MANAGING INNOVATION AND IMPLEMENTING NEW DESIGN TOOLS AND METHODS

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Keywords: Design methods, utilization, tool-box, creativity

Abstract: In this conceptual paper a management-perspective towards the field of innovation is addressed. Important basic aspects towards the paradoxes embedded in the field are investigated. On one hand we are asking for innovations and on the other hand we can observe the difficulty of introducing new methods and tools to the field – for instance the adaptation of design models. Professionals often continue working the same way as previously. In the article it is claimed that this is related to our basic education and the "tool-box" we learn early in life, gradually becoming professionals. A profound comprehension of what mental models underlie the actions of the different kind of engineers managers have to "manage" is useful if management aims at facilitating an innovative and creative management culture. If introducing new design tools and methods this ought to be considered, as well as handled, by managers.

1. INTRODUCTION

As well known: innovation is huge area of interest, but still a puzzling topic [1]. An innovation, by definition, stands for something novel; no management prescriptions offer self-evident, proven advice. We ask engineers for "thinking-out-of-the-box", creativity – but it does not always help. We add new aspects to the field, like for instance design - but change does not always appear. We introduce new kind of tools and design methods – but they are not always utilized. Still we want, and wish for, innovations and new ways of designing. The need for renewal of industry is tremendous and new kind of products is desperately asked for on the competitive landscape. Herein lies a paradox of enormous proportions embedded in the field of innovation.

In this conceptual paper a management-perspective towards the field of innovation is addressed. Important basic aspects towards the paradoxes embedded in asking for innovations and the introduction of new methods and tools to the field are investigated.

Three aspects are raised in the paper: 1. It is difficult to think out-of-the-box and to utilize new kind of tools and methods if one is not aware of the existing "tool-box" as such. 2. Innovation could more easily be brought forward, and new tools are better utilized, if professionals could be helped seeing their own "tool-box" from the outside. 3. If managers are asking for innovation and implement new tools they must live the message themselves and help employees see their own "tool-box".

2. INNOVATION MANAGEMENT IN PRACTICE: HANDLING PARADOXES

To management, managing innovation is about learning how to live with all the paradoxes existing in the field [2]. Is this a promising new technology? Or should we stick to the old, or to a traditional, one? Is there an existing market for it or could it create a market for us? What will happen to existing products if this new one is being launched?

The well-known creative expert Edward de Bono, like others, strongly believes that tools/methods for supporting creativity and innovation exist [3]. He has formulated methods and tools like "lateral thinking", "mind maps", and "six thinking hats" [4]. Since fertile methods have proven useful and powerful it is reasonable to suggest that students/employees interested in creativity and innovation should learn them. For long it has been claimed that we can train to be more creative and innovative [5].

However, new tools and methods cannot be applied in vacuum. They need a context to be of any utility. There are important problems associated with what is sometimes suggested; a creative competency that might be applied "wherever" and "whenever" and the adaptation of new tools and methods.

One important paradox in practice of innovation management is that people do not always act on their vocally professed preferences for new innovations. Professionals stick with existing solutions and methods even though these are judged insufficient. So what is asked for is not realized because people abstain from acting on what they claim to wish. This phenomenon will be investigated further in the following pages.

However, first of all we have to admit, that the mere idea of trying thinking outside the box and utilizing new tools and methods can be profoundly difficult. Often, this can be the case even though no deliberate or intended resistance has been established. We might not just see any point in trying something different. Our capability for imagining might have its limitations [6].

From a management point of view, all kinds of changes – technological, social, personal – come associated with opportunities connected with innovation. It is, as management guru Richard Norman states: every disruption of an existing convention is fertile ground for innovation and entrepreneurship [7]. It is, however, from a management point often (though not always) preferable to be initiating and leading change instead of being led by it – paraphrasing a change management bestselling book by professor John Kotter [8]. The obvious idea behind such a preference is that management may control innovation instead of being constricted or forced by it. As a consequence, the term control often seems implicitly embedded in the term management as such [9].

When it comes to practice, however, control in the management of innovation often turns into something inherently complex. Resistance to change – an expression that evidently cannot be disassociated from innovation – may, in many cases, be profound.

The sum of this reasoning is that it is important to understand the context for innovation if we want to understand innovation itself, why and how innovations occur; they rarely, if ever, evolve in a vacuum. It is the very context that establishes the agenda for what is possible in a particular situation.

3. THE WELL-EDUCATED SCHOLAR TRYING TO THINK-OUT-OF-THE-BOX

A useful starting point for the understanding the context for many professions is an analysis of the education behind it [10]. Since education aims at developing individuals that later enter/constitute professions education also reflects on major points characterizing the profession. What we learn at school deeply affects our future ways of acting [11].

Neither engineers nor for instance marketing people are always aware of that with a hammer in their hands, they are constantly searching for nails to hammer upon. And since they know how to use a hammer, all problems they encounter are likely to be treated "as if" they were nails. It is most definitely more than a little useful being aware of this fact. Well-educated people might very well be

totally unaware of the impetus associated with their own learning and training.

On a theoretical level one might learn ones profession, and what a box is – and also about the idea of thinking outside the box with the help of new tools and methods. But in practice it is difficult to break out of the box without actually knowing that there is a box at all. In order to know that there even is a box that you have learned about, you must be able to observe it from the outside.

4. SEEING THE TOOLBOX AS A WHOLE – UTILIZING THE CASE OF A MARKETING SCHOLAR

Today, students who learn marketing at school are very seldom taught the basic premises that ruled when the tools they acquire were developed. They learn their tools well, particularly advertising but they do not always learn why the tools were developed into what they are, the circumstances. As a consequence, students easily take what they learn for granted – "as if" (a truth) the only way of doing something.

When looking at marketing education, there are some peculiarities worth addressing and highlighting if we really want to acquire and understand the most frequently applied traditional tools of marketing.

The first peculiarity to be aware of is that most marketing education has its background in ideas and concepts diffused globally during the mid-1900s. In other words, the ideas and tools taught are fairly old. Still, for example, most marketing courses recapitulate the famous 4Ps, which is *the* manifest of marketing ideas and tools from time immemorial (briefly, 4P stands for Product, Price, Place, and Promotion) [12]. They are the "parameters" that a marketer may combine in order to create sales [13]. You might also call them the four major types of tools found when opening the toolbox of marketing.

The 4Ps were established during the 1960s – and are today often referenced to the renowned marketing professor Philip Kotler. He is one of the best-established marketing gurus in modern times. To encounter marketing scholars (even engineering scholars) who has not heard of the 4Ps is rather unusual. Most professionals of today working with trying to bring innovations to a market are aware of the basic ideas behind the 4Ps.

The second peculiarity is that these ideas and tools, contrary to common perception, were developed considerably earlier – in effect, in the early 1900s. So, the concepts that marketing students learn today are not just old – they are *very* old. But the

embodiment of them, the shorthand, the 4Ps, is an overall concept established as late as in the 1960s.

The third peculiarity (and the most interesting one) is that the origins of these ideas and tools evolved when industry was in a shape distinctly different from now.

So, in essence, this implies that most of today's marketing courses still contain numerous ideas from the early 1900s. And we all learn them, and often also teach them, even without knowing their ancient pedigree.

In his well-worth-reading book "The History of Marketing Thought", Robert Bartels demonstrates that the origins of marketing thought developed in parallel to the transformation of an agricultural economy into an industrial one [14]. In the early 20th century, however, it was discovered that demand was made up by more than simple purchasing power, so that companies needed to become more active in order to sell. It was simply not enough to concentrate on distribution (the then-term for what we now call marketing).

At that time, advertising and salesmanship demonstrated that customer demand might be increased by influences other than just the existence of supply. Thus the idea of advertising was developed/invented (so: an innovation), and, as an indicator, the concomitant literature of advertising grew rapidly. More than one hundred and thirty books on the subject of advertising were published before 1905.

Since then, the idea of advertising has taken hold globally (often enough for good reasons).

This, however, implies that the basic concepts relied upon for advertising was developed at a moment when the alternative to action was no action, "doing nothing" - but delivery.

Today, however, the scope (as well as the need) for substitute actions is far broader than that. It goes without saying that other interrelated basic ideas within the field of marketing have developed in a similar way, for instance the idea about segmentation.

Having learned marketing at a school of today, it would sound odd to suggest anything else than investing in advertising when an innovation is being launched [15].

The moral here is, of course, that a well-educated scholar often suggests what he has learned in school. But of even greater importance, the moral is that it is often forbiddingly difficult to think outside the box of "your basic learning". And this goes for every kind of scholar (engineers, designers, lawyers, doctors, business men etc).

5. THINKING OUT OF THE BOX AND ADAPTING NEW TOOLS AND METHODS

What can then a marketing scholar do in a situation given? There are at least three alternative possibilities to offer.

One option is that the scholar deliberately tries to search for something different – deliberately breaking with the tradition of marketing just because a deviation would be noted as different. "If you suggest advertising then I suggest doing no advertising as a starting point". "If you suggest more time spent on technology then I suggest relying upon the technology we already have as a starting point".

Another option is dispensing wholesale with what marketing teaching has taught. "If you suggest advertising then I say: what do you mean by that, what is actually advertising about – in this case"? "If you suggest technology then I say: what do you mean by that, what contribution can technology provide in this case"? This could also be a useful way of proceeding.

A third option is to find out – for yourself – an accurate picture on what actually does work, and does not work, in marketing in your specific field at the very moment. Sometimes advertising *does* work, particularly if you compare it to the option of doing precisely nothing, but sometimes it does not. "What does the situation we have encountered actually look like and what might be fruitful ideas to solve the actual problems we encounter?" "What would the situation look like if we really tried to see it from another angle"? It may be advertising, but it may be something totally different. It may be technology, but it may not be. It may be about design – or again: it may not be.

If a professional decide to go for the third option, you easily end up starting a journey of discovery yourself – and it is probably a journey worth taking. During that journey the professional are likely to be willing to adapt new tools and methods (even maybe inventing them).

As should be noticed however; there is a reason why creative and innovative people sometimes are judged bold and risk taking [16]. The options discussed could most likely imply asking for trouble internally.

It also suggests that managers allowing freedom for such strange ideas when asking for innovation should impress us. In a sense, they are temporarily abdicating from the conventional role of manager. Creativity and innovation might sometimes equate with "letting go", "giving up control".

6. DISCUSSION

The way we understand a business venture is based on the way we analyze it, and the way we analyze it is, in particular, influenced by our prior education and working experience. By that our basic education, implicitly, also forms mental models of management. And as Peter Gärdenfors, professor in cognitive science, has demonstrated: our mental models almost automatically shape the way we act [17].

In conclusion, we may ask: how is it possible for a well-educated scholar to take use of new methods and tools and think out of the box if, for instance, advertising is all that our scholar has learnt in school? The presence of the box called advertising is often so inherent that he or she normally would not even *see* it as a box. Advertising is a tool that he has been taught to master – and of course that leads to it being applied. Would that not imply demanding the impossible?

It might seem straightforward to suggest broader curricula for specialists than those now most often dominating [18]. Why not, for instance, have engineering students attend lectures in history, philosophy, the humanities, and art? Why not let marketing scholars into mathematics or engineering? Why not embed hands-on-training in various courses and concurrently use that training for further learning (not only for what we sometimes call "skills")? Why not have students work for a while at a shop floor in an assembly line "doing manual work", at a design office trying out CAD-CAM, or at a call-center trying to communicate with those "horrible customers"? Or why not have them work at McDonald's restaurants forced to meet the challenge of "creating services with scarce resources" hands-on?

It would definitely create experiences for life and add valuable knowledge assets to the regular curricula (and why not have faculty members share such experiences?).

Experiences from early in life tend to affect an individual's worldview far longer, and more profoundly, than the ones gained later. It would probably also increase the likelihood of the utilization of new tools and methods in the field of innovation.

People tending to think more easily out of the box most often feature a broad knowledge and experience spectrum – why not support its development early in life, at school, in curricula?

If so was made also the likelihood of fruitful adaptation of new design methods and tools also would increase.

7. CONCLUSION

Managing people is most often very complicated – to state the obvious. Managing innovation, deliberately suggesting it to be a concept broader than "managing people", is most often also very complicated – to continue the obvious. Managers interested in creativity and innovation must also live the message of creativity and innovation.

Managers might have tried management in practice and they might also have theoretical models in their heads, explicit or implicit ones (the latter most common), on how to succeed in the management of innovation – even having studied several academic books on the topic [19].

If so, managers might claim (and include in their basic mental model of management) – as engineers sometimes tend to – that technology sets the agenda for the market – and this suggestion does have merit. But one can also claim that markets set the agenda for technology, included in a basic mental model of management, as marketers would be wont to do – and once more the point has merit.

Engineers happily start out from technology – indirectly looking for ways to apply it. Marketing people, on the other hand, often start out with customers – indirectly looking for what these might be interested in. People developing new tools and methods for creativity start of with their tools and methods.

In practice, innovation management often means balancing between what can be wished for, technology, and what is demanded, customers, searching the possible – and occasionally utilizing new tools and methods. It resembles, innovation is standing at the crossroads of engineering and marketing.

A profound comprehension of what mental models underlie the actions of people managers have to "manage" is useful if management aims at facilitating an innovative and creative management culture.

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