

EMBRACING RISK TO PURSUE PRODUCT INNOVATION IN AUTOMOTIVE INDUSTRY

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ABSTRACT

A company's ability to successfully introduce radically new products and services is a key success factor for sustaining competitive advantage. This is particularly true for the automotive industry, where smaller manufacturers with niche products struggle to compete with the large-scale efforts of their bigger competitors, and are thus in desperate need to innovate their way out of the current crisis. A key challenge for companies seeking innovation is how to better understand the role of risk in innovative practice. The purpose of this study is to investigate how managers within an automotive company perceive the concept of innovation and the relation between innovation and risk. The study is based on interviews with fifteen managers representing a cross-section of disciplines. The analysis of the informants' answers resulted in two overarching themes, "*novelty*" and "*value*", which were further broken down into seven sub-themes to highlight different facets of innovation that were raised by managers from these disciplines. While there were many similarities in the perceptions, the most striking differences related to; 1) innovation as being about the "*combination of things to something new*", and 2) innovation as being about increasing "*customer value*". Several informants noted that risk taking is a success factor to achieve innovation, but they also acknowledged that there are several inhibiting factors that are in contradiction with this approach, such as limited time and money. Further the paper has highlighted the crucial challenge of how to effectively balance risk and opportunity to invest in long-term opportunities, without risking short-term growth.

INTRODUCTION

A company's ability to successfully introduce radically new products and services is a key success factor for sustaining competitive advantage (Davila, Epstein, & Shelton, 2007). Arguably, this is particularly true for the automotive industry, where being innovative and providing innovations are questions of survival rather than merely a

matter of staying competitive. The last decade has been characterised by take-overs, mergers and discontinuances in this branch of business, in continuous attempts to gain economies of scale through platform consolidation and various types of joint ventures aimed to achieve increased product coverage without increasing the risk. Principles of lean production (Womack, Jones, & Ross, 2007) have been largely influential in creating increasingly efficient development and manufacturing processes, yet many automotive companies are still struggling to stay alive. In particular, smaller manufacturers with niche products cannot compete with the large-scale efforts of their bigger competitors, and are thus in desperate need to innovate their way out of the crisis.

A key challenge for companies seeking innovation is how to better understand the role of risk in innovative practice. This paper argues that risk needs to be embraced and balanced, not simply reduced, if aiming to improve a firm's innovation capability. The concept of risk needs to be visible not only in strategic activities like product portfolio planning, but also throughout all of the early-stage development processes and activities – to allow the company to simultaneously exploit incremental innovations and explore radical market-changing, or even game-changing, innovations (Benner & Tuchman, 2003; March, 1991). This act of balancing innovation opportunities and risks – considering both short-term and long-term perspectives in parallel – is part of the innovator's dilemma (Christensen, 2006) since companies are required to simultaneously develop both sustaining and disruptive technologies. Also, considering the complexity of interactions between both technical systems and the involved stakeholders, building a car could be seen as a wicked problem (Rittel & Webber, 1973) to which there is no definitive problem formulation and no ultimate test of a solution. As Pavitt (2005, p.88) notes, innovation is *“inherently uncertain, given the impossibility of predicting accurately the cost and performance of a new artefact, and the reaction of users to it.”*

The wickedness of the problems facing automotive companies naturally relates to many factors, such as an increasingly technical complexity in terms of function sharing within components, integration of electronics and mechanical parts, more variants in light of standardization through product platforms, etc. Also, there is an increasing process complexity which relates to the need for decreasing lead times, involving more disciplines, performing more tasks in parallel, making decisions based on preliminary information, etc. (Flanagan, 2007). The interdependence between large amounts of parts and components makes the coordination of the car challenging in itself, and there is also a complex interface to the customer, where the satisfaction and customer value lies not just in transportation but in things which are more subtle and not always known by the user (Clark & Fujimoto, 1991).

The difficulties in predicting future customer needs make it challenging to choose which innovation projects to pursue in the automotive industry. Car consumers, as any other customer, often find it difficult to express their expectations on future car models even if they know what they like with today's products (Clark & Fujimoto, 1991). This issue is hard to handle in the auto industry since the lead-time of a car is proportionately longer than many other consumer products.

Another challenging aspect that is crucial for the continued survival of actors in the automotive industry is environmental concerns. Environmental regulations are already

putting immense pressure on manufacturers, and this pressure will undoubtedly increase in the future. The demand that new technologies should provide solutions for sustainable products in combination with the customers' higher demands for environmentally friendly alternatives will increase the importance of innovation activities.

At the heart of innovation work is the capability to, for example, build on each other's ideas, to combine existing ideas into new solutions or implement existing solutions in a new context. A key to attain such a capability is to develop a shared understanding of what to do, who the users of the innovation will be and in which contexts it will be used (Randall, Harper, & Rouncefield, 2007), but also the team has to agree on what an innovation as such is. A driving force for innovation activities is the intention to change a situation, a thing, a condition or the like into something better. This broad application of the concept makes it possible to view innovation from multiple perspectives, for example from a product development, a process, a marketing or a business model point of view (Moore, 2004). In general, the definition of innovation is something new that has reached a market, but such a simplification does not support understanding. For instance, what is new? And, what is a market? A management point of view recognises that there are at least 15 different constructs that embark from the word innovation, and at least 51 different variants which relates to these (Garcia & Calantone, 2002).

The study presented in this paper assumes that a shared view, or rather awareness of each team member's perception of the term is useful in the practice of innovation activities. Hence, talking the same language increases the possibilities to successfully manage the balancing act of innovation opportunities and risks in day-to-day practice. The purpose in this paper is to investigate how informants from different disciplines within an automotive company perceive the concept of innovation and to discuss how these perceptions relate to aspects of risk, and how it can be better embraced and balanced in pursuit of innovation.

DELIMITATION

This study explores innovation and risk from a single company point of view. However, the informants represent a cross-section of disciplines and functions within the company, what is here referred to as *Vehicle Engineering, Design, Marketing, Purchasing* and *VLE (Vehicle Line Executives)*. The fact that one of the authors of this paper is an industrial PhD student at the studied company is one aspect to consider. This brings the advantage that rich empirical data can be generated. However, the tight liaison with one company also brings a disadvantage since access to other companies is thereby limited. Innovation and risk management are highly considered as intellectual properties within companies and not easily accessed when the researcher is requesting access to a competitive company. Hence, the result from this study is delimited to this case, but the study presented in this paper can, as suggested for further research, provide a basis for comparison with similar companies.

METHODOLOGY

The research project which this study is a part of originates in a company's strive to improve the innovation output of its research and development efforts (R&D), to more closely align product development objectives with both established and emerging market needs, and build a stronger reputation as an innovative brand. This paper

reports on preliminary results from an ongoing empirical study involving data from fifteen managers representing a cross-section of the company's disciplines. The research project was initiated within the domain of Engineering, but the study also includes informants from Design, Marketing, Purchasing and VLE domains, leading to a comprehensive data collection from different perspectives and life-cycle phases.

The research methodology is inspired by an action research perspective, meaning, among other things, that the research is grounded in lived experience, and that the researchers work with (rather than simply study) people (Bradbury, 2003). As noted earlier, the first author is part of the application area as an industrial PhD student employed by the automotive manufacturer described in this study. Further, before embarking on her research studies, the same author has had a professional role as a project manager in the company since 1998, managing advanced projects.

The data presented in this study is derived from semi-structured interviews (Yin, 2009) with fifteen managers from the above-mentioned disciplines on the wider topic of how they perceive innovation. Each interview lasted one hour on average and all of them were recorded and partly transcribed. The analysis of the material has led to the identification of two main themes and seven subthemes, which will be further explored later in this paper.

A THEORETICAL VIEW OF INNOVATION

In general, innovation activities could be described as the efforts to create meaningful and focused change within a company's economical and social potential (Drucker, 1998). Further, innovation has been defined by Popadiuk and Choo (2006) as an idea that has been developed to a product, process or service and has been commercialized. They highlight that, in general, the concept of innovation is often related to the words novelty, commercialization and/or implementation. McDermott and O'Connor (2002) defines innovation as new technology or combination of technologies that offer worthwhile benefits, and they further note that the evaluation of a technology as innovative also needs to be related to existing technologies, both from an internal and an external perspective. According to the Oslo Manual (OECD, 2005, p.46) a minimum requirement for an innovation is that the product, process or method innovation must be *new to the firm*, which includes both innovations that the company is first to develop and those that are adopted from other firms. Following from this argument, an innovation is considered to be *new to the market* if the firm is the first to introduce the innovation on its market (OECD, 2005, p.58).

Thus, the range of innovations could go from the increased performance of an existing product, process or method to the development of entirely new products, processes or methods. For one company, an innovation could be about an incremental product development effort resulting in increased product performance, whereas for another company, innovation could be about major changes to their product portfolio, including a major element of novelty, both from an internal and a market perspective. According to Dewar and Dutton (1986) this range of innovation relates to the notion of radicalness, where *incremental innovation* could be seen as containing a low degree of new knowledge, as is the case with minor improvements or adjustments in current technology. Conversely, *radical innovation* is about revolutionary changes in technology, involving clear departures from existing practice and a high degree of new knowledge. Leifer et al. (2000) notes that a radical innovation is based on new

ideas or technologies that create a new business line or a new product line. Tushman and Nadler (1986) argue that incremental innovation contains changes in form of added features and new versions or extensions to a product line, whereas a radical innovation includes the application of a new technology or a new combination of technologies to new market opportunities.

Christensen (2006) discusses the term *sustaining innovation* in contradiction to *disruptive innovation*. A sustaining innovation does not have a disruptive effect on existing markets but could include both evolutionary (i.e. improving a product in an existing market in expected ways) and revolutionary (i.e. creating a new market by solving a problem in a radically new way) changes. Commonly, sustaining innovations improve customer value by providing a higher degree of product performance. A disruptive innovation, on the other hand, brings an entirely different value proposition to the market that has not existed before.

Jacoby and Rodriguez (2007) suggest three basic models to explain innovation outcomes:

1. *Incremental innovation* – includes existing users and offerings.
2. *Evolutionary innovation* – includes existing users and new offerings or, new users and existing offerings.
3. *Revolutionary innovation* – includes new users and new offerings.

It is argued that these three models of innovation outcomes require different organisation and process, where for example the incremental innovation model demands an execution focus and the revolutionary model requires an explorative focus (Jacoby & Rodriguez, 2007). On a similar note, March (1991) presents the concepts of *exploitation* and *exploration* to cover the range from incremental innovations to radical, market changing innovations, highlighting the importance of maintaining a balance between both perspectives. In the term exploitation, he includes variables like “refinement”, “choice”, “production”, “efficiency”, “selection”, “implementation”, “execution”, whereas in the term exploration he includes variables such as “search”, “variation”, “risk taking”, “experimentation”, “play”, “flexibility”, “discovery”, “innovation”. According to O’Reilly and Tuchman (2004) it is the ambidexterity, the ability of a company to simultaneously exploit and explore, that enables a company to adapt over time to changing conditions.

Dougherty and Hardy (1996) indicate that large companies tend to emphasize implementation of incremental innovations, which are perceived to bring low risk and immediate reward, rather than exploration of radical innovations. Radical projects involve a higher degree of uncertainty and risk, and the results are unpredictable, but the potential rewards are also higher (Leifer, et al., 2000).

The level of knowledge about how to successfully manage product development activities with the aim of achieving radical innovation outcomes is much lower than in the field of managing incremental innovations (McDermott & O’Connor, 2002). Leifer et al. (2000) argue that executives in large, established firms are not familiar with how radical innovations appear or how the process looks like, which results in a situation where radical innovations are poorly managed.

In the context of this paper, we have chosen to emphasize the relation between innovation and risk, to ultimately improve the understanding among managers that not all risk should be avoided. Rather, as Tushman and Nadler (1986, p.76) put it, as discontinuous innovation increases the risks and uncertainties that companies face, it becomes “*increasingly important for organizations to function as effective learning systems, benefiting from both failure and success.*”

THE COMPANY: A CASE DESCRIPTION

Background

Saab, Svenska Aeroplan Aktiebolaget (roughly translated as Swedish Aeroplane Limited), began as an aircraft manufacturer in 1937 but the company started to develop cars after the Second World War. The first development team consisted of 16 specialists, compared with today’s car projects which in the execution phase contain hundreds of people. Saab has a heritage as an innovative company with innovations including the turbo, headlight wipers, and heated seats. The introduction of headlight wipers affected the whole automotive industry since the ability to clean the headlamps became a standard and a law requirement. The turbo is perhaps the most famous and successful innovation in the history of Saab. It is an innovation that is based on a technology that already existed, mainly in trucks. The innovation that made things work for consumer cars was the waste gate valve made by Saab engineers. This technology reduced turbo lag and made the turbo more reliable and manageable. Today almost all automotive companies provide cars with turbo but Saab was first with the technology and it probably rescued the company at that time. Saab has always had a bit of eccentricity in different technical solutions and in the design. One example of this is the combi coupé, a signature body style that separated Saab from both sedans and station wagons. Another example of a signature design feature is the position of the ignition switch in the floor console. From a user perspective, Saab would argue, it is right where it becomes readily available, it is easy to see and reach. Another important reason for this placement was the avoidance of knee impact injuries, which was beneficial from a safety point.

The innovation heritage is also seen in the product’s brand where the innovation approach is intended to affect the three product pillars; (1) *progressive design*, (2) *sporty, driver focus*, and (3) *responsible performance*. The product pillars are the support that strengthens and characterizes the Saab brand. These product pillars are built on the culture of independent thinking and are originated from the brand’s DNA, which, as for humans, is unique.

In general, the automotive industry could be considered a mature branch of business, exposed to high competition with large complexity due to a large amount of consisting components and functions, with demanding pressures on reducing lead-time and cost while improving quality. As is the case with several other automotive companies, the lean wave has not been enough to stay competitive. Furthermore, as part of a recent acquisition deal in the midst of global financial turmoil the company has undergone a challenging period of restructuring and change. At the same time, this challenging situation has brought with it rare opportunities to radically rethink the research, development and innovation strategies to more effectively address the challenges of an extremely competitive market and seize new potential growth opportunities.

Product development

At Saab, all new car project teams consist of representatives from different domains, such as engineering, design, manufacturing, marketing, purchasing, quality, planning, testing and so forth. These people are working together from the start to the end of a project. In literature, this approach is commonly described as Integrated Product Development (Andreasen & Hein, 1987), which refers to an effective way of working where parallel activities are performed and where deep integration is ensured by cross-functional teams (Wheelwright & Clark, 1992). To support a focus on customer needs, the car is divided into several characteristics, for example handling, fuel economy, seat comfort, safety, drive quality, versatility. During the project life-time, these characteristics are applied to track and assure the fulfilment of customer needs.

Commonly, a product platform (Meyer, 1997) approach is vital in automotive companies, since different companies or brands aim to increase commonality of parts and components through a shared platform in an effort to reach scale advantages. A product platform is a set of common subsystems from which product derivatives could be developed, and the platform also includes interfaces between the subsystems (Meyer, 1997). The advantages of applying product platforms include increased speed in the development, ultimately reducing cost and lead-time, but also it provides for an increased flexibility in terms of targeting different market segments with a single basic platform (Muffatto, 2000). From a risk management perspective, the product platform approach contributes to lowering risk, but also, from the perspective of uniqueness and innovation, the sharing of components could increase the risk that the product loses its identity (Robertson & Ulrich, 1998). For Saab, with its commitment to eccentricity, the balancing act between commonality and uniqueness is momentous when planning the platform development.

Saab has so far utilised a development process called *Vehicle Development Process* (VDP). It is a stage-gate (Cooper, 2001) process, which could be defined as a roadmap for the phases and control gates that project leaders and teams need to move through when getting from idea to launch. In light of the acquisition by Spyker Cars, the development process is under review, with one of the key questions being how to raise the level of innovation in Saab cars.

PERCEPTIONS OF INNOVATION: EMBRACING RISK TO PURSUE PRODUCT INNOVATION

In the interviews, the informants expressed their perceptions of the overall concept of innovation. All of the informants are managers from different levels and disciplines, but common is that they all work closely with the product and the development of the product and are thus using the term innovation in daily use. Many of them are also involved in innovation projects concerned with, among other things, how to improve implementation of innovations in the Saab product portfolio. The structural analysis of the informants' answers resulted in two overarching themes with seven subthemes (Table 1).

Table 1 Themes and subthemes crystallised from the structural analysis of the interviews with managers in the company.

| Theme | Subtheme |
|----------------|--|
| Novelty | Something new |
| | New to firm |
| | New to market |
| | Combination of things to something new |
| | New application of existing technology |
| Value | Customer value |
| | Product value |

The above themes and subthemes are presented in following sections, using quotations from the informants to highlight the key perceptions of innovation that arose from the interview material.

In the analysis, the concept of risk in relation to innovation emerged as both an inhibitor and facilitator, which leads us to follow-up each of the above themes with a discussion on the role of risk in innovative practice.

Novelty

The concept of novelty, i.e. the quality of being new, is inherent in the common view of innovation, and the informants in this study also closely relate their views of innovation to the term “new”. However, the informants have all alluded that there are many layers to that term, since novelty alone is not a good enough performance metric when building cars for an enormously competitive consumer market. In the interviews, they have highlighted the term within different contexts, which will be described below:

Something new

In the discussion of a general perception of innovation, one informant from Vehicle Engineering said that:

“An innovation is when you create something new. Something that is improved from what I have today.”

The informant includes both the words “*new*” and “*improved*” in the explanation. Another manager from Vehicle Engineering made a similar statement:

“A new function, which is appreciated and noticed.”

Both informants imply that an innovation is something new and better compared to what exists today. This is a common view among informants from different disciplines. As one informant from VLE expressed it:

“It has to be new thinking to achieve something new or do something in a new way.”

Similar to the previous definitions, this definition states that it should be something new, but adds that it could also be about doing something in a new way. An

innovation will then not only be a product or a function, it could also be a new activity or a new method. The same opinion came from an informant from Purchasing:

“A product, a method or an activity which is innovative and which no one has devoted oneself to before.”

Further, this informant added:

“It has to be useful for humanity.”

The notion of new and useful for humanity can be exemplified by the *Saab Active Head Restraint* (SAHR) system, which started as a joint venture project together with the supplier of the seat, another automotive company and two universities in Sweden with the aim of better understanding the circumstances around whiplash injuries. When the injury mechanism had been analysed, and a test method together with a crash test dummy had been developed, the companies went their separate ways to find a solution to the problem. Saab developed a head restraint that is moving upward and forward to catch the head as it begins to move backwards, which was documented as reducing the risk of serious neck injuries in rear-end collisions by 75%.

This type of innovation projects could generally be perceived to introduce a higher degree of risk in the development projects. First, the resulting technology is entirely new and has thus not yet been used in the new context. Second, the methods and approaches applied in developing the product or technology are also often new and not previously tested within this specific context (e.g. new test methods). Third, developing products that are ultimately going to be used by people in a wide range of demanding traffic environments implies that the consequences could be severe if something goes wrong with the product in use. Safety is of utmost concern, and the whole notion of embracing risk in such a context is very challenging – it is not only a concern about lost time and money but, first and foremost, a concern about driver safety.

Further, it seems like the novelty aspect could be somewhat relative. Even if most of the informants first mentioned “new” in the sense that innovation is equal to complete novelty, they later elaborated on their answers to conclude that innovation also could be a combination of known and/or new technologies, or application of known technology to a new use context, or even the introduction of technologies, processes and methods that have previously not been used within the company.

As one informant from VLE expressed it:

“The question is how new it must be to qualify as an innovation? It is more about how people perceive the news value.”

New-to-firm and new-to-market

When exploring the concept of novelty further, one informant from VLE reasoned about how novelty depends on context and how it differs depending on if you embrace an internal or an external perspective:

“It does not have to be first on the market. It can be first for our company, but still bring some novelty to the customer.”

This means that the novelty aspect could also be related to how the technology or product is perceived by the customer. Something that is a new addition to this particular company could bring a considerable news value to the customer, and could therefore be defined as an innovation even if it exists in another company or market. It is interesting to note that the informants differ in their opinions on new-to-firm and new-to-market innovation. Another manager, also from VLE, stated that an innovation could be about the implementation of an existing technology that is not used in the automotive industry today, but add that if it has already been introduced in another car company it is not an innovation. The perception that innovation is about providing something new to the market is also expressed by an informant from Vehicle Engineering, although there is no explicit reference to whether or not the innovation has to be new to the world:

“An innovation should be something new on the market...something nobody has made before.”

Another manager from Vehicle Engineering explicitly mentioned the market perspective:

“An innovation is something new - preferably new to the market.”

However, the same informant continued:

“In some cases it could be something done for the first time at the company.”

The above statements imply a duality in the perception of innovation with regard to novelty to firm and novelty to market. Taking into account both the technical and market uncertainty related to radical innovations, we can assume that there is a higher risk involved with both new-to-market projects and new-to-firm projects, compared to incremental innovation projects. This is partly because the level of new knowledge that is required is high in both situations. While some new-to-firm projects can take advantage of existing benchmark technologies and existing feedback related to customer experience, differences in context can still mean that some of these results are of little or no use. If a technology does not previously exist on the market, the response from customers is non-existent, and experiences from other fields of application arguably do not add considerably to the understanding of the technology's potential in a new context.

Combination of things to something new

Another perspective on novelty is the combination of new or known things to something new. Some of the statements made by informants on this topic include:

“Combine things to get a new product or process.”

“You combine to get something new.”

“Produce something new that is better by combining two things.”

“Combine known things in a new way.”

This perspective was frequent in interviews with informants from Vehicle Engineering but was not highlighted by informants from other disciplines, which could relate to the company being technology-intensive and developing complex technical products (albeit for use by humans in a social context). Arthur (2009, p.19) notes that technologies inherit parts from the technologies that preceded them, and that new technologies must also come into being as combinations of what already exists. As noted earlier, the turbo is an innovation that is based on a technology that already existed, mainly in diesel trucks. The waste gate valve designed by Saab engineers was combined with turbo technology to reduce turbo lag and achieve a more reliable outcome. This example is also interesting from a risk perspective, because this was a project that was largely driven outside of the formal development process, by engineers that had a strong belief in the idea and were given enough freedom to explore a larger solution space.

New application of existing technology

Closely related to the combination of existing technology is the new application of existing technology, which means that technologies that already exist are brought into new application contexts. As two informants from Vehicle Engineering said:

“...use something known in a new context so that it is perceived as an innovation for a new group of people.”

“New, smart and simple, often with available and known technology – a new application by known technology.”

Such an innovation perspective could also fit in the new-to-firm category, as one informant from VLE noted:

“An application which is not used in our industry today.”

One example of a Saab innovation based on the application of known technology in a new context is the headlight wipers. These wipers were already used to clean the windscreen so why not use the same technology to clean the headlights? Although it was difficult to foresee the market reactions on such an innovation, the introduction of headlight wipers ultimately affected the whole automotive industry since the ability to clean the headlights became a standard and law requirement. Similarly, various types of sensors used in the automotive industry, such as those used for rain detection, parking assistance or tire pressure monitoring, could thus be seen as new-to-market innovations, even if the technologies had been used in other industries for other purposes. Similarly, the accelerometer, proximity sensor and ambient light sensor used in the iPhone has helped revolutionize the way we use mobile phones today, but part of the innovation came from combining these technologies to create a whole new user experience. This point to the importance of not locking in to a specific technology to the extent that you lose focus on the need it fulfils or the experiences they stimulate.

Value

Understanding how customers perceive the innovations that Saab produce was a natural follow-on discussion in several of the interviews with people primarily coming from the Market, Design, and VLE domains. The discussions about innovation usually led into the second theme in the analysis – “value” – where the informant’s perceptions of innovation centred on the concepts of customer and product value.

Customer and Product Value

One informant from Market expressed innovation as:

“Something that enhances the experience surrounding the brand, strengthen management of the car or give the customers benefits.”

The informant continued the argument that the aim is to offer the customer something that provides benefits, which could be, for example, improved fuel economy. According to this informant, an innovation is something that strengthens the customer experience around what you offer in a way no one else has done before. One manager from Design defines innovation in a similar way:

“Novelty which will give an increased value to the product and above all gives the customer added value.”

The informant adds that from a design point of view it has to bring in something new. A new design of a wheel or a door handle is not defined as an innovation. The informant continued that customer value and benefit is essential and is something they have used as a definition of innovation. This opinion is similar to what one informant from VLE expressed:

“It is from customer value you can identify if it is an innovation or not.”

The informant further mentioned that an innovation is associated to something that could be communicated to the customer. Customers continuously expect new products and a new product that provides increased customer value will provide major impact as an innovation. The informant noted that there are innovations that customers do not see or directly experience and such innovations are more difficult to communicate. One such example is an improved crash beam which ultimately gives the customer better safety performance, but which is harder to communicate to customers compared to, for example, a night vision system, since the crash beam value is not experienced by the customer in the daily use of the car

One of the complementary issues of discussion around value, as raised by some of the informants, was the difficulty of knowing what the customers will value in five to ten years. They realized a major challenge in being able to foresee the demands and needs of future customers, which is related to the risk of extrapolating current market trends and user experiences, assuming that these are stable in the long-term. While incremental projects, with a relatively short time-to-market horizon, could lean on market research, Trott (2001) means that market research could even prohibit radical innovations. Consumer research can just improve the understanding of what the customer thinks and does right now but cannot adequately predict how the consumer will act during different circumstances (King, 1985).

Embracing risk

Many informants have expressed that innovation is closely linked with creativity and daring to step out of the comfort zone. One informant pointed out that embracing risk is partly about adhering to the innovation strategy that you have committed to, even if the immediate results might not be as great as expected:

“If you don’t dare to take risks and stand to made decisions it dries out the organisation.”

Another informant also noted the importance of continuing on the explorative path to innovation, even if you find yourself in the highly uncomfortable situation of being faced with high ambiguity and uncertainty both with regard to what to do next and what outcomes to expect:

“To achieve successful innovations it is important to make uncomfortable decisions, which could be difficult since you do not know what you get and you will risk more.”

In this context, embracing risk is not about completely disregarding risk and letting development teams run wild. The demands on efficiency will always be there, making it crucial for companies to deploy lean production and stage-gate approaches. However, these efforts should not be seen as aiming to diminish time for innovation, or to completely eliminate risk. Rather, such approaches could be seen as complementary ways to reduce waste of time and resources – thereby increasing the available capacity to focus on the core business of creating innovations. However, one needs to be aware that a too narrow perspective on lean and controlled approaches tends to overestimate the value of executing things according to plan, and underestimate the value of exploring fringe ideas that can turn into major business opportunities in the long-term.

Related to the above quotes, the informants further said that it is important to dare making decisions about starting and running projects that come with a larger risk element, and having the tenacity and confidence to avoid terminating such projects at times of crisis. Partly, this relates to giving people the permission to work on their ideas, even if the return-on-investment is not immediate, to create time and resources for such creative work, and to encourage people to continuously challenge assumptions, conventions and “truths” as part of their everyday work. As one informant said:

“Innovations happened because somebody was creative and not only did one’s job.”

Keeping in mind the potential innovation aspects related to being lean, a lean organisation arguably has the tendency to focus more closely on the execution of daily business and pursuing incremental innovations, thus putting less attention to the exploration of advanced, long-term projects. There is a propensity to focus on here and now. This is a known problem in many companies, how to balance the relative potential of short-term and long-term success. As one informant expressed it:

“When something happens, the long-term projects are no longer prioritised.”

Despite the lean movement in the industry there must be room for long-term projects with greater uncertainties. The long-time horizon will most likely result in an increased uncertainty and also a greater risk that the project can “fail” in the sense that the project results cannot be immediately implemented in a short-term car programme. Embracing risk shifts the perspective from talking about “failure” to talking about “learning” – building up knowledge and capabilities within the company, which can lead to the successful innovations in upcoming car projects.

CONCLUDING REMARKS

This paper has discussed how managers from different disciplines within an automotive company perceive the concept of innovation and the relation between innovation and risk. The analysis of the informants’ answers resulted in two overarching themes, “*novelty*” and “*value*”, which were further broken down into seven sub-themes to highlight different facets of innovation that were raised by managers from different disciplines. While there were many similarities in the perceptions, the most striking differences related to; 1) innovation as being about the “*combination of things to something new*”, a perspective that mainly was found to be relevant by informants from Vehicle Engineering, and 2) innovation as being about increasing “*customer value*”, which was a common statement mainly by informants coming from the Market and Design domains.

Several informants noted that risk taking is a success factor to achieve innovation, but they also acknowledged that there are several inhibiting factors that are in contradiction with this approach, such as limited time and money to explore new ideas in an increasingly lean environment, and a general tendency to focus on short-term rather than long-term effects in the face of crisis.

The paper has highlighted the crucial challenge of how to effectively balance risk and opportunity. A risk can also be turned into an opportunity, and failure can be a way of learning through experimentation. With regard to balancing everyday engineering activity with innovative exploration activities, there is also a need to better understand how to position product development efforts, with regard to the exploit/explore dimensions, to invest in long-term opportunities, without risking short-term growth.

MANAGERIAL IMPLICATIONS

The findings in this study can serve to raise the awareness of how people from different disciplines in an automotive enterprise might perceive the process, and expected outcomes, of innovation. For instance, it is important that managers are provided with a deeper understanding of the different layers related to innovation, such as the different connotations of “*novelty*” and “*value*” in different contexts. Further, managers need to increasingly recognize the importance of creating time and resources so that people can, in parallel with their daily business, be allowed to pursue new ideas and be encouraged to challenge assumptions and conventions. In summary, they need to embrace risk and regard short-term failure as an important learning opportunity to be able to build up knowledge in the company for long-term innovation.

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