book (worst case).

Furthermore, “hypermediafiction”, i.e. the practice of creating FMV-based
stories with branching trees of “non-linear narratives” (i.e. the player can
jump between branches), only reinforces the ludological perspective on
video games as essentially non-narrative media forms. Despite claims of
“non-linearity” for instance in the following presentation of GTA3 as:

[...]
a combination of narrative driven and non-linear gameplay and
a completely open environment, the game represents a huge leap for-
ward in interactive entertainment

(Rockstar Games 2003)

the fundamental textual organization of the story-related game mecha-
nisms is not that much different from a hypertext.

This cuts to the core of the ludological argument. Imagine a future
video game medium that contains hundreds of thousands of options and
branches, in place of the maybe ten or hundred branch options in contem-
porary video games. What will these video games be like when the gamer/
player is presented with dozens upon dozens of options? What type of
author-reader relationship will be present? According to ludologists this
hypothetical video game future full of freedoms and choices will result
in a medium that is no longer “narrative” but simulational. Even Murray,
the most outspoken narratologist, acknowledges that narrative closure in
shape-shifting worlds of digital environments resembles “the solution to a
constructivist puzzle” (Murray 1997, p. 169) perhaps unknowingly admitting a somewhat game-oriented aspect of the video game medium. This futuristic medium is no longer a representation of reality, but rather a simulation where gamers/readers are playing with the simulational reality instead of reading/interacting with a representation. Actually these types of environment partially already exist today – FPS, action, strategy, adventure, sport, racing, simulation etc. – gamers play a seemingly endless number of options. For instance, the brutal shooting action of an FPS game is not a narrative – it is a game of shooting, problem-solving and tactic that is played. The options are however limited, not in quantity, but in quality – a gamer can kill an NPC opponent in hundreds of innovative ways, but he or she cannot talk to the same opponent. A gamer can build entire cities and worlds inside the spaces of simulation video games, but never freely talk to its inhabitants and hear their gratitude or discontent.

The oft-cited analogy to sport is fitting: is a game of football an exciting narrative or is it a game – a game that simulates a simplified reality of confrontation, struggle, justice, resolution and ultimately victory and defeat? Similarly, as proposed earlier: is the life of a man or woman a sequence of more or less unpredicted events, or is it a narrative full of meaning and determination, as presented in “narrativisations” such as obituaries or biographies? Many would agree that sport is a game, and life is lived, rather than being narratives.

Despite three decades of roaring development the video game industry and its medium is still at a highly formative and decisive stage. Considering the theoretical foundations of the influential interactive cinema vision, a decisive question is raised for the industry: should the industry pursue a vision that is theoretically controversial, (probably) technologically inaccessible or should it investigate the possibilities of alternative paths? Are there any other alternatives present in the industry? What type of consequences does this have for the dynamics of the video game industry?
A COMBINATION of various technologies, content strategies, narrative themes and literary techniques (such as hypertext) are employed in attempts to move the medium “forwards” a more narrative-rich story-driven medium of interactive cinema. The question subsequently becomes: are there any contributing factors within the video game industry that support this development? A repeating chain of events within the video game industry will be presented. This spiral sequence of repeating events describes specific consequences that contribute to the proliferation of the interactive cinema vision. There are seven distinct steps in this process:

1. Video game consoles are designed – Game console manufacturers introduce new game console generations every eight to ten years. This requires immensely expensive development of hardware and software technologies amounting to several billions of euro/dollars. These technological design solutions influence the rest of the industry in terms of business/economy, game development process/technology, and the video game medium itself. In many regards, the most influential video game medium development is done by game console manufacturers.

2. Game console manufacturers propagate their visions – Game console manufacturers invest billions in the development, manufacturing and marketing of game consoles to succeed in the video game market. They are simultaneously present on two markets: consumer and developer. The consumer market is subsidised and generates all the revenues, while the game developer market provides third-party titles for the console. The delicate and complex eco-system of game console economies is based on the symbiotic relationship between console manufacturers and third party developers/publishers. It can
be characterised as symbiotic, but definitely not symmetrical. The console manufacturers have to spread their “technological medium vision” to third party publishers/developers, since the commercial success of the platform is dependent on third-party title support. This propagation is accomplished through conventional marketing, PR and communication but also a certain level of strong-arming of (third party) game developers/publishers. Console manufacturers act as gatekeepers and enforce many technical, artistic and business-related conditions on third-party publishers/developers. For instance, when Sony introduced networking options to the PlayStation 2 console, third party developers were suddenly “interested”, i.e. demanded to include network options in all third party PS2 releases. Similarly, the Xbox was initially heavily touted as the “high-definition gaming platform” (i.e. included HDTV technology) and consequently all third party games were required to support this significantly higher display resolution level. There are countless other examples of how console manufacturers set the (techno-artistic) agenda for their vision of video game medium evolution. The meta-theme for this vision is predominantly based on the principle of ever-increasing photorealistic video game graphics in line with the interactive cinema project.

3. **Game console manufacturers establish their business/media/technology platforms** – The video game console is manufactured, distributed, marketed, sold and supported. A gigantic business cycle – a game console generation – is initiated in order to establish a successful game console platform. For every console generation market size, revenues and profits as a whole have increased significantly. The amount of financial and organizational resources that are mobilised by the console manufacturers, their publishing houses/in-house studios and third-party game publishers/developers is colossal. These ventures are immensely costly and risky, but also lucrative if executed correctly. The investment must be recouped as quickly as possible. Consequently, console manufacturers find the most receptive target market(s), usually the pioneering early adopters who spread the word to a larger audience of like-minded (yet less devoted) consumers. As has been extensively analysed in earlier chapters, console manufacturers have over several console generations discovered and re-discovered empirically that the most dedicated and susceptible group of gamers is the so-called “Nintendo generation”. Within this group hardcore gamers constitute the faithful core that understands, appreciates and extensively consumes video
game products. This group is extremely influential, reliant, quite sizeable and consequently also “bankable”. It has driven the industry since the early 1990s. For several console generations this market segment has been relied on/nurtured by the industry and evolved into a more advanced and esoteric hardcore subculture. With the success of the Playstation (early 1990s), the industry recognises that video gaming is becoming a lifestyle product that must be marketed similarly to other cultural products such as music and films – not as an electronic toy, or hi-tech consumer product. Despite “cool” cutting-edge lifestyle-oriented communication aesthetics, there is still extensive use of “high-technological marketing”, particularly at game consoles launches. As a result, the amounts of RAM, teraflops, CPU speeds, HDMI ports, display resolutions, sound channels, disc technologies and numerous other technological specifications are used extensively. Consequently, console manufacturers demand a high technological proficiency well beyond the average mainstream consumer, thus appealing even more to the technological competent hardcore gamer subculture.

4. **Game publishers select target audience and marketing strategies** – The console platform formats the game medium development with requirements, guidelines, platform marketing and technological specifications. In other words, the console manufacturers have already created boundaries for the relevant marketing space, which limits the possibilities of the game publishers. Third party publishers arrive in an arena with a selected audience, pre-defined sets of tools and expectations. There is room for (marketing) innovation, but usually the easiest and wisest option is to target the same audience as the console manufacturer. For every new console generation, increased technological complexity and larger development budgets, the selection of target group(s) becomes even more precarious as larger and larger investments are at stake.

5. **Game publishers invest in game development** – The most bankable target groups are identified and formatted by console manufacturers and publisher market research. Then more specific marketing strategies are developed. There is definitely a path-dependent mentality of “if it ain’t broke, don’t try to fix it” within the game industry. Why change a “winning concept” that has successfully been based on hardcore segments for several decades? It should be stressed that there are more nuances to the marketing strategies than merely the hardcore gamer. Within the video game industry, as in other cultural industries, an extremely popular strategy is genre-
Game publishers have established a limited handful of commercially successful, yet highly competitive, video game genres such as action, sport, racing, shooter/PS, RPG, family/children’s entertainment, strategy, adventure, fighting and others. Within these genres competition thrives yet the gameplay/aesthetic formalism remains extremely rigid to the point that competing (genre) games are confusingly similar – even in terms of marketing, branding and titles. The content/investment/portfolio strategies of game publishers can, somewhat exaggeratedly, be described as a game of Follow the leader or Simon says, where any successful game title gives rise to a torrent of sequels and plagiarising competitors – i.e. a “video game genre” is born. It could be argued, slightly cynically, that this is how all cultural genres (in literature, cinema, drama, painting etc) arise. The main difference, in the case of video games, is constituted by the unprecedented proliferation, intensity and speed of this process. Few other cultural industries, Hollywood or music industry included, can demonstrate such path dependent and persistent behaviour in terms of content strategies as the video game industry. After several iterations of the console generation life cycle a handful of video game genres have crystallised. They constitute the fundamental pillars of game industry-wide content and marketing strategies. With drastic rises in development budgets, these historical content strategy pillars become even more solidified since their raison d’être is reduced to the following decisive question: should we (the publisher) invest and risk even more money (double or triple previous console generation budgets) by publishing completely unknown game concepts, or should we invest in well-known, established but competitive genres that have been commercially successful for several console generations? The answer becomes obviously simple: with increased investment demands publisher cannot invest in riskier development projects as this substantially increases the risk level of the publisher’s entire product portfolio. Unlike console manufacturers, who act as “market makers” by charging a console fee for all game sales (thus making money regardless of who succeeds), publishers have a much smaller market share and consequently much riskier publishing portfolios. Only mega-giant game publishers such as Electronic Arts and Activison Blizzard have created broad market portfolios that span practically every commercially viable gaming platform in the world, than the dozen or so competing smaller publishers that focus on smaller market niches in order to be commercially competitive.
6. **Video game product reaches retail** – When the product finally arrives to retailers, target audiences and game medium have been shaped and formatted through several steps. A title must instantly “make it” at retail – usually between three to six months before it is removed from distribution channels (some mega-hit titles remain longer, sometimes ranging even up to several years). There are no second chances, *i.e.* other revenue sources, as other “media-type” cultural industries have managed to develop, as witnessed by the following quote:

> [T]here’s something wrong with this [the game industry’s] value chain. Now the game budgets aren't 40 million [Swedish] kronor, but 100 million kronor. There’s something… incredibly wrong with this business. I mean… who takes… how can you assume a risk of 100 million kronor when it’s do or die? When you make a movie, even if you bet 100 million on a movie and it flops catastrophically you can always sell as it pay-per-view, then you can sell as DVD and then you can sell it as video, and then you can sell it as commercial television, as in-flight entertainment. You can repackage and sell. A movie breaks even sooner or later. Because it has got so damn many sales windows. But when you bet 100 million on a game and it flops, what are you going to do with it? The trash bin for 19 kronor?

Former CEO of Swedish game publisher (2006-02-09)

The CEO stresses the existence of one “sales window” in the game industry, while the film industry has managed to develop several sales windows (pay-per-view, DVD, cable, etc.). The “mono-window sales” model remains intact while the development budgets continuously rise. As a logical consequence financial publishing risk rises since “the bets” *i.e.* development investments are becoming ever bigger.

7. **Market information feedback to industry** – Sales statistics provide an information feedback loop to the industry. Not surprisingly, what the industry discovers is the same as all other cultural industries see: demand is extremely uncertain. A vast majority of released video games titles do not make a profit (between 4% and 20% make a profit). Among these few profitable titles there are certain patterns. Firstly, those titles that become profitable are immensely profitable – the essential characteristic of hit-driven cultural industries, and in particular the video game industry. Secondly, the industry achieves its own self-fulfilling prophecy: statistics will show that the historical hardcore-based content strategy pillars (action, sport, racing, shooter/ FPS, RPG etc.) will generate most sales. The hardcore gamer genres constitute the bankable and lucrative target audience. This will not come as a surprise, since the entire industry spiral is shaped
to target this segment. This process delivers a fairly effective strategy for controlling and reducing the intrinsic risk of the uncertain market demand. The historical foundation for this process is the hardcore gamer segment.

8. Process is repeated – During a game console’s life cycle steps 4 through 7 are repeated for every published title. When a new game console is introduced the entire process from step 1 to 7 is repeated.

What this eight-step process describes is the general dynamics of the console-based game industry. It obviously does not fully describe the dynamics of the (formerly) competitive PC game platform, or other types of open platform such as mobile phones/Java games, Web/Flash games and others. As described in previous chapters these alternative platforms produce an unstable technology/business platform where the design process becomes more distributed and continuous instead of the life cycle oriented approach of the proprietary game console platforms. Nevertheless, the industrial development process of the PC platform is not much different from the aforementioned eight-step process, with the difference that every PC game industry stakeholder has its own industry spiral. These multiple evolution cycles become unsynchronised and produce technological and business instability.

What type of cultural industry consequences does the industry spiral give rise to? Does it contribute to innovation, wider content spectrum and popularisation of the medium in the marketplace and society as a whole? Or does it contribute to a process of radicalisation, dichotimisation and “subculturalisation” of an increasingly esoteric subculture of hardcore gamers? This decisive topic will be elaborated in the forthcoming chapters.
CREATIVE CONSERVATISM
– INNOVATION IN
THE VIDEO GAME INDUSTRY

The ramifications of the industry spiral are substantial. It generates a subcultural dichotomisation and codification of the medium causing extensive external alienation of audiences and society. To create a truly universal video game medium, internal innovation will have to break the spiral apart, or at least create competitive alternative spirals. Innovation that expands the boundaries of the medium redefines the type of possible content and explores new ways of communication. The industry spiral provides the opposite: a rigid and repetitive industry mechanism/process that organizes the development of technology, marketing/communication, target audiences, content and ultimately the medium itself according to uncritical visions for the video game medium.

This process does not create innovation, but rather a phenomenon that this study refers to as creative conservatism. It is characterised by a low level of creative innovation within content, gameplay mechanism, target audiences, marketing and overall vision of the medium, while simultaneously maintaining a fast-paced development of new content and cutting edge technology. The creative conservatism is an industrial paradox—a seemingly turbo-charged and dynamic industry that takes pride in “innovation” and continuously expands its size and produces a torrent of new products at a breath-taking pace, is guarded by an extremely cautious and conservative approach to innovation of the medium. For instance, creative conservatism produces literally hundreds of AAA titles based on an extremely rigid FPS (First Person Shooter) gameplay concept, while simultaneously producing an impressive range of visuals/graphics, environments, sounds, characters, stories, weapons, etc. The gameplay concepts, mechanisms, communication and medium remain virtually unchanged, while its visual and audial formatting undergoes a dramatically prolific multiplication and modification process.
Innovation in the video game industry is characterised by extreme innovation in the fields of game technology, visuals and to a certain extent business models (MMOGs e.g.), but only within the confines of a rigid and conservative form of marketing/commercial, genre and gameplay mechanisms. The industry spiral sets the conservative stage, provides the production tools, a limited gallery of themes, genre and characters – then it expects “creative innovation” within these boundaries. Somewhat pointedly it could be claimed that game medium innovation is caused despite the industry – not because of it. Game developers should be rewarded for their imaginative capacity to provide such numerous variations on the same handful of extremely rigid themes. However, taken as a whole, it cannot be claimed that the video game industry is driven by a broad and nurturing approach to creative and artistic innovation. To quote a (former) game publisher executive regarding the creative conservatism of the industry:

It [the industry] is so conservative. It’s not manifested traditionally, as people might believe. It’s sort of a very heterogeneous group that takes all the decisions. […] You should see them when they sit and you visit them. They just leave. “Get lost”. They don’t listen at all. It’s that type of conservatism… There is a laddish hardcore gamer mentality in some way.

Former CEO of Swedish game publisher (2006-02-09)

This quote effectively summarises many themes discussed and analysed by this study: creative conservatism, male dominated industry structure and hardcore gamer-based industry mechanisms (such as the “industry spiral”). The industry is governed by a certain type of conservatism, but not of the traditional type (i.e. in terms of social values), but rather in terms of industry mechanisms and path-dependence. The industry consists of “a very heterogeneous group” (i.e. male domination) characterised by a “laddish hardcore gamer mentality”, which is obstinate and almost arrogant in its reluctance to listen to new and external ideas. The industry establishment “knows” what the industry and its market need and is not interested in listening to external ideas from game developers.

CONSEQUENCES: ALIENATED AUDIENCE GROUPS

What are the most tangible and cultural/societal consequences of creative conservatism in the realm of the industry spiral? Historically, alienating and isolating effects on audiences have been extensive. The most tangible examples of this alienation process are constituted by the disproportionate lack of women gamers, senior gamers and emerging markets in the core
audience of the video game medium – these groups represent a majority and not a minority in society as a whole. Consequently the isolating effects are twofold: certain audience groups are marginalised and kept outside of the sphere of the medium, while the dominant hardcore gamer audience is detached from other audience groups which further contributes to the radicalisation of its internal dynamics. After several console generations the isolating and alienating effects have produced a global subculture that nurtures its own esoteric kind. The alienated “outsiders” have increasing difficulties understanding the complex and more subcultural codes, while the “insiders” demand a constant stream of ever more challenging and subcultural content, which further detaches them from the outsiders in a recursively spiralling cultural process.

The game industry is painfully aware of this and some progress has been achieved, with some rare cases of hit titles with these “alternative audiences” – primarily women and senior gamers. According to many (conforming) industry explanations, video games focusing on social interactions such as The Sims or certain MMOGs have gained popularity among women gamers, who in some rare cases have even become the dominating consumer category. However, unreliable market statistics make it challenging to conclude whether this is a question of isolated titles/events or the beginning of a larger industry trend towards a more balanced consumer and producer demographic. The industry acknowledges the problem but also believes in its own capability to swiftly solve the “problem”:

> If I would look, ignoring history, on the topic of “what area in the game industry is the most interesting to invest in?”, yes, then I would focus quite a lot on that area [women gamers]. Because I think it’s rather underdeveloped. There’s lack of innovation here, but I think many are looking in that direction, and especially after the success of The Sims there ought to be people that are digging in there. If you’re focused on a certain direction it’s very hard to just switch. […] Here I can say that there’s a small suboptimisation of this industry, where some innovations have been shunned. I can agree on that, but I also believe that this is something that will be corrected in the coming years.

CEO of major Swedish game developer (2006-03-03)

The CEO agrees that there is a certain “suboptimisation” within the game industry – it ignores innovation that targets women. Nevertheless, the CEO is quite optimistic and thinks the industry is “digging in” to this matter, without specifying how and in what way. A second interesting observation concerns innovation inertia of the industry – “it’s very hard to just switch”. This corroborates the hardcore gamer-based industry spiral outlined previ-
ously. It is challenging to change existing portfolios and marketing strategies and replace them with new ones.

The issue of women gamers is beyond the scope of this study due to the extensive breadth of this issue, with a wide range of theoretical frameworks and approaches to this subject. Most prominently, this topic has been analysed by Cassell and Jenkins in the seminal gender studies analysis of the video game medium and its industry (Cassell & Jenkins 1998). Other salient researchers in the cross-section of gender studies and video games, among many others, are Brenda Laurel and Celia Pearce. Laurel also attempted a practical approach by starting game developer Purple Moon in the 1990s which targeted young girls. It was not commercially successful and was later acquired by Mattel, the producer of Barbie dolls and also licensor of several successful Barbie-themed video game titles and online communities.

“The video game industry” is not solely responsible for the current and historically male-biased medium and industry. There are few other cultural industries that display a similar level of male-domination in production, and most importantly, in consumption. Indeed, many other cultural industries, such as film, are still after a century dominated by males in the production process – particularly the prestigious leading artistic roles of film or photography directing. Other cultural industries, for instance book publishing, are fairly gender-equal in production and definitely in consumption. However, most of these traditional cultural products are not dominated (excessively) by any gender in the consumption sphere. Although male-dominated in production, the film medium is rather gender-neutral: there are “gender genres” (stereotypically masculine action movies, or relationship “chick flick” dramas for women), but there are also significantly broader gender-neutral genres. The video game medium is male-orientated from its male-dominated industry structure, through marketing strategies that produce male-orientated content, to the technologically complex game hardware design (traditionally appealing to male target groups). Due to the technology-intensive nature of the medium and the historically male-dominated fields of technology/engineering (particularly computer and electronics) which further complicates a gender analysis, it is doubtful to hold the industry as solely accountable for the male-codified nature of video games. The game medium finds itself at an intersection of far greater societal gender discourses than simply the “militarised masculinity” discourse it has propagated through its content. Nevertheless, the industry has vastly contributed to the codification of the medium as masculine, and alienated women and many other important target groups. It will require gargantuan efforts by the industry to renegotiate and “re-codify” the medium and
transform its stereotypical masculinity to a more gender-neutral medium more in line with traditional media forms. The question is whether those efforts will manage to achieve this transformation.

Similarly, the industry has not managed to capture the minds and tastes of “senior gamers”, which in the game industry signifies anyone older than the “Nintendo generation”, i.e. born in the 1970s. There has been some progress, initially in Japan but also internationally with “brain training” video games that claim to stimulate and exercise gamers’ brains (senior gamers are assumed to care more about their brain health). Most prominently Nintendo’s Brain Age series, are essentially puzzle games based on Sudoku, crossword and calculation gameplay, and played predominantly on Nintendo DS handheld. However, a certain level of cautiousness is needed when analysing this particular target group. Is it possible to lure (substantially) senior gamer audiences, or is it easier to wait until the “Nintendo generation” becomes old? Perhaps the alienation of senior gamers is also contributed by the general cautiousness and discriminating tendencies of adult target audiences when it comes to cultural products. Nevertheless, the industry has played an important role in this process, by practically excluding all gamers above the age of 35–40, focusing instead on the hardcore gamer market. A market segment/genre referred to as “family games” targets the entire family implying a more collective gaming experience (parents and children together, while teenagers are entry-level hardcore gamers). Similarly to the tremendously successful output of the Disney Corporation and other “family-friendly” cultural industry producers, it is mainly family-oriented in terms of consumption patterns: parents buy but their children consume and constitute the real target audience. This content avoids all types of controversial and “harmful” content such as violence, explicit language, sex, excessive drama, provocative political themes or complicated narratives, while promoting “sound” moral values and generally a simple, positive and colourful worldview. This strategy has been carbon copied by the game industry creating most of its family-related titles on content/IPs from children’s films and books (more so than hardcore AAA titles). Consequently, family games are in reality an alternative marketing name for children games, and cannot be considered a serious attempt to directly lure older gamers.

A third large market audience excluded from the mainstream by the industry spiral mechanism is constituted by the developing/emerging world markets. These markets do not necessarily require dedicated genres as proven by the global music and film industries, but definitely need different marketing and pricing strategies. Simply put, the ever-increasing development costs of game consoles and game titles are not within the limited spending range of the average consumer in the developing/emerg-
ing market worlds. Gigantic investments in production, development and design of game consoles are passed on through the value chain and in the end paid by the consumer. Consequently, the prices for the average game end-consumer are increasing – game consoles are at launch prohibitively expensive (upwards of €599 for a Playstation 3 without essential accessories or games) and in particular the prices of video games, which have increased substantially with the arrival of the last (seventh) console generation (upwards of €60/game for a new title). Noteworthy is the fact that console manufacturers subsidise every console with as much as $300, further illustrating that the actual cost level is too steep even for markets in the west, not to mention emerging markets and developing nations. Taking into account the minimal tie ratio (games sales/console required to recoup the subsidy), the average video game consumer is expected to buy hardware and software for at least €1,000 before he/she starts generating profits. This corresponds to the equivalent of several average monthly salaries in most emerging markets, making it proportionally by far the most expensive mass-cultural industry in those markets. Suffice it to say, video games at this price level contribute heavily to the exclusion of emerging markets from the consumption and production of this medium. There might be cultural differences at play, where video games in certain markets are seen with completely different, and less favourable, eyes. Console manufacturers have responded fairly successfully by relaunching previous console generations as budget alternatives in emerging markets, as well as in western markets (during transitional bridging phases between console generations). The offering is attractive due to a low console price and a wide selection of video games (albeit old). However, emerging markets are not isolated from the trends and technologies of the west – they are painfully aware of the fact that “their” budget console is a secondary and outdated model.

The examples of emerging markets, women and senior gamers illustrate vividly how the industry spiral mechanism excludes and alienates vast segments of the video game market that actually constitute the majority of all gamers. The hardcore-based industry spiral mechanism has effectively solidified and radicalised the hardcore-gamer segment by continuously cultivating it with a constant stream of new content that appeals to its tastes. By means of this mechanism the hardcore segment has developed its own increasingly esoteric and extensive subculture with a highly specific aesthetic in terms of visuals, narratives, environments and gameplay and others. The increased “subculturisation” of the hardcore gamer market has resulted in video games that are more complex, harder to play (for novices) and challenging to understand in terms of overall aesthetical vision.
The hardcore-based creatively conservative industry spiral also affects societal perception of the game medium. It is frequently in society and mass-media seen as an anti-social, escapist, stereotypically masculine, violence-obsessed, aesthetically/culturally tasteless and narratively primitive medium. These opinions have contributed to the cultural codification of the video game medium as a “niche medium”, perhaps more suited for frivolous adolescent guys in the western world, rather than a truly universal medium with potentially the same (or bigger?) creative and societal impact as other media forms such as film or music. These are issues that are somewhat outside the scope of this study but are inevitably a vital component in the analysis of the video game industry.

While the “function” of the industry spiral is its audience stratification, its form is constituted by the “interactive cinema” vision. The industry spiral mechanism has been creatively and aesthetically enchanted by the “interactive cinema” spell. This study does not claim that there is a direct and causal relationship between aesthetics (such as the interactive cinema vision) and the hardcore gamer-based industry spiral audience stratification mechanism. The hardcore gamer audience is not exclusively based on interactive cinema games, as clearly evinced by sport games or racing games others that are not story-driven/cinematic in their gameplay. This study does, however, claim that interactive cinema acts as an aesthetic ideal that creatively organizes the content production within the realms of the industry spiral and creative conservatism. Interactive cinema creatively fuels the hardcore subcultural video game industry spiral. The lack of competing organizing visions for the industry spiral, and the lack of multiple industry spirals give rise to creative conservatism.

BUILDING THE CULTURAL CAPITAL OF VIDEO GAMES

Why is the video game industry chasing the interactive cinema vision? This study will claim that a highly contributing factor is constituted by (misguided) attempts to transform the video game medium from a low to a high culture form of art/medium. In the early years of the cinema, its artistic/media development adapted the forms of drama/theatre in order to detach itself from its roots as a technological gimmick shown at funfairs as a competitor to vaudeville performances. Video games are being similarly transformed into “non-linear narratives” of “interactive cinema” in order to align them artistically and aesthetically with the more artistic, upscale and “higher” art form of cinema. A “narrativisation” of the video game medium brings it closer to the significantly more prestigious narrative art forms of fiction, drama, film and others.
Outside the world of game studies and the (global) video game subculture, the game medium is often (though not always) perceived as a frivolous, childish, unproductive and ultimately unserious medium. Although a precarious claim (lacking empirical foundation), a high cultural perspective would consider a visit to the opera house as more “rewarding”, “intellectual”, “artistic” and “aesthetic” than playing a video game (regardless of genre or type), since video games are all about having “fun” and “play”. Video games are perhaps entertaining, but only acceptable if treated as an amusing distraction between “useful” activities such as reading a book, visiting a gallery or watching a documentary. By being essentially the contemporary low/trash/pop art form due to its highly visual, high paced, “interactive”, intertextual and digital/cross-media dimensions that position it at the forefront of the contemporary media landscape, it finds itself in a precarious situation: it might be interesting, even noteworthy, but few are respected for low culture production. The most famous examples of low culture (e.g. Roy Lichtenstein’s comics/art and others) achieved success not by virtue of its own artistic aesthetic, but rather by external elevation into the sphere of high art – perhaps as irony, provocation, conceptual challenge/reinterpretation or for any other reason. Nonetheless, these (rare) cases are rather low/pop art reinterpretations given a high art stamp of approval. Roy Lichtenstein, Andy Warhol and others base their success partially with their (then) provocative elevation of industrial, pop and low art into the domain of modern high art. Nobody remembers vaudeville artists, street painters, folk art, B movie actors or funfair entertainers – their production and art is consumed, enjoyed, even celebrated but quickly forgotten. The complex reasons behind these intricate processes are beyond the scope of this study since they can be given vastly extensive social and political interpretations of taste, value and aesthetics.

Nevertheless, this is exactly what the upper echelons of the video game industry want to achieve: upward mobility, artistic respect and recognition by society and particularly the high art community. Even the most distinguished and legendary video game designers such as Shigeru Miyamoto, Peter Molyneux and Hideo Kojima are regarded equally respectfully by the established creative/cultural class as pulp fiction or Harlequin writers or other pop/low culture forms – they are seen as competent artists in subcultural art forms, but hardly on equal terms with “high art”.

The current cultural position of the video game medium can be rewardingly seen from a Bourdieuan perspective. The prominent French sociologist and philosopher Pierre Bourdieu is best known for his theory of class distinction introduced with the seminal Distinction (Bourdieu 1989) focusing on the creation and dynamics of taste in society and particularly what types of relations and interactions the tastes of the upper and lower classes
have. His theories can rewardingly be applied to the distinction between low culture/pop art and high culture/fine arts. Bourdieu defines three types of capital that drive the social stratification processes in society: social, economic and cultural capital. Social capital value is located in the social networks between individuals. A “connected” person has higher social capital in hierarchies as part of “the establishment” – this is clearly evident in the case of (some) immigrants with high cultural capital and (occasionally) economic capital, but marginalised as lower classes in their new societies due to lack of social capital. The economic capital is constituted by material wealth, primarily money but also other material symbols/markers of taste such as furniture, cars, real estate and other popular consumer products. The most important type of capital when analysing taste is, according to Bourdieu, the cultural capital. This is the sum of knowledge, taste, experience and opinion that a person possesses regarding culture, and is in large part “inherited” i.e. created/educated during upbringing. Cultural capital can, under the right circumstances, be transformed into both social and economic capital. For instance, “fallen from grace” nobility, such as the Russian “White émigré”, that upon emigration very often managed to re-establish their high positions in foreign societies, as well as rebuilding new wealth. In Bourdieu’s view, over time, the social and economic capital primarily depend on the cultural capital, although it is possible to transform one capital into another, given certain conditions. A good example of this is the frequent practice of the nouveau riche to improve their cultural capital among the more established classes. Although this might be a successful “strategy” for upward mobility, it is impossible to completely “buy status” since the established classes have no interest in accepting this “transformation” – actually this is a derogatory stereotype of the nouveau riche as anxious and gaudy, lacking respect for social hierarchies, and believing that money can buy everything.

Applying this analytical framework to “the video games medium” requires, for the sake of this argument, defining the entire global video game industry as a “collective individual”. Of course there are huge differences between various developers, publishers, markets and countries: it is somewhat challenging to describe one personality. Nonetheless, it can highlight specific driving forces that motivate the adoption of the interactive cinema vision. In general, the video game industry can be assumed to have an impressive economic capital. The turnover, expansion rate, new hit sales records and billions of euro, dollars and yens that are flying around in this industry are proof enough that it is indeed a wealthy and prosperous young industry. It might be debatable on a macro-economical level if the global video game industry is indeed extremely profitable as a whole, or whether only a selected range of companies are absorbing huge profits that are
lost elsewhere in the industry (e.g. by the vast number of non-profitable titles, the legions of hard-working underpaid game developers or aspiring developers that work for free and inspire/directly develop the medium/industry).

The social capital of the industry might be described as “adequate” or “mediocre”. The video game industry has few prominent promoters/defenders in the upper echelons of society (e.g. politicians, cultural elites or influential VIPs of any kind), but is indeed heavily (financially) supported by the biggest corporations of the world (Sony and Microsoft), and many established cultural industry conglomerates cooperate with it. Furthermore, in the global game subcultural community some members of the industry (such as famous game developers) are regarded more reverently than most traditional elites – video game fan clubs and communities abound on the web. On the other hand the game industry/medium does not lack deriders and critics in mainstream society, predominantly focusing on the purported psychologically negative effects of the medium (appearing scrupulously in news media after every tragic high school shooting in the USA).

Finally, the cultural capital of the video game industry – it can be described as “esoteric” at best, or non-existent at worst. This study concludes that one of the main driving forces of “interactive cinema” and the narrativisation of the video game industry is the wish to improve its cultural capital by aligning the medium with the substantially culturally “richer” tradition of narratives. The issue of taste and aesthetics is extremely subjective (“de gustibus non est disputandum”), but throughout this study it has been outlined that in terms of aesthetical, conceptual and content thematical refinement the video game medium is still in an embryonic and highly youthful, i.e. immature, phase. The content is often, though not always, monothematically stereotypical and primitive in its artistic logic making it challenging to “capitalise” culturally on this type of undeveloped expression form. Paradoxically, within the increasingly esoteric video game subculture the aesthetics of the medium are lauded and celebrated like few others. The cultural capital within this subculture is, in certain cases of iconic video game titles, practically infinite. However, in a wider perspective the industry has non-existent cultural capital. Few game developers are even recognised by name in mainstream society, let alone by appearance. Their most famous mainstream incarnations, such as Hollywood films based on video game IPs, e.g. Lara Croft, are not creative milestones in film history, to put it mildly. The upper echelons of the video game industry are painfully aware of this artistic shortcoming.

There are several ways of improving this position. One is the creation of conferences, interest groups, industry associations, professional PR strate-
gies that promote a positive and more mature image. The industry has realised it will have to address society in a more organized and professional manner. As a result, the mainstream media perception of the video game medium is slowly transforming. A few years ago a radical shift was noted in the Swedish newspaper world when the two (and only) nationwide daily newspapers (*Dagens Nyheter* and *Svenska Dagbladet*) moved their video game coverage from the “techno-gadget” section in the Business segment to the more refined Arts/Culture segments where architecture, drama, film and other arts are discussed. Although not representative of the entire global society (or even Swedish) the symbolic significance was obvious: the video game medium is entering mainstream culture, albeit a low-brow pop techno-subculture. This is also explained by the coming of age of the Nintendo generation. Another way to improve the cultural capital of the video game industry is to develop the medium into new, and more broadly accepted, forms of expression. This claim is corroborated by a major study by the British Board of Film Classification (BBFC) (Dawson, Cragg, Taylor, & Toombs 2007) to “improve the understanding of what players enjoy about video games and to explain their preferences for particular games”, which came to the following conclusion:

In comparison with graphics, storylines – clear and compelling narrative progression – are less often mentioned amongst criteria for assessing games and seem relatively unimportant to many gamers. The tension and suspense in gaming usually arises from the immediate situation, rather from speculation about the ultimate resolution. With a few striking exceptions in this sample, notably among the professionals, it is a sense of progression through the game, as distinct from a strong linear storyline, that is appreciated.

(Dawson *et al.* 2007, p. 48)

The BBFC study is based on extensive interviews with both gamers and developers, and clearly supports the claims of this study: storylines are preferred by professionals (i.e. the industry) and are less relevant for gamers (i.e. the consumers). The interactive cinema vision is clearly a “top down discourse” maintained within the influential upper (AAA) spheres of the game developer community. Conceptualising the game medium as “narrative” has become the hallmark of “video game connoisseurs”. This discourse has also spread to video game media which often, in game reviews, adopt a similar perspective – video games as a storytelling medium thrive. “Non-narrative” video games are appreciated, but video games with an explicit story dimension are considered somehow more complex and sophisticated, as illustrated in the following quote from a review of the video game *Grand*
Theft Auto: Chinatown Wars (Rockstar Leeds/North 2009) for Nintendo DS in a major Swedish newspaper:

[...] The result is a big and entertaining game in miniature format extremely unsuitable for children. The fact that it can’t measure up to its big brothers [i.e. GTA console titles] is not due to technical limitations but faltering script work.

(Sundberg 2009)

The logic presented by the reviewer is evident: the game is mediocre due to its bad (interactive) narrative – particularly in comparison with its “big brothers”. Furthermore, the technological limitations (of the Nintendo DS handheld), which can barely display proper three-dimensional graphics, is not considered a limitation. Consequently, the reviewer’s concept of a “good” video game is independent of “technical limitations” and primarily driven by its “script”, i.e. the interactive narrative/storytelling. This dichotomy of game mechanics vs. narrative is elaborated by Wired’s video game journalist who when reviewing the FPS Gears of War 2 claims that:

[N]ormally, we assume that shoot’em-up games need a good story to help you “care about the gameplay.” Because shooters are extremely similar to each other in terms of mechanics – kill things, scrounge for ammo, go kill more things – they require a strong narrative to give the action some emotional payload.

We often say the same thing about role-playing games and other genres. The play is so generally similar from title to title – complete quests, level up, complete harder quests – that it is only the quality of the narratives that pulls you along. No story, no incentive to get to the end. Right? The story and characters give the play meaning.

Except, for me, Gears of War 2 worked in precisely the opposite way. The gameplay is so insanely superb that it imbued the narrative with meaning.

(Thompson 2009)

The dichotomy between “gameplay” and “narrative”, directly reflecting the main traits of the ludology vs narrativism polemic, are present in both quotes. Both reviewers assume that narratives give video games meaning as the dominant aesthetic dimension of the video game medium, eclipsing in importance the dimension of gameplay/game mechanics. These are merely two examples from a sea of reviews that use narrative/storytelling as the primary criterion for analysing video games.
By promoting and entrusting the interactive cinema as a visionary lode star the industry and its creative game developers have purportedly found a vehicle for ameliorating the low/pop/trash culture status of the video game medium into a more elevated high culture position on a par with film, literature or drama. Caught in the “industrial spiral” of creative conservatism, the industry has adapted the interactive cinema vision extensively. Some bright day in the future, the film industry will look up to the video game industry – and not the other way around (as currently). However, the question is whether the industry is capable of implementing this vision. As has been put forth several times by this study, it is highly doubtful whether this vision is obtainable from both a technological and literary perspective. Furthermore, when the industrial spiral together with creative conservatism constrains the alternatives – is there any room for genuine innovation of the medium? This study concludes that in the current state of the video game industry the most likely answer to that question is, unfortunately, no.

The lack of innovation indicates the need for diversity within the “industrial spiral dynamics” based on the hardcore subculture. There are, however, notable exceptions to this “console-centric” industry spiral. The “open” platforms of PC/Mac or web games (Flash/Java/other) represent a minority of the industry in terms of influence and revenue, but the great advantage of the these platforms is that their openness attracts innovation and experimentation to a greater extent (than game consoles). On the other hand, open platforms are influenced by a multitude of industry cycles/spirals: computer manufacturer, graphics card manufacturers, software platforms, which create technological/business instability and explain the decline of the PC in terms of revenues, market share and overall relevance. Similarly, alternative platforms such as handheld game consoles (Gameboy, Playstation Portable or Nintendo DS) provide slightly different industry spirals, although quite similar to game consoles. The most fundamental characteristic business/strategic difference is the significantly smaller market size. A second characteristic is its substantially more expensive purpose-made game storage format since established memory formats such as (CD, DVD, Blu-ray etc) are physically too big for the handheld/mobile format, and memory card formats (such as Secure Digital, Memory Stick etc) do not provide a satisfactory level of copy-protection and/or reproduction control. These additional costs absorb a substantial percentage of the profit margin (in 2009, possibly too late, Sony responded with the electronic distribution-based PS3go). From a publisher point of view, handheld game profit margins are lower than on consoles and thus not as attractive. Furthermore, the inevitable “convergence” of IT technologies
has created fierce competitors from the mobile phone industry, so-called smartphones, from Apple, Nokia, SonyEricsson and others. Handheld game consoles can thus be seen as part of the industry spiral mechanism, but on a smaller scale and with smaller budgets, slimmer profits and fewer game developers/publishers – the industry spiral is “tighter”.

The video game industry fiercely objects to the notions of “creative conservatism” and the “industry spiral” mechanism, by constantly describing itself as an extremely innovative and trendy industry that is perceptive to new trends and developments:

I still believe that there’s pretty much of that [innovation]. Just look at what Nintendo is doing now with the new Revolution [code name for the Wii console]. That feels extremely interesting. I believe in all of these party games such as Sing Star, Guitar Hero and Dance Mat and I believe very strongly in all of that. It’s like “yes, this is something new, and something outside, that we find in a new target group that’s expanding”. These are innovations that you can do at a low cost. You can actually do a Sing Star game fairly cheaply. There’s space to bring in innovation in new niches where it’s not that expensive [to develop].

CEO of major Swedish game developer (2006-03-03)

The executive points to a type of innovation introduced during the previous (sixth) video game console generation, predominantly within the genre of so-called “party games”. This video game genre grew significantly in importance during the previous console generation, although the genre has been around since the early stages of the commercial video game industry. It is characterised by two major properties: multiplayer gameplay (almost universal) and simple, almost transparent mini-games with gameplay mechanisms based on fairly basic rhythm and pattern activities. Others popular examples within the genre such as the Dance Dance Revolution series (referred to as Dance mat) require dancing on a special dance mat connected to the game console.

Many do not perceive this genre as “video games” but more like a type of “electronic party entertainment” due to the transparent and simplistic game mechanics. Most of the game mechanics are actually performed outside the game hardware by the movements/singing/guitar playing in front of the console. Another possible explanation is that it attracts totally new market segments to video gaming. These are market segments that have been alienated by the hardcore gamer-based industry spiral of creative conservatism and that found themselves outside the subculture until they “played” party video games. However, does the party video game genre provide an adequate platform for establishing new and influential target groups? Is this enough to break the hegemony of the existing industry
regime? The party game genre creates awareness and well-needed proof of the untapped and profitable market segments in the wider non-subcultural mainstream, but unfortunately it is a challenging tool for transforming the video game industry. The last thing the industry needs is to be associated with yet another purported “vice” such as partying (and indirectly alcohol consumption). The video game industry will not “party itself” out of the industry spiral. More fundamental and broader alternatives are needed to transform the dynamics of industry and medium.
**Wii-NDICATING THE ALTERNATIVE**

As an illustrative example of an alternative business strategy that embraces completely different visions of video gaming in terms of business, technology, marketing and the medium itself, the latest (2006), seventh, generation video game console Wii by Japanese video game company Nintendo will be analysed.

After losing the reigns of the industry in the early 1990s, first partially to Sega and then definitely to Sony with its two immensely successful generations of Playstations, Nintendo’s once dominant position declined to the point of being precarious. Never near bankruptcy or anything drastically similar, but questions regarding its presence in the console markets were raised several times during these years. Once the master of the global video game industry with a quasi-monopoly, it became simply just one among many contenders in the increasingly crowded and hardcore-focused industry. From the epitome of video gaming to an outdated has-been in a matter of years.

What Nintendo failed to realise, or more likely refused to accept, was that the most profitable market segments were no longer dominated by the children/family demographics. The ageing Nintendo generation hardcore gamers demanded significantly more “mature” content, and such a marketing refocus would alienate its original target group *i.e.* the “family market”. Sega partially understood this by allowing more bloody and controversial titles such as fighting games, which Nintendo refused to publish. Sony perfected this strategy when it started to expand the concept of “adult” content beyond violent genres into sport, racing and life-style oriented titles. Its reluctance to refocus its marketing strategies was primarily driven by path-dependence – nobody has outperformed Nintendo’s dominance in the children/family market. There might also be issues of cultural context – Nintendo’s vision of the game medium has always involved playful, childish, game-oriented and most importantly harmless content.

Nintendo of course has adapted to the ageing population. The threshold for what is considered “acceptable” levels of violence has been raised drastically with the evolution of the industry and medium/technology – a few
symbolical red pixels on a two-dimensional character were considered excessively gory. Today three-dimensional photorealistic splattering of blood and shredding of human body parts are considered fairly standard. This adaptation is illustrated by GoldenEye 007 (Rareware 1997) published by Nintendo, considered to be the first successful console FPS (previously only available on PCs), or the extremely successful Metroid Prime series (developed/published by Nintendo) whose gameplay contains a more adult and violence-oriented aesthetic. Although Nintendo's stubborn focus on the children/family market resulted in lost industry leadership and weak presence in the profitable hardcore gamer segments, it has also partially benefited from this persistent strategy. Nintendo has relentlessly emphasised the play and game, according to the developer legend Shigeru Miyamoto who, like no other, embodies Nintendo video game vision:

I want to create games that don’t fall into those strong stereotypes about videogames and instead I want to create games that others will instantly see primarily as a fun entertainment form to be enjoyed.

(Moledina 2004)

This foundation of fun, play, entertainment and game has been guiding Nintendo through good as well as bad times. After the mediocre performance of the Nintendo 64 (fifth generation), and the even poorer results of its GameCube successor, Nintendo found itself at a crossroads. Sega’s demise in the game console business during the sixth generation indicated that there was only room for three, or fewer, game consoles on the global market. Perhaps Sega’s transformation into a “pure publisher” was the way forward for Nintendo whose out of touch approach to video gaming proved to be uncompetitive in a marketplace with newly arrived cash-flush competitors such as Microsoft and its hardcore gamer-centric Xbox console. The GameCube was an attempt to provide a “cooler” and “edgier” console, but it failed to maintain the marketing width required to exist simultaneously in the children/family market as well as the more adult hardcore gamer market. Possibly against common business sense, which would recommend divesting its console business, Nintendo decided to make one final attempt to regain its former industry leadership.

Refusing to adapt to the hardcore gamer-based industry spiral of creative conservatism, it decided to gamble by maintaining its original game medium vision: play, fun, game and simplicity/ transparency. While everyone, including Sony and Microsoft, was busy capturing the hardcore, Nintendo decided to do the opposite. While its competitors such as Sony and in particular Microsoft, were eagerly preparing the seventh console generation by following the industry spiral and investing billions of dollars in
next generation technologies of even more photorealistic and cinematic computer graphics, Nintendo pursued an alternative strategy. Possibly due to its weak financial position (after the GameCube debacle) it did not join the remaining console manufacturers’ “technological investment race to the bottom”, and instead invested in its own alternative, and less capital-intensive, vision of the medium under the project name of Revolution (indicating its ambitions). The result was the Wii console whose name stressed the communal “we” i.e. everyone (and not the hardcore gamers). According to Nintendo of America’s chief operating officer, the Wii was designed with a completely different target group in mind than the remaining console competitors:

Our focus is interactive game play, a whole new way to play, that puts fun back into this business. It allows everybody to pick up and play and isn’t focused on the core gamer.

(Acohido 2006)

Technologically the Wii was not particularly “revolutionary” as its graphics rendering capacity was slightly better than the sixth console generation, several times slower than Xbox 360 and particularly the parallel computing technology masterpiece Playstation 3. However, in terms of user interface the Wii indeed provided a revolution. Instead of the conventional game controller it was equipped with the Wii Remote – a motion-sensing wireless remote supporting interaction by means of pointing and moving the remote in front of the console. Attachment to the remote, such as the analogue stick-based Nunchuck, Wii Fit (a balance board), Wii Wheel or, Wii Zapper (a gun-shaped remote) further extended the possibilities for new ways of interacting with video games. These technological design decisions went against all conventional strategic thinking in the game console industry. Some voices were raised whether it had gone too far in its decidedly low budget “revolution”. Nintendo repeated that its intention was to broaden video gaming to the mainstream and to embrace the target groups left behind (women, seniors, etc.) by the hardcore gamer obsessed industry. Furthermore, the Wii was not meant to become a “digital hub of home of media convergence”, but focused squarely on video gaming and nothing else. Unlike the competitors (X360 and PS3) Nintendo chose not to integrate hard drives in their console designs, next-generation media storage formats (Blu-ray or HD-DVD) or other expensive technologies such as “media server” capabilities. The Wii console was initially even released without fundamental multimedia functionality of DVD playback capability. Nintendo’s strategy was to provide a back-to-game-basics device that appealed to new, less tech-savvy, target groups that were not necessarily
interested in complex media convergence features. Nintendo widened the market scope by paradoxically narrowing its technological capacity, instead providing innovative input devices and new visions for the game medium.

The result of the innovative and “experimental” Wii project was beyond expectations and fully in line with Nintendo’s view of the game medium and its future. The console proved to be more competitive than the competition ever anticipated. Wii was indeed embraced by new target groups (“seniors”, women and other conventional non-gamer target groups) which led to a surge in sales. In September 2007 Wii’s cumulative sales overtook those of the X360 making it the best-selling (seventh generation) console in the market despite being on the market one year less than than Microsoft’s offering (Sanchanta 2007). Sony’s PS3 was introduced with massive production and logistics difficulties which together with its prohibitively expensive price-point resulted in an almost disastrous launch. With time the former champion Sony juggernaut picked up sales, reduced production and subvention costs and has on occasions even outsold the Wii in Japan in certain months. However, question remains whether the PS3, and particularly the X360, will ever match the simplistic, cost-efficient and mainstream-oriented approach of the Wii. Simply put, the Wii console represents a different approach to video gaming that the competition cannot imitate. With its innovative approach Nintendo has redefined what video gaming is all about and where the medium is heading, much to the concern of the more traditional hardcore oriented game industry constituents.

Wii’s runaway success once again proved that Nintendo is indeed the old experienced mastermind of the industry, outsmarting younger, and financially stronger, competitors. Five years into the seventh console generation, the Wii console has somewhat unexpectedly become the market leader, and a guiding vision for the entire industry. This impressive turnaround by Nintendo is, however, not without caveats. Nintendo needs to update the console technologically sooner than the competition due to its shorter console life cycle and inferior hardware. Its “6.5 generation” technology cannot compete with the seventh generation. The average console life cycle during the last console generations has almost been a decade. The PS3 and X360 are expected to last for at least a decade (i.e. 2016 and beyond). By that point the Wii’s early-2000s-technology will be painfully outdated, and a new console upgrade will be required. Furthermore, Nintendo’s innovative approach to new input technologies and a broader range of target groups has been successful during this console generation, but is this possibly a “one-trick pony” that has captured a new expansion of the market but is unable to expand it further? How will Nintendo continue the expansion of the medium to broader demographics and break it free from the hardcore-based industry spiral of creative conservatism?
The case of the Wii console perfectly illustrates that the industry finds itself at a crossroads where it needs to determine what type of medium and industry it wants to accomplish. It can continue down the familiar path of nurturing and evolving the hardcore and its aesthetical inferiority complex towards the cinema medium, or it can attempt to venture out into the unknown and develop new and exciting forms of expression that will potentially redefine what the game medium is all about and establish it as one of the truly most revolutionary media forms ever conceived.

**TWO CONTRASTING ARTISTIC VISIONS OF THE VIDEO GAME MEDIUM**

To elaborate this dilemma, two contrasting and concrete visions will be compared. The difference in approach and guiding vision to developing the video game medium could not be bigger between the two legendary Japanese game developers Shigeru Miyamoto and Hideo Kojima. Occasionally referred to as “the father of modern video games” Miyamoto is the creator of the seminal Mario video game character and has designed and produced dozens of innovative hit-selling video games for Nintendo whose successes can be mostly attributed to his creative genius. Kojima, on the other hand, is the creator of the extremely successful *Metal Gear Solid* (MGS) series with Japanese video game developer/publisher Konami. The MGS series virtually created the popular video game genre of *stealth games*. One of the most prominent hallmarks of Hideo Kojima’s work is its extremely story-driven gameplay format that makes no attempt whatsoever to hide its cinematic and action movie-inspired narrative, dialogues and visual dynamics imported from Hollywood action blockbusters. Kojima’s video games are cinematic in aesthetics and in production – probably some of the most interactive cinema-styled titles currently available in the global video game market. Kojima writes extensive narrative scripts with multiple/forking endings, extensive list of characters, dramatic twist and turns. The latest installation of the MGS series, *MGS4*, was rumoured to have a development budget of $50 million USD and contains many hours of FMVs and tens of hours of recorded dialogue. The beginning of MGS4 contains an almost thirty minute long FMV sequence (Kohler 2008b). Kojima generally envisions the future of video gaming as interactive storytelling – a proposition he extensively propagates in the game developer community and in mainstream video game media.

In direct contrast stands the production of Miyamoto who has always maintained Nintendo’s focus on play and youth/children. His vision of the medium is based on *play, games* and feelings of *entertainment*. Time and again he has shown that his vision is viable regardless of platform and
technology. When entering the three-dimensional graphics era Miyamoto created Super Mario 64 in 1996 – one of the most lauded and respected three-dimensional games of its era and still competitive today despite its outdated graphics. The Super Mario 64 title proved that Miyamoto’s vision could be translated from “simple” two-dimensions into the three-dimensional format. Although his most prominent video game series of Mario and Zelda are set in (primitive) narrative backdrops, Miyamoto’s production is never driven by storytelling or cinematic “remediation”. The impressive wide range of Miyamoto’s artistic output is challenging to summarise in a few sentences due to its diversity, but they can most definitely be characterised as being based on vision of play, experience and mechanism-driven gameplay. The “narratives” of Miyamoto’s games are ornamental at best, or childishly primitive at worst – the focus is without doubt on the gameplay.

Both of these influential game developers represent extremely contrasting visions of what the medium is all about. Kojima entrusts storytelling as its fundamental driver, Miyamoto believes in playing games. Miyamoto’s work could be criticised for being too childish and cartoonish, but Kojima’s Hollywood-style narratives could equally be accused of being on the same artistic level of a second-rate low budget television action series, complete with stereotypically shallow characters that engage in meaningless and numerous badly-paced soap opera-like dramatic turns. Disagreements about matters of taste cannot be objectively resolved, but in comparison with any (similar) film, Kojima’s work can be regarded as an unintentional and catastrophically executed pastiche of spy, action and conspiracy films. As has been concluded on several occasions previously, “interactive cinema”/Mgs-series, are in essence nothing but animated hypertext novels with “gameplay interludes”, albeit complex and visually stunning. The question is then whether Kojima’s “interactive narrative” quality is “artistically inferior” (in comparison with more traditional narrative media) due to the a) author, b) limitations of the medium, or c) a combination of both? Narrativists would naturally claim that Kojima is to blame for the narrative failure of his works – not the medium. Kojima’s stumbling attempts are only the beginning of the game medium’s inevitable evolution towards a world of interactive narratives. A ludological interpretation would claim the opposite – that Kojima’s work only elucidates the theoretical and practical shortcomings associated with attempts to “narrativise” the game medium. They would object to the use of the game medium for this type of “remediation” and propose something else i.e. simulation of experiences.

Miyamot is quoted as saying that many of his game designs are inspired by experiences during his childhood. For instance, when designing the legendary video game series The Legend of Zelda, Miyamoto wanted to
create a “miniature garden that they [gamers] can put inside their drawer” which was inspired by his upbringing in Kyoto’s surrounding nature (Vestal, O’Neill, & Shoemaker 2000). Miyamoto’s reference to the “exploration” of a “miniature garden” implies a simulative rather than a representational approach – he wants to convey the fascinating feeling of exploring nature by creating a “miniature” that gamers can use on their own, i.e. a video game that simulates the experience of nature exploration. A “narrative” does not drive this simulation, although his memories of childhood might, quite exaggeratedly, be considered “narratives” from his youth that are being transmitted through the game mechanisms. Criticism of Miyamoto’s game medium vision might be its limited significance compared to more “meaningful” narratives – what is the meaning of a game that simulates one man’s vision of forest exploration? Great art sheds innovative light on issues that affect people. If the game medium wants to achieve similar status it needs to achieve more than “entertainment”, according to critics. This argumentation ties into the overall (moralising) public opinion that positions the game medium as a low/trash/pop culture phenomenon due to its “frivolous” nature as “unserious” and “unproductive”.

The Wii, and Miyamoto’s vision of video gaming illustrate how there are indeed influential alternatives to the hardcore gamer-based industry spiral of creative conservatism and its limited range of mono-thematical esoteric subcultural content. Furthermore, by not over-investing in the console technological rat race the Wii has been cheaper in design and production, thus not requiring subsidising and decreasing significantly Nintendo’s risk. In other words, the Wii is successful both in terms of medium/content innovation as well as industrial/production economics. The Wii truly vindicates that alternative industry logic can exist successfully commercially and artistically in the today’s industry context.

**EMBRACING THE MAINSTREAM**

However, is Nintendo’s vision of video game medium enough to transform the entire industry? In 2009 sales of the Wii fell drastically and industry analysts are asking whether the peak of the “Wii boom” has passed, and if its groundbreaking market expansion is sustainable in the future (Suzuki 2009). Perhaps the Wii is no industry panacea, and a more comprehensive array of solutions is needed? There is an increased industrial awareness of the dysfunctional hardcore gamer-based industry logic and various industry strategic solutions have been proposed. The industry is frantically searching for alternative and some of the most prominent industry solutions proposed are:
• Casual games
• Serious games
• Online/digital distribution games
• Episodic games

and a number of other solutions.

Casual games have been analysed extensively earlier with the conclusion that the term is (currently) void of any stringent and analytical meaning. The term is used as an umbrella concept to refer to video games that appeal to “everyone else” besides the hardcore gamer audiences. Although the link between frequency/pattern of gaming and hardcore gaming is somewhat unclear, it is often claimed that the casual gaming term refers to a more sporadic and relaxed type of gaming, as opposed to the intensive and long hardcore gaming experience. The concept raises awareness of the hardcore-based marketing strategies that still permeates large segments of the industry. Since the end of the sixth video game console generation the industry has been publicly debating the need for a new marketing/content paradigm that can replace the successful, but purportedly outdated, hardcore gamer marketing focus. With the advent of the Wii, its success is somehow seen as a vindication of the casual gaming perspective, since it has attracted new types of gamers with radically different gaming patterns.

Despite claims that the hardcore gamer-based era is over, every global game console manufacturer or publisher still relies heavily on this type of content/market strategies. This also includes the Wii, that despite its market-broadening and family-friendly image still provides all the major hardcore-focused genres of sport, FPS, racing, RPG and others. In some regards the Wii can potentially even increase the appeal for hardcore-gaming since the innovative game controllers provide yet another way to maintain interest in mono-thematical video game content such as FPS, racing games and other type of hardcore-centric genres. Although the strictest segments of the hardcore gamer community publicly shun the Wii, Nintendo has not entirely shut the door. Hardcore gaming is, and will remain for a long time, a strong foundation for all types of successful video game business.

Similarly serious games lack any stringent definitions except a wish to distance themselves from what they perceive as the most salient obstacle from mainstream adoption: play/frivolity or “unproductivity” of conventional games. By replacing the thematic foundation of “playful” video games with “serious” topics and contexts, their proponents hope that they can successfully target other audiences and redefine the acceptance of video games by mainstream society.
Online/network games have been analysed extensively earlier. By replacing the burdensome physical distribution channels with a significantly cheaper, faster and more practical network distribution model, the game medium and the industry would radically transform itself. A total reshuffle of the structure, dynamics and business model of the video game industry would ensue. As shown, this scenario is possible, and to some extent embryonic attempts exist in today’s marketplace (online services of game consoles). On the PC a segment of online platform/aggregators have been established (such as WildTangent, Direct2Drive, GamersGate, GameTap, RealArcade and others). However, a crushing majority of industry revenues are generated by the traditional physical distribution format. The issue at hand is not technological or economical – it is a purely business/political decision since an adoption of would radically reshuffle industry structures, and also eliminate many (profitable) and influential industry segments. The adoption of (comprehensive) online/electronic distribution is not a question of if, but rather a question of when. It will inevitably become reality within one console generation, at most two.

Perhaps pioneering companies such as OnLive have shown the future of the console industry. The company provides a service that stores the video game software on servers, and then streams via the Internet the graphics to PCs, Macs or to very small and cheap terminals called OnLive Micro-Consoles connected to a television set/monitor. All the hardware processing, calculations and real-time rendering of graphics is done by OnLine's Internet-connected servers. Practically all the hardware/software technology is taken care of by OnLine which becomes a “turnkey service” provider directly to end-consumers. By (hopefully) offering attractive game titles, OnLine will provide a gaming experience that will combine the ease of use of the console with the benefits of electronic distribution, and at a substantially lower price. Furthermore, the OnLine service will be platform-independent and can easily be ported to other hardware platforms. However, since the issue of digitally distributed video games is predominantly a political one, the success of OnLive’s service will also be decided by industry political actions. Without the full commercial and production backing of a major global video game publisher the platform will be become marginally influential. If the OnLive platform creates a threat to the major game consoles, the manufacturers will restrict their attractive AAA blockbuster hits to their own platforms.

Another type of “online gaming” touted as an alternative to the hardcore-based content paradigm is the “genre” of MMOGs (Massive Multiplayer Online Games). These are “virtual worlds” where gamers meet, interact and play against each other on servers provided by the game developer/publishers. Consequently, MMOGs can be considered a “service” equally as
much as “product”. They represent a radical departure from the traditional single-player off-line video game paradigm, and completely new dimensions to production, design, gameplay aesthetics, social dynamics, business models, and maintenance. This gives rise to countless fascinating sociological, identity, psychological, anthropological, ethnographical, communicational, economic and other issues, which have been and are continuously and extensively studied by numerous researchers within the broad field of game studies. In terms of business, marketing strategy and industrial/medium dynamics MMOGs present a diverse range of challenges and possibilities. Extremely successful MMOGs such as World of Warcraft and others have mainly tapped into the traditional hardcore subcultural spheres of fantasy, rpg, science-fiction and action themes. The social dimension of MMOGs can be used to create online communities with tremendous potential for marketing, branding and customer relationship building. Extra features, upgrades/episodes/expansion packs, and other high margin services can be sold directly to end-consumers. This type of innovation is present in the current online game industry, but has not by far been fully explored and capitalised – particularly among the non-hardcore audiences. Ingenious marketing/commercial combinations such as the SingStore which combines an online music store with the extremely successful SingStar party games series, provides clues of how online services in the future can be combined with mainstream-oriented “casual games”. Online gaming indeed provides new potential for expanding and redefining the medium, reaching out to new target groups, but is only a technological tool in the hands of the industry.

Another category of video games with “future potential” is the so-called episodic game genre. It has been proposed since the mid-1990s as a new type of content/technological/marketing solution to many of the problems with game industry business models. On paper, the episodic game concept is ingenious in its simplicity as it comprehensively addresses most of the critical aspects with the contemporary industry. However, episodic content is yet to prove itself commercially on a wider scale since there are a number of limitations to the concept:

I thought a lot about episodic games. But those are still… I guess… You bet on a game engine to create this story and then you release a lot of mini-stories. And then you sort of kill the story. But you can use it to make more with a different world, in different eras or whatever. Different speeds, different heroes, different characters and stuff like that. But then comes the obvious question: when do you end an episodic game? If you have 100 000 [gamers] that like it? Do you turn it off after three years [laughter]? Then the loyal fans, the hardcore,
turn up and limit that. Sure, I like it as hell, but it is only 10% of them [hardcore fans] that like it. Should we kill it then, or…? The risk doesn’t disappear…

Former CEO of Swedish game publisher (2006-02-09)

Episodic video games lack a common definition but generally refer to series of smaller video game *episodes* interlinked by common gameplay/storyline or themed elements. This division has consequences for practically all aspects of video gaming: development/production, consumption, business model/industrial economy, and gameplay aesthetics (Kraft & Kwak 2006).

In terms of production/industrial economy episodic games have the fundamental difference of the “platform dimension”. The added complexity with episodic video games is the need to predict, design and implement a game engine/software system that takes into account the fragmented and chapter-like nature of episodic video games. This requires a meticulously systematic separation of function and form – each episode only adds new event scripts, some characters and environments while fundamental software functions are hidden in the platform. The benefit of the episodic game platform is that its development cost is supposed to be divided between every episode of the forthcoming episode series. In terms of consumption episodic video games also require a transformation. Gamers/consumers must adapt to smaller video games. Every episode must also logically and gameplay-wise be interconnected to the preceding and succeeding episodes. Consequently, publishers must convince gamers to buy/subscribe to new episodes (“pay-per-episode” or subscription form as with MMOGs). This can create radically new consumption patterns and like game consoles, the “video game platform” can be subsidised/free, in order to increase the consumer demand. The challenge of maintaining a high level of interest during the series is similar to books, film, magazines and primarily television series. The classic solution is to rely on the old narrative plot device of “cliffhanger endings” where the resolution is conveniently located in the next episode(s). Consequently, many episodic games subscribe to the narrativist perspective of games as storytelling medium, since linear narratives can be practically episodised and turned into cohesive interlinked stories with exciting cliffhangers. The general disadvantages are as quoted: the risk does not disappear because it is divided into episodes. The financial risk remains the same (or even higher), but it can be limited and somewhat controlled due to the incremental episode cost structure. However, the development cost of an episode game engine is similar to a conventional video game, or even higher due to added technological design complexity.

Distributing episodic video games through conventional physical channels
is not an option, at least not on video game consoles, since every episode requires a new production deal. Consequently, proponents of episodic video games aim solve this issue by means of electronic distribution models, which reduce distribution/reproduction costs to practically zero and then create a direct communication/marketing channel with the end-consumer. This all works in theory, but the two steps of a) changing end-consumer patterns b) switching to a electronic distribution platform and all of the business political issues it entails, has proven to be too great a challenge for the video game industry to successfully implement. In theory episodic video games will target many of the current industry’s toughest challenges: expanding mainstream target groups, lowering the ever-increasing financial development risk, changing consumer patterns more in line with smaller and less time-consuming “casual games”, lowering prices and increasing consumer appeal, adding incentives for additional purchases (the “serial-addiction" effect of all episodic media, especially television), creating a direct communication/marketing relationship with end-consumers, omit the costly and inconvenient physical distribution format – basically reinventing video gaming to become a more profitable, less risky and broader mainstream medium.

In some regards the notion of episodic gaming overlaps on game upgrades based on so-called “extension packs” which require a previous game copy thus functioning identically to an episodic video game. For instance, the extremely successful MMoG World of Warcraft (wow) (Blizzard Entertainment 2004) has as of yet (2009) been extended with two expansion packs: World of Warcraft: The Burning Crusade (Blizzard Entertainment 2007a) and World of Warcraft: Wrath of the Lich King (Blizzard Entertainment 2008a). They have been immensely successful and have both broken records for fastest selling video game ever with 2.4 million and 2.8 million copies respectively in their first 24 hours (Blizzard Entertainment 2008b). The publisher/developer Blizzard has enjoyed all the benefits of the episodic format: cheaper production, higher margins and a “bandwagon marketing effect”/serial effect. They have been substantially more profitable since practically only new content (much cheaper in production), not game engine technologies, was developed. Marketing-wise they rode the wave of their earlier successes, with a huge installed customer base. However, the fundamental ex ante gameplay logic of these extension packs are not episodic. Both were primarily distributed with physical distribution channels. These packs are “proto-episodic” games where expansion packs cleverly extend the commercial success of a MMoG – not an evolving episodic gameplay structure. However, it clearly demonstrates the fantastic profits and risk-limited effects of the episodic game model and where the industry might evolve.
NEW MEDIA DYNAMICS
AND FUTURE
OF VIDEO GAMING

The final part in this study has argued for new guiding visions for the game medium and industry — technologies, strategies, marketing or genres — the industry urgently needs renewal for its own survival. This last argument — survival — might seem a bit exaggerated considering the immense revenues, turn-over and profits generated currently. Why change a winning concept? Could the video game industry ever fail and start shrinking in size and popularity?

These doubts are more than justified. The industry will inevitably sooner or later stop its impressive growth within the traditional hardcore segments — question is whether the alarming industry decline of 2009 is the first sign of this implosion? The evolution of the industry has hitherto been based on two expansion fronts: 1) the actual hardcore gamer subculture has grown in established markets 2) geographical expansion into new markets (partially by selling previous console generations). The question is if this growth has not already reached its apex in terms of expansion. Although not backed up by any reliable industry statistics the current expansion of the video game market is probably achieved by the acquisition of new target groups and particularly by the innovative Wii console. The hardcore does not provide the same impressive ultra-growth as it has successfully done and has most likely concluded. The industry is painfully aware of this fact and as a consequence launches a handful of measures/strategies as described. The question is whether these measures are adequate to continue the growth of the industry in order to redefine the medium and position it as a truly mainstream cultural industry medium in line with cinema, music or books.

The game industry finds itself at an industrial, business, organizational, and most importantly artistic/medium crossroads. All of these aspects are intrinsically interlinked — the guiding vision(s) of the medium affect(s) the industry, organization, communication, creativity and business models.
By selecting a particular vision the industry chooses a specific path which advances certain media aesthetics together with the elevation of specific industrial, marketing and communicational (i.e. target groups) strategies. By doing so it also excludes as many aspects as it includes. Thus far the selected industry path has excluded and alienated the majority of society, while elevated certain aesthetics and target groups that are in stark minority to the rest of society and artistic/creative possibilities. Alternatives must be found.

CASE OF SUBCULTURAL MEDIA EVOLUTION: THE COMICS MEDIUM

Many would claim that the medium and industry will sort themselves out and establish themselves as a truly universal mediums for every person and aesthetic. This study does not subscribe to this deterministic perspective. The current condition of medium/industry is substantially more precarious than most would acknowledge and as an illustration the two cases of comics and film will be discussed. Both are in comparison with other (narrative) media fairly young forms. Both have also experienced an evolution from gimmicky funfair-type of novelty to a more established mass-medium. This process has been going on for several decades, but the difference is that one, film, has evolved into a high culture form while the other, comics, has not. The complex mechanisms behind this diverging development trajectory are far beyond the scope of this study. However, some aspects in common with the game industry will be analysed in order to provide historical clues as to why certain cultural industries develop along certain paths and others evolve along completely different ones. The purpose is to outline a simple “event tree” of possible evolution paths for the game medium and industry.

A prominent example of the “wrong path” is the case of the comics medium. The combination of text and illustration is not new, but through initial steps as part of newspapers, the medium slowly evolved in terms of aesthetics and formatting until it could finally stand on its own feet in the 1930s. The medium blossomed over the following decades and took a sizeable share of the increasingly diverse mass-media landscape that arose after the World War II with the mainstream arrival of the television medium. The comics medium initially experienced exploration of aesthetics, formatting, genres, themes and most importantly audiences and target groups. What followed was a gradual process of framing the modern comics-medium into the prevailing form that still dominates to this day. The comics medium came to be dominated by themes of violence, masculinity, super-heroes, epic/mythical legends/settings, polarised confron-
tations between good and evil, science-fiction, fantasy and other themes that are eerily similar to those described previously in the context of the contemporary game medium. Furthermore, the comics medium targeted children and young people, predominantly males. The comics medium also maintained its original format with humorous content as a “comic-strip” in the daily newspaper where it evolved into an effective and widely respected (even among high cultural elites) tool for satire and ridicule particularly in the fields of political journalism. However, this position as an ironic commentator of current affairs is highly rigid.

The parallels between the early development stages of the comics medium and the game medium are eerily and strikingly similar. The comics medium represented a unique opportunity to create a new mass-medium with a fascinating fusion of illustrations and the written word – a new way of expressing narratives through the written word combined with illustrations in ways previously not available in the domain of fiction books. The combination has existed for thousands of years starting with wall-paintings in Ancient Egypt through the illuminated manuscripts of the Medieval ages. What the comics medium did, and particularly during its pioneering breakthrough era, was to establish a convention/protocol/semiotic grammar for its graphical communication that consisted of various visual techniques such as speech balloons, jump cuts and similar. The basic components and dimensions did not constitute the innovation itself, but rather its combination, framing, standardisation and formatting which in addition to (print) technological innovation resulted in its (commercial) breakthrough.

The uncertain aspect of audiences always challenges a new medium: who are they? A new medium rarely arises with a clear target audience in mind. Its creation is the result of various circumstances and many coincidences – its audiences are defined almost as an afterthought. The independent comics medium was not the result of careful surveys of target audiences, but rather a consequence of various creative, commercial, technological and coincidental factors. The comics medium’s breakthrough is eerily similar to the game medium: lacking a clear target audience it found a lucrative haven in the least discriminative and receptive of all audiences: children/youth. Unlike “serious” adults with their rigid and formal forms of cultural expression consumption, young people appreciated and fully embraced the fascinating new dimensions of this new medium. What is even more astonishing is the similarity in terms of development of target audiences, marketing strategies, contents strategies and medium aesthetics. After children and youth the industry moved on to young males and upon success “aged with its target audience”. The comics medium adapted
its content to adolescent boys and young males. The analogy to the “Nintendo generation”/hardcore-gamer mechanisms is obvious.

The captivating book *The Ten-Cent Plague: The Great Comic-Book Scare and How It Changed America* by David Hajdu (2008) provides an account of the early development stages of the pop cultural media form of the comic-book, and the subsequent investigation and inquiry it was subjected to by the US Senate in the early 1950s. The main concern of certain political formations at the time was the purported causal link between comic-books and juvenile delinquency. The book outlines the “cultural war” between certain politicians of the era, and the extremely popular and young comic-book medium, which at the time was selling at a rate of 100 million copies a week on 650 titles a month by 20 publishers (Menand 2008).

Hajdu describes how the content of the comic-book medium was according to its critics dominated by “scenes of horror, excessive bloodshed, gory or gruesome crimes, depravity, lust, sadism, masochism” and their investigation attempted to create laws and codes that regulated this type of content, but also the representation of females and romantic relationships where “females shall be drawn realistically without exaggeration of any physical qualities” and “the treatment of love-romance stories shall emphasize the value of the home and the sanctity of marriage.” The US Senate hearings led to the creation of the Comics Code which was regulated by the Comics Code Authority, a body created by the *Comics Magazine Association of America (CMAA)* in response to the political investigations. It acted as *de facto* enforcer of the Comics Code although it had no legal authority to do so. The Comics Code was continuously updated (most recently in 1989) and its influence only diminished as late as the turn of the century. To this day one of the largest comics publishers in the US, *DC Comics* owned by the media conglomerate *Time Warner*, still adheres to the Comics Code to some extent.

As a result the evolution of the comics medium has throughout its history been characterised by regulation and censorship. Together with the young male-oriented marketing/content/communication strategies the comics medium has evolved into an esoteric subculture that thrives in its own hermetically closed universe of specific aesthetics, themes, conventions and narratives. The values of this subcultural universe are difficult to interpret and comprehend for outsiders, which leads to alienation and further strengthening of the inner core of the comics subculture. The dynamics of these mechanisms have been extensively described previously, but in the context of video games.

It is evident that regulation, and the subcultural marketing/aesthetic focus of the industry has shaped a particular economo-aesthetic dynamic of the comics medium and its industry. Path-dependent reinforcement mechanisms give rise to a spiral of repeating media aesthetical/creative
and industrial developments similar to the “industry spiral” mechanism described earlier. The target audience of young men recognised the classic genres of the comics medium, which only served to strengthen the aesthetical principles of these genres. The medium reached its commercial and popularity peak in the 1950s after the investigations and the introduction of the Comics Code. Since the late 1970s it has not been able to reverse the inevitable marginalisation and increasing subculturisation of the medium. The medium has existed in a state of creative conservation for several decades – analogous to “creative conservatism”. Admittedly, the medium is, and has been for decades, in crisis with declining sales (Mackay 2007; Mendryk 2008; Pintor 2009) and lack of innovative and creative dynamics. It is a medium that no longer develops creatively and aesthetically beyond the strict confines defined by the preferences of its subculture. It is not necessarily unprofitable: dedicated readers/fans get new episodes of their favourite content, while the industry makes a healthy profit. The only ones not satisfied might be those interested in the creative and artistic development and progress of the comics medium.

It should be noted that the history of the comics medium is of course much bigger than the North American tradition. For instance, in one of the strongest “alternative comic nations”, Japan, (similarly to the video games) a highly characteristic comics medium culture arose, based on an old tradition of drawings and illustrations. The Japanese comics medium has experienced a completely different (commercial) evolution in comparison with the North American variety, although the medium in Japan was also the subject of extensive regulation and censorship (particularly in the hentai genre). Together with video games, comics have become the two strongest cultural export industries of Japan. In relation to English-speaking countries such as the USA, the UK, Canada or even Australia, Japanese cultural expression has had limited diffusion in the globalised world of media, with the exception of Japanese comics, video games and animated cartoons. The unique Japanese approach to new media forms illustrate that given different circumstances a medium can develop in completely different manners than the dominating western fashion.

Analogously to the game industry, comic artists at one point became dissatisfied with the position as a low cultural form of expression. Consequently, the alternative term graphic novel was popularised as a replacement for the comedy-related origin of the name comics, with low culture associations to frivolity and ridicule. The graphic novel is a novel and consequently not printed in magazine format but rather bound like a book. The narratives of the graphic novel are substantially longer than in the comics medium, and are also self-contained. The graphic novel is assumed to be closer to literature than the episodic and intensive type of storytelling as-
associated with the comics medium. Besides these aspects the mediums are virtually identical, containing the same type of communicational conventions, graphical symbols and protocols as the comics medium. The comics medium is stuck in a low culture status position and closely affiliated with a highly specific and esoteric subculture of comics consumers. The industry/artists is no longer able to influence the development of the medium and the industry that creates it. Art Spiegelman’s Pulitzer Prize winning depiction of the Holocaust *Maus: A Survivor’s Tale*, in Sweden *Socker-Conny* or *Rocky*, or the ironic non-fiction *For Beginners* graphic novel series that “present to the reader in a straightforward, accessible manner the works of great thinkers and subjects alike” ranging from relativity theory through Foucault to Chomsky, are interesting examples of how the comic-book medium is being evolved and redefined by breaking with the standards and genre confines of the mainstream comics-book medium. Moreover with the advent of more contemporary and adult comic book titles during the last decade, in part aided by electronic distribution through the Internet, with content that targets an older target group (20 to 30 years) the comic book medium is slowly being redefined and expanded beyond the confines of the comics subculture. It is however highly uncertain whether the transformation of the comics medium into a “graphic novel medium” will result in a revival and reinvention of the medium. Should the industry leave the faithful subculture behind, or should it attempt (how?) to develop both the incumbent market and the more progressive graphic novel market? If compared to other 20th century media formats, the comics medium can inevitably be considered a failure and missed opportunity, considering the universal appeal and creative potential of the medium.

*Insights for the Video Game Medium and Industry*

In light of this historical development of comics, the following question arises for the game medium: should it travel down the same path? As a result it will have to wait four, five or even six decades before it breaks the confines of path-dependent creative conservatism? The problem with the comics industry is that there is no problem according to its market leaders: major publishers such as DC Comics or Marvel still generate impressive profits. For instance, in 2007 alone Marvel Entertainment generated almost $500 million in revenues (Marvel Entertainment 2007). Some comics authors attempt to develop the medium into new formats and audiences, but it is evidently not enough to break the strict economo-aesthetic confines of a “subcultural industry”. The comics medium is stuck in a precarious position: it cannot totally redefine itself since the devout subcultural
fans would revolt and protest, and even if it attempted to, “the outsiders” would be legitimately confused and perplexed by the esoteric nature of the medium. The “subculture” and “outsiders” both press the medium in separate directions and its creators need to strike an extremely delicate balance in order to satisfy both camps. The question is whether it is even possible to succeed with this balancing act.

The game industry is in precisely the same situation: after only three decades of commercial game medium it finds itself in a position where it is squeezed between the forces of the subcultural audiences (i.e. the hardcore gamers) and “the outsiders” (the vast majority of society). The subculture gradually becomes unwieldy and its core medium becomes “uncontrollable” from an industry perspective. The hardcore initially makes the medium independent and lucrative, later turns the medium into a creature predominantly only interested in its own preservation and status quo. The industry is not “coerced” to join this process, but instead the industry willingly adapts, transforms and leads the subculture in order to survive.

The purpose of this comparison with the comics medium is not to propose some type of “evolutionary laws of new media”. It is far beyond the scope of this study to theoretically establish the complex mechanisms behind the evolutionary similarities between the cases of comics and game medium. Of course it could be tentatively proposed that both mediums target young males in modern/late modern societies with similar tensions, meta-discourses and narratives. Depictions of violence, brutality, bravery and simple ethical contexts (such as fights between good and evil) have traditionally appealed, and continue to appeal, to the psyche of the adolescent (and confused) male. If this claim alone can fully explain the similar content dynamics of both media forms remains to be elaborated and answered.

This study will claim that cultural industries due to its fundamental characteristic of (mass)communication are more volatile and mutable than other types of industries. By connecting authors/senders with readers/receivers through some type of medium, every aspect is intrinsically, almost organically, interlinked. Authorship affects media content and aesthetics and communicates to the audience’s sensibilities. When applied to the forces of the market (economy), the effect is a turbo-charged Darwinistic feedback circuit that continuously and relentlessly evolves and mutates to produce a medium that appeals to wishes of the market. After several “cycle generations”, authors and readers have recursively affected the dynamics of each other. Media production attracts new “symbol creators” whose aesthetical preferences have been shaped by previous output. “Unfashionable” content is phased out due to poor sales. Audiences ("the market") unyieldingly demand new content, while still only recognising the aesthetical/
content space generated by the authors/producers/developers. The result is a continuously mutable process that is referred to as a “medium”. This volatile, fluid, fluctuating and morphing characteristic of all types of media is not something new. In influential media theorist Marshall McLuhan’s seminal *Understanding Media* (2001) media is defined as *extensions of man/the human body* or beings and thoughts. From a McLuhanesque perspective the game medium/technology is an extension of someone’s body, and more precisely the bodies and thoughts of the authors/game developers, per definition reflecting their minds and personalities. When applied to the Darwinistic forces of the market economy, these mind extensions *must* be compatible with the receivers/audience in order to maintain economically viable. Public/state media have alternative financing precisely because the market cannot sustain their type of activities, such as “politically independent” high-quality journalism, documentaries and certain “unprofitable arts” (experimental drama, pioneering films, etc.). In these situations the creators’ bodies can be extended without the public’s financial support. This illustrates how the game medium, and generally all types of commercial media, exist as reflections of and result a common culture of creators and audience.

The case of the comics medium should be seen as a warning example for the game industry if it continues doing “business as usual” using the subcultural/hardcore gamer-based industry spiral of creative conservatism. It will sooner or later arrive at a point where the market, revenues and turnovers will stop growing – the question is whether this has not already occurred. By then, the video game industry, as a result of cost-cutting mergers, acquisitions and consolidations will have been reduced to a select handful of global, fully vertically integrated game publishing giants with “sure bet” ultra-sequelised mega-hits portfolios with little incentive for innovation or broadening of portfolio and markets. The industry will be dominated by an institutionalised field of established players with no, or limited, incentive for creative innovation – a type of oligopoly. All types of external innovation such as new game developers and original titles/concept will be quickly absorbed and integrated into the structures of the “giants”. The industry will exist in a stagnant environment where new titles will continue to be carefully delivered while the market will gradually start to decline as it has in the case of comics medium industry. Signs of these oligopolistic processes already exist today with extremely strict and acquisitive IPR publisher policies. Nowadays everything in the industry is more “corporate run” and part of larger internationally collaborative structures that produce large-scale video game projects. Inevitably, this is driven by the professionalisation of the video game industry, but is also indicative of increasingly integrated value chains. In other words, there are signs of
the game industry becoming a “subcultural industry” similar to the comics industry.

CASE OF MASS-CULTURAL MEDIA EVOLUTION: THE FILM MEDIUM

Another cultural industry with similar structural dynamics was the film industry at one point during its (relatively) long history. After several decades of development, reorganizations and “golden eras”, it had evolved into a truly captivating and immensely popular mass-medium by the 1950s. Cinema was the entertainment for the broad masses – from trivial low/pop culture entertainment to ambitious auteur high culture cinema. Starting in the 1950s and ending in the 1970s the industry experienced a severe crisis that not only negatively affected business, but also the artistic and creative dimensions of the cinema medium. The main quandary was: what is the role of the cinema medium in the age of television? As everybody knows the film medium/industry did not die, but actually rebounded and experienced a golden era, called the “New Hollywood”, “post–Classic Hollywood” or the “American New Wave”, that was bursting with artistic innovation coupled with expansion of the medium into new audiences and markets. As in the case of the comics industry this particular illustrative example is a highly US-centric perspective, where the film industry as such is assumed to be primarily Hollywood, and not by the dozens of other film industries that existed in the world, such as, for example, the pioneering French or Japanese film industries. In Allen J. Scott’s fascinating analysis of the American film industry, On Hollywood: The Place, The Industry (2005), an account is given of the historical development of the film industry in Hollywood. His approach is primarily geographical (his academic origin), but the analysis also encompasses cultural economy and urban/city studies. What is particularly interesting for the purposes of this chapter is the collapse of the so-called “Old Hollywood” that was characterised by a highly vertically integrated and stagnant oligopolic industry structure referred to as the “studio system”. The system was based around the model of big production studios in Hollywood, which grew into fully vertically integrated production companies that controlled everything from production, financing, actors, post-production, marketing, distribution and even exhibition, i.e. chains of cinema theatres. Independent cinema chains were strong-armed with practices such as “block booking” and “blind bidding” (selling films in large packages and effectively shutting out competitors). At the peak of the studio era the “big five” studios were essentially in the business of renting out cinema seats one film length at a time since they controlled
and owned every aspect of the value chain – from the cinema seat to the financing and creation of films.

This type of unfair trade practice led the U.S. Department of Justice (DOJ) on grounds of anti-trust violations to sue all the major film studios in 1948 – a case which is known as the United States vs. Paramount Pictures, Inc. case. The result of the court case, which was won by the DOJ, resulted in the separation of theatre ownership and film production. Furthermore, practices such as “block booking” and “blind bidding” were forbidden. This was the first step in the dismantlement of the classic golden era studio system. The breakdown of the Old Hollywood system and the transformation into the New Hollywood led to the following five principal changes, according to Scott:

The intensifying bifurcation […] of the Hollywood production system into makers of high-concept blockbuster films on the one side, and more modest independent filmmakers on the other

1. The merging of the majors into giant media conglomerates whose scale of operation is nothing less than global
2. The intensifying geographic decentralisation of film-shooting activities away from the core complex of Hollywood
3. The proliferation of new markets based on the packaging and repackaging of intellectual properties
4. The penetration of new computerised technologies into all stages of the motion picture production and distribution process

(Scott 2005, p. 35)

According to Scott, the debate over the transformation into a “New Hollywood” was initiated in the 1980s as an observation of changes in Hollywood from a vertically integrated studio system into a more vertically disintegrated production complex that it has become today. The collapse was not only a consequence of the ruling in the Paramount court case but also due to negative market and medium dynamics as a result of the introduction of the television medium causing an almost panic-like conviction that cinema would soon die. To a certain extent it did. The mainstream low culture, low budget type of cinema production that had characterised so-called B-movies was dominated by substitutes from television, and particularly such inventions such as the TV soap opera. Peter Biskind in Easy Riders, Raging Bulls: How the Sex – Drugs–and–Rock ‘n’ Roll generation Saved Hollywood (1999) provides a prominent, yet with slight hyperbole, description of the new Hollywood that arose after the collapse. This was the era that saw the breakthrough of such distinguished, and nowadays legendary, directors as Francis Ford Coppola, Martin Scorsese, Robert Altman, John Frankenheimer and Brian De Palma, among many others. Biskind’s de-
scription may lack theoretical sophistication, but nevertheless provides an impressively broad review based on interviews with all the major players of this era. His main concern is to outline the artistic and personal circumstances that led to the New Hollywood “revolution”, or in his own words:

For our purposes, the earthquake of 1971 was supererogatory, unnecessary, gilding the lily, as Hollywood has always been wont to do. The real, earthquake, the cultural convulsion that upended the film industry, began a decade earlier, when the tectonic plates beneath the back lots began to shift shattering the verities of the Cold War – the universal fear of the Soviet Union, the paranoia of the Red Scare, the menace of the bomb – freeing a new generation of filmmakers frozen in the ice of '50s conformity. Then came, pell-mell, a series of premonitory shocks – the civil rights movement, the Beatles, the pill, Vietnam, and drugs – that combined to shake the studios badly, and send the demographic wave that was the baby boom crashing down on them.

(Biskind 1999)

Evidently, from Biskind’s perspective the New Hollywood was equally as much cultural revolution as it was a consequence of the Paramount case or the threat of television. New Hollywood was a result of the American/western cultural revolution that characterised the 1960s: new political movements, birth of mainstream pop music culture, birth-control pill/sexual revolution, the controversial Vietnam war, profusion of drugs and a demographic boom. This resulted in a cultural revolution that to this day is nostalgically discussed, analysed and interpreted ad infinitum in media, academia and society as a whole, especially among those who participated in these processes during their youth. New Hollywood was inspired by the earlier film movements of Italian Neorealism and more specifically the French New Wave that emphasised creative innovation and the salient artistic role of the film director – the auteur of the film. This was also reflected in the dismantlement of film industrial structures that supported a particular type of “aesthetico-business dynamics” which was aligned with this type of social contexts. Coupled with the “structural substitute threat” of television and the Paramount ruling this produced a breakdown which opened a window of opportunity for new influences, marketing strategies and aesthetics – the film medium and its industry was redefined, relaunched and reinvented by people with new creative visions. Most importantly, from a cultural industry point of view, these new creative visions where commercially sustainable.

The case of New Hollywood clearly shows that even the most stagnant and vertically integrated cultural industry can be transformed into new shapes that are both artistically and commercially rewarding. Admittedly, the film industry quickly “regrouped” its forces into what have become tru-
ly global media conglomerates that span practically every cultural industry, as pointed out by Scott (observation 2 in quote). The rise of New Hollywood produced an unparalleled professionalisation and corporatisation of the film industry, which has produced several negative tendencies such as excessive and crass commercialism of content production. Sequelisation, genre formatting, promotional merchandising, cross-promotions, summer blockbusters and other techniques are widely applied in the new Hollywood as well – inspiring heavily the game industry. Regardless of New Hollywood’s shortcomings the new disintegrated industry structure allows greater creative and productional freedom. New Hollywood is bifurcated into high-concept super-productions on one side, and “independent” filmmaking on the other. Innovative, creative and provocative “indie” “art house” productions given certain circumstances and some luck, still have the possibility to challenge the mega-blockbuster productions as proven by such low-budget hits such as Darren Aronofsky’s “Pi”, Tom Tykwer’s “Lola Rennt”, Myrick/Sánchez’s “The Blair Witch Project” or a number of festival/institutes such as Sundance which promote and act as gateways for independent films into the world of mainstream film productions in Hollywood.
FUTURE OF THE GAME MEDIUM: SUBCULTURAL INDUSTRY OF “INTERACTIVE CINEMA”, OR MASS-CULTURAL MEDIA OF SIMULATION?

The breakdown of the old Hollywood and its renewal as the New Hollywood movement might serve as a lodestar for the game industry. The results and conclusions of this study point in a clear direction: the game industry is approaching a severe crisis and is in dire needs for renewal and redefinition of its goals, medium and strategies. As this study has clearly illustrated the game industry is chasing an elusive, probably impossible, vision of “interactive cinema”. Coupled with the “industry spiral” of hardcore gamer-based marketing/content strategies and “creative conservatism”, the industry is slowly but surely edging towards the same destiny as the comics industry, i.e. an esoteric, hermetically closed subcultural industry with a steady and inevitable decline in popularity and creative potential.

The fate of the comics industry clearly elucidates how a creative/ cultural industry might create its own decline, while maintaining profitable and otherwise “healthy” business conditions. There is nothing “wrong” in becoming “the next comics medium” and sharing the same type of subcultural development. These subcultural industries have an extremely dedicated, loyal and passionate audience that loudly communicates its opinions to the creators. Most other industries can only envy the level of dedication and participation enjoyed by the comics and game industries. But should not other potential audience groups be allowed to share this excitement and engagement? By developing the subculture, the barriers between the insiders and the outsiders become increasingly higher. Maybe it is time (with unintentional Schumpeterian connotations) for some “creative destruction” in the video game industry? To tear down the walls that separate the hard core from the vast remaining majority? To break the mould that
shapes the subcultural industry of video games, and make it a truly universal, broad, and popular medium similar to film. Film is enjoyed by every nation, culture, age, education or income group. Film is sufficiently broad to appeal and economically support both the hardcore “film festival nerd” and the leisurely popcorn-chewing horror film consumer. The film industry is not perfect – most of the current, and in this study highly criticised, marketing/content strategies employed in the game industry are directly imported from the film industry, which has decades of creative marketing experience. The game industry, from its consoles and developers to its advertising and content, virtually screams subcultural connotations that associate it with a highly specific “gamer” subculture that is limited in terms of gender, cultures and entire continents. It is everything but the same broad and culturally neutral medium as film.

This study makes certain fundamental assumptions: it posits that a fundamental driving force of the game medium and its creators/industry should involve the exploration and development of the creative, expressive and communicational potential of the medium. Every game industry party should evolve the medium in unknown artistic/aesthetic/media directions, and not settle for the status quo. This could, and should, be framed as a fundamental critique of the (mediocre) artistic/creative “innovation level” in the current game industry. Admittedly, this perspective emanates artistic values from the Romantic tradition where art was emotional, sensible, and reflected its heroic and isolated autho – art was elevated to something dramatic, struggling, provocative and enlightened. The labels of “Romanticism” or “modernism” are often, in this post-modern age, related to pejorative associations and outdated values. Who wants to be “modern” today? Nonetheless, most of the contemporary discourses in creative/cultural/artistic production are dominated by values that can evidently be traced to the age of Romanticism.

This critical approach to game production gives rise to several interpretations that need to be elaborated. It is not part of some critical emancipatory project in the tradition of Adorno and Horkheimer, the Frankfurt school and similar critical media perspectives. Hardcore gamers are hardly enslaved, oppressed and exploited by low culture game content that prevents them from acquiring high culture enlightenment and critical thought. Furthermore, this study does not subscribe to the claims that developers in the contemporary industry context, “independent developers” in particular, are oppressed and need to be emancipated from the exploiting capitalist industry structures. Game developers are indeed sometimes underpaid and work extremely long hours, but this is not the result of some structural oppression of developers. Creating AAA games in a commercial setting is hardly a fundamental democratic human right no matter
how narrow-minded publishers are portrayed to be. Game development has been, and always will be, an extremely labour, capital and technology-intensive endeavour that is hard to “democratise”. Possibly, state supported financing could redistribute the financial/risk structure of development in line with some more “democratic mechanism”. Practically all major cultural industries: music, radio, television, film, books have state-funded support, even in developed market economies. However, fully state-run industries are becoming a politically outdated notion even among many “state-friendly”, i.e. leftist political ideologies. State-owned media such as television and radio are increasingly required to adapt to the “market” and provide more audience-focused i.e. market-oriented content. There are (limited) attempts to create regional, EU- or state-financed game development funds similar to those that support film production. However, fully state-funded and managed game developer efforts seem highly unlikely considering tendencies within public media policies and the contemporary game industry context. This study does not aim to promote the “emancipation” of game consumers or developers, but rather to emancipate the industry from the rigid structures of the hardcore gamer-based industry spiral of creative conservatism that limits and constrains the artistic, aesthetic, creative and communicational development of the game medium.

It could be argued that this study’s critical approach is only a concealed desire to transform the game medium from low to high culture status. It has been claimed that the “interactive cinema” vision increases the “cultural capital” of the medium/industry. Two ways of interpreting this ambition are that a) the industry is not content, due to social pressure, with its current status but is satisfied with the artistic quality level (it is simply “misunderstood” by outsiders) b) the industry is genuinely interested in expanding the medium into the mainstream and becoming a mass-medium, and are less motivated by issues of “social status”. The latter alternative may be partially driven by “greedy capitalist profit-seeking”, alternatively artistic/creative impulsion or a combination thereof – it does not matter since the medium “wants”, and should, expand to comprehensively fulfil its aesthetic, artistic and communicational potential. The current state of the game medium does not by far fulfil even a fraction of its creative potential. Interpretation a assumes a fiercely antagonistic relationship between low and high culture. Furthermore, it is also an expression of “reverse snobbery” in line with the logic of “proletarian culture” where the low culture is elevated and encouraged to develop its own forms of expression, and as a result also discriminate the high cultural expressions of the bourgeois/upper classes. This interpretation somehow entails that “outsiders”, i.e. the majority, are not capable of understanding its aesthetics and consequently label it as a low cultural expression form.
This study acknowledges both interpretations: the industry should be proud of its output but also strive to expand and establish it as truly universal and ubiquitous mass-medium. The industry should not be satisfied with its current output. It should instead strive for constant artistic renewal and innovation. Indeed the industry is partially driven by a type of inferiority complex towards more established media forms (particularly the film industry) and social pressure claiming that its output is not artistic enough, and that it needs to transform the medium into a high culture form. On the other hand, as is often claimed, the “artistic quality” of most AAA productions is esoteric at best and deplorable at worst, by comparison with more established media forms such as film or others. It is not this study’s objective to act as an arbiter of media aesthetics/taste since this would be a highly subjective endeavour. Nevertheless, the artistic quality of video games is not solely due to its purportedly esoteric and ungraspable new media aesthetics, but also (or primarily?) due to the second-rate aesthetics imported from other media forms, predominantly film and music. The reliance by the mainstream AAA game medium on aesthetics from fairy tales, ancient epics, fables, polarised pre-modern moral confrontations/battles, fantasy, science-fiction and controversial settings such as war/military violence, street/car racing, crime and others, result in a medium that is justifiably considered inferior by the established cultural elites or at least partially misunderstood.

The mediocre representation/remediation of other media forms, which results in inferior and dull imitations in video game format, only disguises and clouds the interpretation of the truly unique aspects of the game medium. Why focus game development on reproducing other forms of media, when there is an ocean of potential in the game medium alone? Perhaps this aesthetic of referencing other media is a case of “postmodern bricolage” consisting of various intertextual references to the ever-expanding landscape of multimedia constructs? Or is it perhaps only a case of “remediation” as proposed by Bolter and Grusin? Or possibly only terrible artistic quality and lack of truly unique inspiration sources and guiding media visions? The results of this study certainly lean towards the last option.

In place of the second-rate aesthetics imported from other media forms, the game medium should be proud of its “usp” (Unique Selling Proposition in sales jargon), or in the words of Murray the “unique primary representational property”. What this unique property consists of has been analysed in several chapters of this study – the most salient definition is the simulation/ludology or representation/narratology. “Interactivity” is usually referred to as this unique property, but has been shown to be a theoretically controversial concept. Nevertheless, the concept has managed to capture the imagination of scholars, industry and society. The problem with the
concept is not what it generally and symbolically describes – *i.e.* a procedural and participative (digital) environment as Murray claims – but rather what it conceptually *leaves out*, which is Aarseth’s biggest objection to the term. Interactivity is not a uniform process but varies according to a range of factors and processes which Aarseth has rather stringently managed to describe with his cybertext theory. It is fruitless from a theoretical point of view to propose “interactivity” as a new guiding vision for the game industry. The subsequent plea of “let’s make more interactive video games” unfortunately does not provide any practical insights for developers or the rest of the industry. Interactivity as a symbolic concept is needed, but it cannot exist as a new guiding vision.

In their conclusion to *Remediation* (1999), Bolter and Grusin question “our culture’s insistence on newness of new media” and claims that it essentially is a belief inherited from modernism, assuming that a medium must be new in order to be significant. Applied to this study: why assume that video games must be unique in their medium, aesthetics and communication, when newness is not necessarily a *sine qua non*? Is it possible that video games do not bring anything new or significant to the table of media creativity and innovation? Maybe the game medium should be satisfied with its role as a trashy collage of intermedia referencing? All the talk of reader revolutions and the death of authorship might be simply a question of hyped rhetoric with no connection to reality. Why bother at all about the video game medium, in the end? This study emphatically replies: there are as many reasons for caring about the video game medium as there are hundreds of millions of gamers around the world! The game medium represents a genuinely groundbreaking opportunity to create one of the truly greatest and most powerful mediums in the world with fascinating new artistic, creative and aesthetical potential and dimensions. As Bolter and Grusin’s notion of remediation illustrates the game medium can incorporate elements and dimensions of practically *all* previous forms of media: drama, film, music, photography, painting, lighting, architecture, scenography, and yes, even literature. The game medium can *simulate* visually, structurally and audially all of these art forms, and then present another layer of “interactivity” which allows breaking the “principles” and limitations of each respective medium. Video games can become the ultimate and most captivating medium of all time. With the possibility to range from low to high culture, different languages, different genres it could become one of the most popular media forms of the future.

If correctly developed it could also become one of the most powerful mediums for education as well. The video game medium could bring to dynamic and simulated life all of the complex systems, mechanisms and frameworks of knowledge that are statically described in conventional
course literature books. For instance, instead of reading about monetary policies and understanding all the complicated factors that are part of different relevant macro-economic theories, a cleverly designed video game could simulate aspects of a monetary system (in accordance with prevailing theories) and consequently communicate them more dynamically and efficiently than a static text book, or even a lecture, could ever do. The simational potential does not end there: instead of simulating theories and education, video games could be applied to simulating any conceivable aspect (of course within the limits of technology) of our society, psychology, culture, emotions and other “themes” popular within arts. Video games could for instance simulate, not only represent, the relationship between two people, or the social/psychological consequences of war, a dinner party, a breakup or any similarly “non-video-game-ish” topic. The conceptual devices, visual tools, game mechanics, input methods to simulate this are not available today, and subsequently challenging to imagine. Maybe they are impossible to develop, but surely it is worth exploring this option instead of endlessly simulating racing, violence/war/shooting, football and cascades of bloody corpses. In place of imitating and playing catch-up with the cinema medium – an endeavour bound to fail – video games should believe in their own expressive and creative potential and start developing their own tools, devices, concepts and genre. Cinema was once considered a limited medium, a type of technological gimmickry that could mimic vaudeville and theatre (without sound and colour), but managed slowly to evolve into one of the most dynamic and popular medium of our times by exploring its own expressive potential. Technologies such as colour motion picture film, sound and prominent movements/filmmakers Italian Neorealism, Hitchcock, Orson Welles, Tarkovsky, Kubrick, French New Wave, New Hollywood and countless others have redefined and aesthetically/artistically developed the film medium onwards. Video games could similarly be in the early stages of a long and fascinating journey towards unknown masterpieces with immense artistic impact and well-known auteurs. The video game medium needs revolutionary innovators – the equivalent of video game Kubricks, Welles and Martin Scorsese, or Hemingways, or Michelangelos for that matter.

Bolter and Grusin might be perfectly right in their criticism of the modernistic “media newness”. Their theoretical framework, based on a type of media intertextuality, is intrinsically biased against the notion of unique and independent media forms. On the other hand: if there is one thing all researchers and theorists in the field of game studies agree upon is that the game medium represents a truly unique new medium with hitherto historically unavailable features and communicational dimensions. Practically all game research is conducted in an almost revolutionary atmosphere. One
of the fundamental assumptions of this study is in line with this “newness of media” approach. It might indeed be a sign of modernist thought, and less of postmodern hypertextual and intertextual thinking, but nevertheless founded on the analysis of the major theories within game studies, and particularly within the fields of literary and new media studies. The game medium is indeed currently based on aesthetics, notions and inspirations from the film medium. As proposed by the “interactive cinema” concept in this study, many game developers find the game medium to be essentially a form of narrative/storytelling, which of course is also reflected in one of the dominant theoretical perspectives on video games – narratology. The other perspective, ludology, emphasises the play and game aspects of the game medium, and more specifically the structures and mechanisms that produce dynamic video game texts.

As has been shown in the final analysis of this concluding chapter, this study leans towards the creation, within the game industry, of a new guiding vision based on and inspired by theoretical frameworks of ludology. It has shown that the guiding notion and creative concept of “interactive cinema” is not a viable concept for the future of the industry – if it wants to expand beyond the subculture and fully explore the fantastic creative potential associated with the game medium. According to this study it should be a creative and evolutionary imperative to industry to achieve this objective. Unfortunately, this is not the situation. The game industry could transform the medium into the “next comics medium”, and all the creative potential of the medium would be practically lost to most of society. Why choose this option? The Wii and occasional titles are positive signs and small steps towards a universal cultural industry of video games. The video game industry must decide – it is their decision to make.

This is all I have to say on this matter.
REFERENCES


Christiansen, C. G. (2000). “Ethics and Politics in Qualitative Research”. In The SAGE Handbook of Qualitative Research, N. K. Denzin & Y. S. Lincoln (Eds.), SAGE.


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Jenkins, H. (2003). “Game Design as Narrative Architecture”. In First Person: New Media As Story, Performance, and Game, N. Wardrip-Fruin & P. Harrigan (Eds.), MIT Press.


Laurel, B. (2001). *Utopian Entrepreneur*, MIT.


Sony. (2002). *Demand for Videogame Hardware and Software Flourishes This Year Despite Tough Economic Climate*, Sony Computer Entertainment of America.


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