

Project Management within start-ups:
Literary review and case studies in
Stockholm, Sweden

ADNOT THIBAULT



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Abstract

This paper describes the way start-ups use Project Management, what their needs in this field are, and what tools they use to support it. In the first part of this paper, a comprehensive literature review is performed, divided into three main parts. First, Project Management in general is studied; second its benefits to SMEs are pinpointed; and finally its application to start-ups are reviewed. The second part of this paper is based on three case studies of start-ups in the Stockholm-region. Five representatives of these start-ups were interviewed, and the results of these face-to-face conversations are first exposed and then discussed by the author.

In the end, this paper shows the traditional phase-based approach to Project Management does not suit start-ups. Instead, a more agile and iterative method is put forward, such as SCRUM. It is argued that such strategy should be kept by start-ups when growing and tapping other markets outside Sweden, although it is recognized that Project Management should become more formal than the general “on the go” approach witnessed in the three start-ups.

Key-words: Project Management, start-up, agile, iterative, flexible, SCRUM.

1. Introduction

Project Management is widely recognized by researchers to bring companies valuable help in communication, planning and general management: Gantt charts help visualize a project's milestones; breaking down a project into smaller sub tasks allows for clearer organisation of the resources available and avoids repetition; and so on.

These benefits, as well as means to foster them as much as possible, have been widely discussed in literature, yet almost always for mature or relatively large companies (Tonquist, 2008). How Project Management is used in start-ups have not attracted much attention by researchers so far. However, it is commonly accepted that start-ups evolve in an unstable and short-term vision environment, and have a great work-load to cope with on an everyday basis. The aim of this paper is therefore to investigate how start-ups use Project Management as of today, what their needs in this field are, and what tools they lack.

To fill in this knowledge gap, we will first understand the literature closest to our field of study, and especially how projects are dealt with within Small to Medium Enterprises (SMEs), as defined by the European Union in 2003. Then, we will focus on three particular case studies in Stockholm. In the end, we will analyze the results of these case studies and try to understand how Project Management can be useful to start-ups, and what tools may be most relevant to support it.

This paper is thus intended for entrepreneurs or would-be entrepreneurs who are finding it hard to run projects effectively and efficiently. Scholars and

academics will also find in this paper valuable insight in the fields of Project Management and organization within start-ups in general.

2. Project Management in Start-ups

In this part we will review how the existing literature deals with the topic of Project Management within start-ups. First, we will provide a definition of a start-up, then we will describe the main literature on Project Management, and finally we will get down to understanding what its use can bring to SMEs and in particular to start-ups.

2.1. *The nature of start-ups and their challenges*

Contrary to SMEs the European Union does not give a definition of a start-up. Therefore, for the purpose of this paper, we will try to agree upon a widely accepted definition of a start-up.

A start-up is a business entity “which did not exist before during a given time period (new), which starts hiring at least one paid employee during the given time period (active), and which is neither a subsidiary nor a branch of an existing firm (independent)” (Luger & Koo, 2005, p.19). In Sweden, it is usually informally agreed start-ups hire less than 10 full-time employees.

Apart from this definition, we understand (as was the case in our case studies) that start-ups run on scarce resources, both in terms of cash and competence. They must also achieve key milestones to get further investments, as the rocket model illustrates (Smith & Smith, 2000). Such a milestone

can be to get to the market on time, or at least as fast as possible. All these challenges hint that start-ups could use the findings in the field of Project Management, because it may bring valuable help for planning, resources sharing and so on.

2.2. Project Management

Project Management dates back to the post Second World War developments in technology and infrastructure (Hodgson & Cicmil, 2006), and especially in the US with the Manhattan project or the Apollo space programmes (Hallin, 2011). Literature usually considers Project Management for large companies (White & Fortune, 2002) and under the three main components of cost, quality and time (Tonnquist, 2008). The Project Management Institute describes Project Management as “the application of knowledge, skills, tools and techniques to project requirements” (Project Management Institute, 2012). Project Management is also portrayed under five main components: initiation, planning, execution, monitoring and control, and finally closure (Kerzner, 2000).

Project Management is a field of study constantly evolving (Crawford et al., 2006). For example, recent years have witnessed the advent of more agile and iterative methods (Beck et al., 2001), and especially SCRUM (Hallin, 2011), which contrast with the more traditional and bureaucratic methods of Project Management (Tonnquist, 2008).

For the purpose of this Thesis, Project Management will mainly refer to activities such as planning, work breakdown, cost monitoring and control, and so on. The

tools that enable or at least facilitate those activities will also be referred to throughout this paper.

2.3. Project Management in SMEs

Project Management in start-ups has not been explored a lot in literature yet. The closest field of research is Project Management within SMEs.

Unlike for start-ups, the European Commission has issued a definition of SMEs (European Commission, 2003), according to their number of employees, and either their turnover or their balance sheet (European Commission, 2012). The following graph shows this definition.

Table 1 - The EC definition of SMEs

Company category	Employees	or	
		Turnover	Balance Sheet
Medium	< 250	≤ €50m	≤ €43m
Small	< 50	≤ €10m	≤ €10m
Micro	< 10	≤ €2m	≤ €2m

Based on existing literature in 2006, Murphy and Ledwith describe SMEs as more flexible and closer to customers than large companies (Murphy & Ledwith, 2006). Thus, SMEs can enhance customisation, which is also the case for start-ups. Similarly, they state SMEs can respond more rapidly to threats, have quicker management loops and better internal communication. Contrarily, SMEs suffer from nonexistent economies (scopes and scale) and are very exposed to only having a few products available. These characteristics are supposed to be shared by start-ups, an assumption that should be confirmed during our case studies.

Four main differences are highlighted between large companies and SMEs (Ghobadian & Gallea, 1997):

- Processes (simpler and more informal for the latter),
- Procedures (lower standardization),
- Structure (more multi-tasking employees),
- People (more risk averse due to failure danger).

These differences between large companies and smaller ones have deep implications. Murphy and Ledwith, uncover the need for new key factors that will lead to success in projects launched by SMEs: “Top Management Support, Clear Goals/Objectives, Planning, Monitoring & Control, Resource Allocation, Risk Management and Client Consultation” (Murphy & Ledwith, 2006, p.9). Their interviews showed that the first two were deemed most crucial by interviewees.

Another research pushed findings further by differentiating SMEs by size and industry (Turner et al., 2009). First, “project duration appears to increase with company size” (Turner et al., 2009, p.286), which can be explained by a better visibility into the future (less risks for the whole company to fail). The study highlights that micro companies are more concerned with requirements definition and resource scheduling, and hence use mostly project planning (although planning can remain informal) and project control. Then, bigger SMEs use more sophisticated Project Management tools. All in all, the two former tools (planning and control) are the most important ones to SMEs, along with work breakdown, milestone planning and quality management. By classifying by industry, the researchers did not find any

interesting differences amongst their sample, which is why they concluded that the use of Project Management is more impacted by size than by industry. In the end, they sum up that the most important success criteria is client consultation, which was expected.

The same researchers then published another paper where they explain that “SMEs require less bureaucratic forms of Project Management” (Turner et al., 2010, p.744). They conducted a large survey among SMEs in Ireland, Austria, Romania and Sweden in order to highlight the factors that lead to the use of Project Management. The results of their study are not of direct interest to this paper, yet the factors they pinpoint will be used in the case studies: whether the company focuses on product routine or innovation, whether managers have experience in Project Management, and so on.

2.4. Project Management in start-ups

As we have seen, Project Management has been investigated thoroughly by researchers for both large and small companies. As for start-ups, Dean investigated the field of Project Management tools in start-ups by focusing on how the new and increasingly available personal computers could help managers to lead projects (Dean, 1986). The impacts he found concerned the project manager, the staff and the top management, and he showed that Information Technologies (IT) tools were about to improve greatly the field of Project Management in firms.

A decade later, “a comprehensive record of the evolution of nearly 200 technology start-ups” (Baron & Hannan, 2002, p.9) was launched through the Stanford Project

on Emerging Companies. Although researchers focused on the companies' organisation more than on the use of Project Management, their results are of great help to understand the factors that can impact the use of Project Management in start-ups. These factors (described below) seem all the more so relevant as some are found in the work of (Turner et al., 2010) as well.

First, the company's organisation is more likely to be modified after a change of direction when the CEO is no more one of the founders, even though the proportion of start-ups undergoing organizational changes remains high when the founder keeps the job of CEO (Baron & Hannan, 2002). Second, because "the costs and risks of transitioning to a new organisation model might outweigh the advantages" (Baron & Hannan, 2002, p.28), the researchers suggest would-be entrepreneurs to care about selecting an organisation that can both suit the start-up and accommodate for future growth, whereas they highlight Human Resources are for example not addressed a lot in Business Plans. This leads the researchers to third focus on the company's scalability (apart from IT tools), that is to say the ability of the culture and practices to adapt to growth in turnover, number of employees and so on.

Finally, start-ups should "[balance] the need for global consistency against the need for local flexibility" (Baron & Hannan, 2002, p.32). This is a challenge that the three case studies are bound to face, since they are supposed to look for global markets. We will therefore try to understand if such advice applies and can be useful to them.

Midler and Silberzahn investigated how start-ups learn from previous projects, and how those can affect their trajectories (Midler & Silberzahn, 2008). They discovered that setting a goal for a start-up very early (especially before the firm's creation) usually leads to loss in flexibility, which means the company will suffer more from changes in markets. In such cases, start-ups are bound to implement a new project each time. Their comparative study of two firms who experienced those changes shows two different approaches. The first company kept the same management and shareholders, despite changing products and markets radically several times, because each time it connected the new project with the previous one (what might be called pivoting today). The second company also went through some abrupt changes in strategy, but those were more chaotic, and the company lost employees and knowledge each time (it did not leverage on the existing knowledge), thus increasing risks. Through their research, Midler and Silberzahn highlight factors that can keep a start-up from falling into the second case: adaptation versus planning and fuzzy strategy, exploration and exploitation, and so on (Midler & Silberzahn, 2008). These factors will be used in our case studies.

3. The case studies

As we have just seen, current literature focuses a lot on what Project Management can bring companies. Yet, no research has so far only focused on how Project Management can be used in start-ups, and more precisely which specific tools could support it. The aim of this work is therefore to study three start-ups in order to

better understand their current way of managing projects, their needs in this field and finally what tools they use and/or lack to support Project Management.

3.1. Methodology

This research is an inductive and interpretive study, which was conducted in three start-ups in the Stockholm-region. Several other methods were considered at the very beginning of this work, but were not chosen. For example, the time span of this program did not allow for a wide and hypothesis-based survey (positivism). Similarly, a comparative study between Sweden and France (the author's country of origin) was once foreseen but was not selected because of lack of time and resources to organise face-to-face interviews in both countries. Instead, this study is interpretive and case-study based. This method enables a deep understanding of the companies studied, and permits comparison and generalisation since common patterns will emerge out of the case studies.

The study was carried out through interviews of representatives from start-ups in the Stockholm-region. Twelve start-ups were originally contacted through Stockholm Innovation and Growth (STING), a non-profit organisation linked to KTH and which shall "actively support the formation and growth of 12 new technology companies focused on exports per year in Stockholm" (STING, n.d.). Three of those twelve start-ups accepted to be studied and are therefore the case studies.

The interviews were carried out face-to-face and lead by the author in a semi-structured way, and lasted about one hour

each. One or two employees were interviewed in each company, as we will explain later.

After having conducted the six interviews the author first constructed the data (i.e. transcribed the recorded interviews and separated the answers by theme and company), secondly synthesised those results, and finally moved towards an analysis and conclusion. The exact problem formulation was developed through the process.

3.2. Presentation of the companies

To preserve the anonymity of the informants and of the companies, the companies will be designated under the following names: the Fruit Company, the Solar Company and the PV Company. Fake names will be given to each interviewee as well.

Maria founded the Fruit Company in August 2009 and registered it in 2010. She is now developing a new machine that can quickly deliver smoothies, just like a coffee machine already does in many offices. John, the company's Chief Technology Officer (CTO), works half-time for the company and was also interviewed for this paper. There is only one other employee in the Fruit Company, working 10% of her time.

Mark and Henry founded the Solar Company in April 2011. They are the only two employees of the company, and they are now developing a new type of solar thermal system.

Finally, the PV Company was launched in September 2011 by Paul, the current CEO, and two other founders. Currently, there are six employees in the company, and all

are working to develop a first prototype of Photovoltaic inverter (a device that turns DC current created by sunlight into AC current fit for the grid).

The following table gives the reader a simple overview of all the interviewees.

Table 2 - Overview of the interviewees

Company	Interviewee	Position
Fruit	Maria	CEO Founder
	John	CTO
Solar	Henry	CEO Co-Founder
	Mark	CEO Co-Founder
PV	Paul	CEO Co-Founder

These companies are now dedicating 100% of their time to their development projects. For example, they do not perform fundraising (they already have some funds, but this is not the focus of this study) or look for clients (they will do so after the development project has reached its goal).

All three companies are seeking to produce an industrial product, which enables easier comparison between the three.

3.3. *The interviews' main results and their analysis*

In this part, the reader will be given the main points that came out of the interviews. As mentioned above, although the interviews were transcribed, this paper is not intended to state each and every answer from all interviewees, but rather intends to discover patterns that apply to all three case studies. Therefore, four main points will be investigated below, as is hinted at by the interview guideline in the Appendix.

First, we will briefly compare the companies with regards to their history, their current general strategy and their overall goals, in order to highlight common patterns among the three companies, as those patterns enable generalisation. Second, we will focus on the strategy these case studies adopted regarding Project Management. Third, we will come down to understanding the companies' use of Project Management tools to meet this strategy. Finally, we will take a quick look at the companies' future from a Project Management perspective.

3.3.1. *Description of the companies*

The companies interviewed are rather small: neither of them has any turnover yet since none is actively selling products so far (in fact none of them has any products available), and two have only two or less full-time employees, while the third, the PV Company, has six.

Another common point between the three companies is the phase they are currently in: developing a prototype. Indeed, two have had the original idea in mid-2010 and the third (the Fruit Company) in 2009, and all are now prototyping their first proof of concept or commercial proof of concept. Securing this prototype is a means for companies to attract further investment by demonstrating the product's feasibility, or is an important step towards industrialization.

As a result, and these companies are nearly the same age and undergoing the same phase, which enables further comparison throughout this paper.

In the three companies, the initial "team" (either one, two or three founders) has remained in place, and the new

competences (such as financing) that were brought in afterwards (except for the Solar Company) did not affect the company's leadership.

When asked about their general strategy, the answers of the companies' CEOs usually cover the future five years, except for the CEO of the PV Company who did not mention any specific turnover- or employee number targets in the future.

Finally, it is important to notice that all three companies are aiming at the international market for their idea, because all consider the Swedish market as too small in the long run. This should come as no surprise since STING, the incubator the three companies have joined forces with, aims at enabling companies to seize a market globally. In our case studies, some foreign countries are directly mentioned as probable targets: in Scandinavia, across Europe (mostly the United Kingdom, Germany, Italy and France) and finally both the United States and China, depending in the products. To set foot in these international markets, all three companies plan to deploy sales teams in the various countries, or tie with a locally implanted partner to gain quicker access to a running network. As a result or a cause, the three companies plan to keep development units in Sweden.

Regarding clients, interestingly enough, all companies have for the moment chosen to make the most out of existing networks. The PV Company and the Solar Company focus on retailers, distributors or residential property managers to sell their products, while Maria (the Fruit Company's CEO) wishes to use a partner's network when moving to a new country. One can suppose that this strategy enables

the start-ups to secure several sales for each of their "big" clients, therefore at a lesser cost compared to the effort they would have to make to sell the same number of products but to several private clients. Yet, the Solar Company keeps this second opportunity in mind for the future. One may indeed argue that this option would certainly diversify the company's client portfolio, hence diminishing risks and decreasing a client's importance.

3.3.2. Project Management Strategy

When it comes to Project Management, the three CEOs interviewed tend to show an "on-the-go" approach. They are currently coping with projects as they have been doing since they launched their start-up, without any real strategy so far. For example, nothing on Project Management is written in the initial Business Plan or in the company's culture (when it exists on paper). As a result, none directly qualifies their Project Management culture, except for Paul from the PV Company who instantaneously said they use SCRUM. However we will see later on that all three CEOs are considering using Project Management tools in a more structured way in the future.

All five interviewees have had previous jobs before entering their respective start-ups, and all of them have already used some kind of Project Management in their previous jobs. Their experience varies a lot, ranging from a doctoral degree in Academia where projects were run with poor management for Maria, all the way to her company's CTO John, who has worked as Project Manager for a big Swedish manufacturer, being responsible for projects in the size of the SEK6.5bn

aiming at launching a new product on the European market.

After conducting the interviews, one general feeling is that Project Management is considered by all, whatever their background and experience, to be useful to their company. For the interviewees, Project Management primarily boils down to: goals, communication, planning, task breakdown and sharing, leadership (and especially visual leadership), structure, milestones and cost tracking.

In addition, one could easily qualify the three companies' Project Management systems as very SCRUM-like. The PV Company's CEO Paul clearly states it is, and many others recognize it is, once SCRUM is mentioned (by the interviewer) during the interview. Indeed, the three start-ups usually divide their work (here, the building of the prototype) into blocks of one or two weeks (depending on the level of details wanted). Then, they run feedback loops for each block, and all held weekly meetings to discuss previous achievements and problems, and to prepare the next block.

As a matter of fact, all the interviewees believe in Project Management. For Mark and Henry at the Solar Company, it is a useful brainstorming system to prepare and set a structure around an issue and tasks. Mark even added, when asked whether Project Management could be a competitive advantage:

“If you can structure projects in a proper way and drive them to completion as fast as possible and as correctly as possible it is an advantage over competitors who do not use

Project Management, or maybe do things on an ad-hoc basis.”

For his colleague and co-founding friend Henry, one important point where Project Management can be useful is to make people concentrate on the company's objectives and problems, and not only theirs (we will come more in details on his beliefs in a following part). At the PV Company, Project Management is considered “*really useful*” and “*necessary*”, especially since SCRUM can help the company “*find out pretty quick if [it is] on track or off track*”.

Finally, at the Fruit Company, the CEO and founder Maria considers it useful, although she would like to learn more on Project Management as a discipline (she never had courses or training on Project Management). The company's CTO John, a former Project Manager in a big company, unsurprisingly believes in Project Management as well.

Concerning the evolution of Project Management in the three start-ups over time, so far, its use has not changed a lot compared to what it was when the company was launched. Indeed, all three start-ups are still relatively young and do not hire a lot of employees, which means that the structure that was initially created for one, two or three founders is respectively still suitable for two, two and six employees. In the last part of the interviews, it is nevertheless interesting to see that the future of each start-up will require adaptation.

3.3.3. Project Management tools

After having mentioned each start-up's strategy, we can now focus on the current use of Project Management tools in each of them. As mentioned above, Project Management is usually evolving "on the go" in the three start-ups. A common remark mentioned by the interviewees is that they did not want to waste time finding and implementing an overall Project Management system and that such system is too costly for a start-up. Moreover, as mentioned by John at the Fruit Company, a trade-off has to be made between action (necessary to make the company move on) and documentation (necessary to prepare the next steps), which can also partly explain this "on the go" approach.

As a result, much is done with licence-free software or tools. E-mails are of course the prime means of communication internally and with suppliers or potential clients. As for accountability or planning, the Microsoft Excel software is the number one software in all three start-ups. However, one has to bear in mind that this extensive use of Excel is not characteristic of start-ups: according to John at the Fruit Company, who used to work for big company, "*large companies also use Excel a lot*". Then the Microsoft PowerPoint software is also used for external communication, especially for the weekly meeting each start-up holds with its STING coach (there again, SCRUM-ideas seem to be used).

Henry at the Solar Company also mentioned that the company uses several "*layers*" of Project Management to tackle each stakeholder: STING, suppliers, customers and of course internally.

As regards cooperation, online solutions have also been adopted by the start-ups interviewed. DropBox is used to share files with suppliers at the Fruit Company, because it is "*convenient*" and "*feels secure*" since the shared data is encrypted. Similarly, Google Apps are used by the Solar Company, such as online documents or spreadsheets, because such systems enable several workers to modify one single document at the same time and to keep track of those changes. Visual leadership was also deemed important by several interviewees: a simple whiteboard or post-its are used to support it at the two solar start-ups, for example during brainstorming sessions or meetings. Finally, Skype is being used to communicate with far away team members, such as for the Fruit Company where one of the two suppliers contracted to develop the prototype is based in Linköping, a city 200 kilometres from Stockholm.

The only specialised system used is the "Gantt Project" software at the Fruit Company, by the employee working only 10% of her time there and responsible of fruit suppliers and recipes. This is a free software for "project scheduling and management" (GanttProject Team, n.d.).

The following chart gives a summary of the Project Management tools used in the three companies.

Table 3 - Project Management tools used by the three companies

Activity	Tool(s)
Resource Management	Excel
Time Management	Excel Gantt Project (the Fruit C.)
Financial Management	Excel
Communication Management	E-mails PowerPoint Skype White board Post-its
Knowledge Management	DropBox Google Apps

One last point to mention with regards to Project Management tools or system is the relatively low influence of the external environment on the three start-ups. Although STING hosts many start-ups, it seems as if the exchange of good practices for Project Management is limited. For example, all were aware SCRUM is a “*buzzing concept*”, but thanks to their personal readings and not necessarily because they had seen others at STING use it. Similarly, for the three start-ups, their competitor’s use of Project Management does not influence them at all.

Finally, since our case studies do not tie closely with suppliers or partners in terms of Project Management systems (only in terms of milestones), then the latter’s use of Project Management does not influence the former (there is no obligation to comply to the supplier’s system for instance).

3.3.4. A look at the future

As we have seen, the start-ups we based our case studies on have an “on the go” approach, which is reflected in the tools

they use. Nevertheless, they are wishing to expand business and go global at some point in the future. Therefore, all will hire new employees (mostly in sales, administration and production) and will have several contracts or employees abroad, as far away as China for instance. As a result, two main challenges are to be met from a Project Management point of view: scalability and flexibility.

When asked whether their current way of running projects and the tools that support it are scalable to having more employees, most answered a clear “*No*”. For instance, post-its will become messy, a more formal Customer Relationship Management (CRM) system will be needed when the start-ups will have several customers, and accountability will have to be dealt with more professionally. Nevertheless, it seems as if the five interviewees want to keep using the same basic SCRUM-like methods: visual leadership, a clear structure, focusing on the company’s goals and so on. In general, it seems as if there is yet no clear strategy on this point for each CEO, because (s)he “*has not thought of this*”.

3.4. Analysis of the results

In this final section of the paper, it is interesting to take hindsight from the interviews’ results and compare them to existing literature.

First, one obvious remark to be made is that the three start-ups do run projects. All interviewees agree that they are running a project (a development project), and one can say, referring to the commonly accepted definition given above, that they are. Indeed, just like for Saab’s Gripen jetfighter (Hallin, 2011) or for the

organisation of the New York marathon (Tonnquist, 2008), an objective (or goal) is set, a timeframe and schedule is decided, resources are dedicated (here, the entire company or nearly), and so on.

Yet, the three case study start-ups do not seem to use the classic tools described in literature. Indeed, the traditional way of considering Project Management does not seem to apply to our case studies. Instead, there is an intense focus on a more agile point of view, and a SCRUM-like vision to the project those start-ups run. This conclusion can be somehow explained by the fact that traditional Project Management was first designed to fit large and mature companies, which are, as shown above, very different from the companies studied here.

As a result, one could argue for a new approach to Project Management in such cases. Indeed, in development projects in start-ups, it does not seem relevant to use the traditional “planned phases” Project Management seen in literature, with such stages as initiation, planning and execution (Kerzner, 2000). In the start-ups studied here, iterative Project Management seems more adequate and seems to fit better the general “on the go” philosophy witnessed on an everyday basis.

This new point of view on Project Management can be seen as viable when referring to the previously mentioned analysis of the differences between large companies and SMEs (Ghobadian & Gallea, 1997). Considering start-ups share more with SMEs than with large companies, a new Project Management structure for start-ups should bear in mind the four main differences these researchers highlight and that were witnessed in the

three case studies: Processes, Procedures, Structure and People.

According to Murphy and Ledwith, “Top Management Support, Clear Goals/Objectives, Planning, Monitoring & Control, Resource Allocation, Risk Management and Client Consultation” (Murphy & Ledwith, 2006, p.9) are new key factors that lead projects to success in SMEs. Those factors seem to apply here as well, even though Client Consultation is not yet the start-up’s priority because the three companies studied only focus on their development project before they will start looking for client more thoroughly and formally.

Conversely to what was witnessed when studying SMEs by industry and size (Turner et al., 2009), the sampling of “only” three case studies does not enable such classification. Rather, the three companies shared features that permitted the emergence of common patterns for the purpose of this study. Yet all three agree, as Turner and his colleagues showed, that more formal Project Management systems and tools will certainly be needed when the companies grows bigger (Turner et al., 2010). Yet, one could discuss this point of view. As explained, agile and iterative methods, such as SCRUM, have come under scrutiny lately. Therefore, one can wonder whether the traditional Project Management methods are truly always the most relevant for a company. Instead, keeping some of SCRUM’s main features, such as flexibility, could be a good way forward for the three case studies.

As regards the same researchers’ following study (Turner et al., 2010), the three start-ups here do not seem to comply entirely with their findings on SMEs. It seems as if

start-ups do not so much need less bureaucratic forms of Project Management but rather need lighter and more iterative ones, to better fit their “on the go” philosophy. In addition, there was a constant focus in the interviews towards license-free tools that are simple to implement and use.

As was explained before, literature dealing specifically on Project Management within start-ups barely exists. Unfortunately, the few articles reviewed above do not quite apply to the three start-ups studied here. Obviously, the projection that computers would help all levels of the company to run projects (Dean, 1986) is verified here: all interviewees and more generally all employees do use computer-based Project Management tools. But this conclusion is not surprising and is nowadays very common. Similarly, the paper by Baron and Hannan (Baron & Hannan, 2002) does not bring a lot of hindsight for the three start-ups studied, because none has experienced main changes in structure (all three are quite young and have kept their hierarchy) and because the scalability of the companies system or its adaptability to different cultures has not yet been thought of a lot, and surely is not under scrutiny in the start-ups’ current development project. Finally, the study concerning learning from previous projects (Midler & Silberzahn, 2008) unfortunately does not apply here either, because the current development of the prototype is the three start-ups’ unique and first project. As a result, no previous project has been abandoned and the strategy has not been modified, since the very first project to be developed has not met its end goal yet.

4. Conclusion

A start-up differs from SMEs and even more from large and mature companies. Even though many of the previously known concepts do apply to start-ups since some features of Project Management are shared by large, small and young companies (planning, resource allocation ...), start-ups seem to require a more “on the go” approach that enables flexibility and iterations, as opposed to the commonly accepted phase-based approach. As a result, it is not surprising to see many advocate agile methods and in particular SCRUM, because such vision seems to better meet the start-up’s needs in its development project.

Yet, it can be argued that such flexible and iterative strategy should not end when the start-ups grows, but rather should be kept and adapted. Obviously, such a new approach has managerial implications, since more flexibility and freedom of action is to be given to employees in the start-up, which could turn out to be problematic when the start-up grows and taps new countries. To enrich this theory, more research such as this paper’s should therefore be carried out.

There is a consequently a need to study start-ups more closely, especially from a Project Management perspective. This will not only enrich this research’s results, but will also eventually lead to the creation of tools that could better suit a start-up’s needs at every stage.

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Appendix: highlights of the interview

The interview was divided into three main parts. First we wanted the interviewee to describe the company in general, then we were interested in knowing the company's current strategy, especially as regards Project Management, and finally we were looking for insight concerning the everyday use and benefits of Project Management in the start-up.

Below the reader can read the entire semi-structured interview divided into those three parts.

1. Description of the company

Description of the company: corporate culture (if any), number of employees, turnover, products, number of products sold (if any), economies of scope and/or scale?, industry, competitors, number of markets targeted...

History of the company: when was it founded? What changes did it undergo? Is the current CEO the founder/one of the founders? What growth did it achieve (in turnover and employee)?

Strategy of the company: what is the current goal of the company? Is the company wishing for product routine (for example if the start-up is supposed to become a lifestyle family business) or is the company wishing to grow a lot and become global? Will the company run projects to pursue innovation/growth or once established will it run "business as usual"?

2. The past and current strategy as regards Project Management

Is Project Management in the corporate culture? Is the use of PM clearly stated or informally encouraged? Is it normal to use PM? Was the use of PM part of the initial Business Plan? Why (not)?

CEO: former use of PM? Trust in it? Do you think it can be useful to your company? Does the CEO force/blocks the use of PM?

Managers: same questions

Employees: same questions

➔ Is it the same view for all in the company?

Is it the same for all the businesses (different departments, different cities/countries) within the company (if applicable)?

If NO answered in one or both of the two above questions, why? Is the difference amongst employees and/or businesses on purpose or forced? Why? Is the difference appropriate or not?

Do competitors use PM? How? Is it a distinctive feature for those companies or for your company? Could the use of PM be/become a competitive advantage/disadvantage?

Do similar start-ups use PM? How? Could it influence your use of PM (cf ties within STING, at KTH Alumni ...)?

Has the use of PM evolved over time? Why (change in management, arrival of new employees, pivot in strategy ...)?

Is the use of PM part of the current strategy? Why (not)?

3. The use of Project Management on a day-to-day basis

If Project Management is used, what for (repeat the main 2/3 reasons)? What does it bring to the company?

What are the tools used on a regularly basis (MSProject, Planning, Gantt, CPM ...)? How are those tools used? How often are those tools used? For what kind of project (duration, turnover, number of employees involved, for strategic projects or day-to-day routine, strategic for the client, for which type of client (big, small, important, crucial ...) ...)?

How dependent is the company's Project Management system on the customer's or supplier's one?

4. A look at the future

Is the current system of Project Management (employees' habits, corporate culture, tools) scalable to accompany the company's growth? If yes, was that a choice from the beginning? If it is not scalable, will it evolve to become scalable? How to run PM to match global consistency with local flexibility?

If you do not currently use Project Management, when do you plan to? What are the conditions for PM to become interesting? How large must the company be (number of projects, turnover, number of employees ...)? Was this "threshold" thought of as soon as the company was created?