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Idea Management at Volvo IT

- Improving the Front End of Innovation

Master of Science Thesis in the Master Degree Programme Management and Economics of Innovation

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Göteborg, Sweden, 2010

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ABSTRACT

One of the key paths for companies to create value is through innovations, which is ideas that have been developed and implemented successfully. The aim of this master thesis is to determine how Volvo IT can improve their idea management practices to extract more business value from innovations. More specifically, the purpose of this case study is to identify improvement opportunities in the front end of the service development process, from idea creation and capture to assessment for the launch of a full-scale development project. The information on the current idea management of Volvo IT comes from a large number of qualitative interviews with members from different parts of the organisation. This data is analysed based on an analytical framework built on previous research within the area of idea management and innovation in global matrix organisations. The findings reveal that Volvo IT is an organisation with a quite creative climate in terms of corporate culture but with few formal practices and tools that support idea generation and collection. Identified opportunities for improvement include idea creation and capture events, and an idea management system easily accessible for the whole organisation. The company is also recommended to more clearly communicate internally what kinds of innovations that are desirable, start rewarding ideas in a way that increase creativity, and making sure all geographical sites are included in the innovation processes. Regarding idea assessment and selection, the current practices is somewhat unclear and improvement suggestions in this area consist of defining and describing the process, and ensuring the use of appropriate decision criteria in them.

The report is written in English

Key words: front end of innovation, idea management, idea generation, idea collection, idea selection

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We began our search for a master thesis in the fall of 2009. Eager to put our education to the test we were hoping to find a challenging project that would be of strategic importance to the firm in question. When we came into contact with Volvo IT and learnt that innovation was a recent addition to their strategic focus, we realised that a project there would be exactly what we were looking for.

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Maria-Lina Hedlund
Cajsa Johansson

“JUST AS ENERGY IS THE BASIS OF LIFE ITSELF, AND IDEAS THE
SOURCE OF INNOVATION, SO IS INNOVATION THE VITAL SPARK OF
ALL HUMAN CHANGE, IMPROVEMENT AND PROGRESS”

TED LEVITT, FORMER EDITOR HARVARD BUSINESS REVIEW

1 INTRODUCTION

The first part of the introduction accounts for the background of the study including general information about Volvo Information Technology. Thereafter the purpose of the study and the guiding research questions are presented as well as the study's main delimitations. Finally, the disposition of the report is presented.

1.1 BACKGROUND

Core competencies are different for every organization; they are, so to speak, part of an organization's personality. But every organization — not just businesses — needs one core competence: innovation. (Drucker, 2006, p.108)

Although most companies are aware that innovation is one of the key paths to growth, many do it by accident and just hope that someone will come up with an idea and exploit it. This approach is not enough to keep up with the business climate of today when companies need to generate and implement more ideas than ever before to stay competitive. What is needed is a sustainable approach for generating, capturing, and evaluating ideas before they can be developed. (Hering & Phillips, 2006) Numerous studies have shown that the most significant factor for developing successful products is the quality of execution of the early steps in the innovation process (Stevens and Burley, 2003).

Innovations are ideas that have been developed and implemented, which implies that innovative firms need to have a durable flow of ideas to choose from for implementation. All these ideas originate from individuals and to be able to benefit from ideas they have to be made explicit and shared with the organisation. (Björk & Magnusson, 2009) In the next step, deciding which projects to pursue in an organisation is a difficult task with potentially large consequences. Information technology companies waste over 50 billion USD a year on development projects that create services not used by the intended customers. (Pinto, 2007)

In the role as IT service provider Volvo IT have to provide its customers with IT solutions that do not just provide business value but are also cost-efficient. To be able to effectively do that Volvo IT has realised the importance of innovation and made it one of the strategic focus areas for the company. To improve innovativeness Volvo IT has identified several areas in the service development processes that should be addressed, including the early phases and the overall lead time. Decreasing the lead time to decrease time-to-market for new services would not be unfamiliar to what they were already working on in operational excellence initiatives, especially since service development at Volvo IT already follows a well-structured stage-gate model. The front end of the service development process was much less well-described and managed. Therefore, this study was launched to map and improve those practices.

The goal of this master thesis is to find out how Volvo IT can improve within the area of idea management to become more innovative and make better use of innovations as potential sources of business value.

1.1.1 VOLVO INFORMATION TECHNOLOGY

Volvo Information Technology AB (in this report referred to as Volvo IT) is a large, global company that offers industrial IT solutions, telematics services, and consulting services (Volvo Group Intranet Violin, 2010A). The company is a wholly-owned subsidiary of AB Volvo which is one of the world's leading suppliers of commercial transport solutions (Volvo Group Intranet

Violin, 2010B). In 2009, Volvo IT achieved sales of SEK 7,4 billion globally with 5,000 employees (Volvo IT webpage, 2010A) with headquarters in Gothenburg and sites spread all across the world with a majority of the employees located in Sweden (Volvo Group Intranet Violin, 2010C).

AB Volvo, the corporation which Volvo IT belongs to, is one of the world's largest producers of trucks, buses, and construction equipment and holds a leading position in the fields of marine and industrial power systems and aircraft engine components. Moreover, the Volvo Group also offers its customers financial services. (Volvo Group Intranet Violin, 2010B) The Volvo Group has a little over 90,000 employees, production facilities in 19 countries, and sales activities in some 180 countries (Volvo Group Intranet Violin, 2010B) with a yearly total sales of about SEK 300 billion in 2008 and SEK 220 billion in 2009 (Volvo Group webpage, 2010A).

The Volvo Group has a matrix organisation made up of product-related business areas and supporting business units. The business units are global and created to combine expertise in key areas. They have the overall responsibility for product planning and purchasing, and for developing and delivering components, subsystems, services, and service and support to the Volvo Group's business areas. This structure also aims at creating economies of scale in areas such as product development, production, parts supply and logistics, administration and support functions. (Volvo Group Intranet Violin, 2010D) Already in 1967 the Volvo Group gathered its IT operations together in a separate company for the first time. In 1998, the current global Volvo IT was created as one of these business units (Volvo Group Intranet Violin, 2010E). As can be seen in Figure 1 the company serves all business areas in the Volvo Group. What is not displayed in that illustration is that Volvo IT also serves the other business units in the Volvo Group in addition to some external customers (Volvo Group Intranet Violin, 2010F).

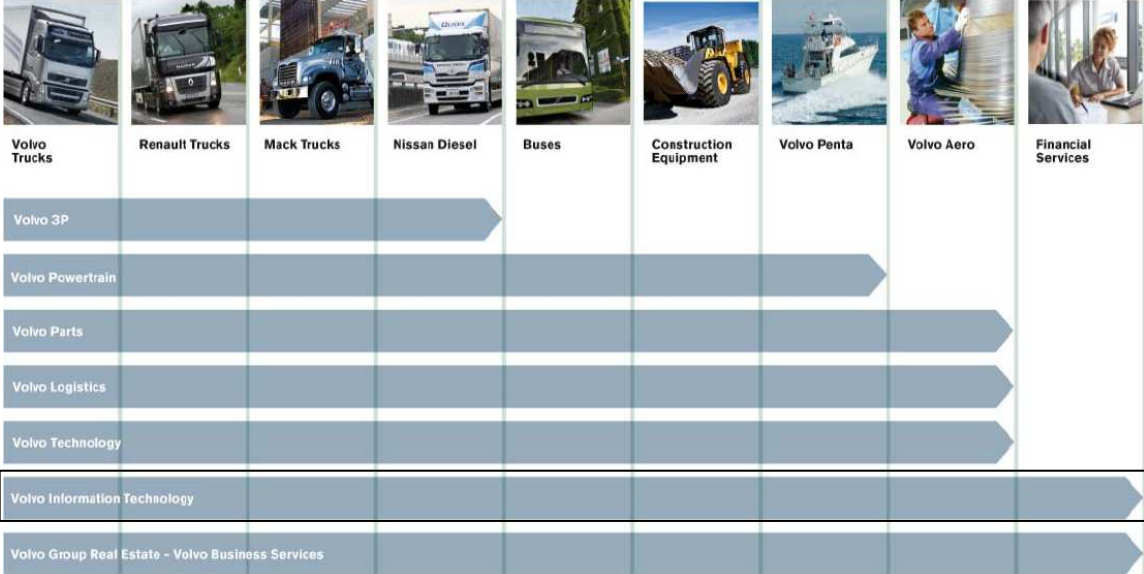


FIGURE 1: THE VOLVO GROUP ORGANISATION

Volvo IT provides a full range of services for the entire industrial process from product development and manufacturing to sales, aftermarket, and administration including IT operations and infrastructure (Volvo IT webpage, 2010B). This means development, operations and maintenance of complex industrial IT systems. The company also delivers off-the-shelf enterprise solutions and standardised global services aimed at enabling increased individual productivity and collaboration between co-workers. (Volvo IT webpage, 2010C)

The purpose of Volvo IT is to provide the Volvo Group with competitive IT solutions and services but for reasons such as economies of scale and increased learning, the company also has

external customers (Volvo IT webpage, 2010D). Volvo IT customers outside the Volvo Group include among others Volvo Car Corporation, SCA, Assa Abloy, and the City of Stockholm (Volvo IT webpage, 2010E).

A major re-organisation of Volvo IT took place in 2009 and the new organisation is divided into several global functions, see Figure 2 (Volvo Group Intranet Violin, 2010G). The *corporate functions* handle finances, human resources, marketing and communications, and strategy and operational excellence. The purpose of the *Customer Relations & Sales* (CR&S) part of the organisation is to maximise business value for customers and manage the development of the Volvo IT business. Then there are five *Solution Units* (SUs) that capture business requirements and translate them into IT solutions. The five Solution Units are Product Development (PD), Sales to Order (StO), Order to Delivery (OtD), Delivery to Repurchase (DtR), and General Solutions (GS). *Application Delivery* (AD) is responsible for the development, maintenance, and support of business application solutions. *Infrastructure & Operations* (I&O) then secure customer delivery and service quality as well as product quality and productivity. Volvo IT has gathered Asia/Pacific integration activities in a separate function called APAC Integration with the aim to prepare all included locations for the handover of Volvo IT global functions while also supporting the Volvo Groups business areas and business units operations in the APAC area. Finally, *Fortos Management Consulting* is a part of the organisation that provides management consulting services for the whole Volvo Group. (Volvo Group Intranet Violin, 2010H)

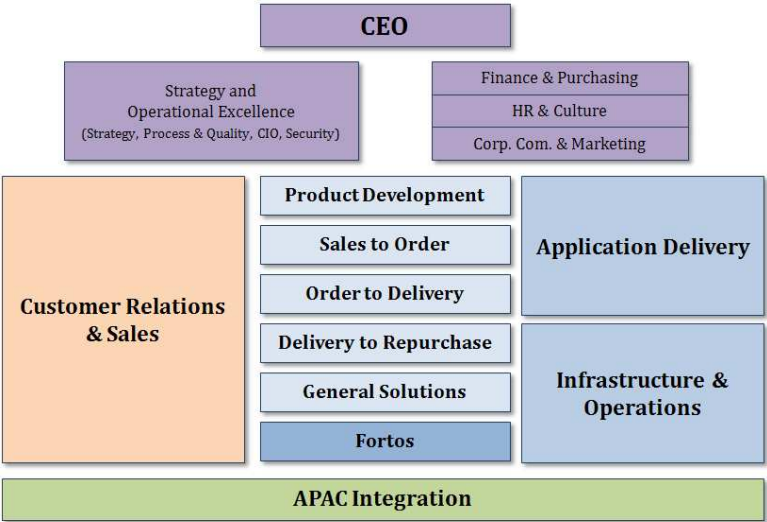


FIGURE 2: VOLVO IT'S ORGANISATION

1.2 PURPOSE

In the role as IT service provider Volvo IT strives to deliver cost-efficient IT solutions that will provide long-term business value for their customers. One of the challenges is to capture ideas or business requirements and translate them into value adding customer offers at an increasingly rapid pace.

This master thesis aims to determine how Volvo IT can improve within the area of idea management to make better use of innovations as potential sources of business value. The purpose is to identify improvement opportunities in the front end of the service development process, from idea creation and capture up until the launch of a development project.

1.3 RESEARCH QUESTIONS

In order to be able to fulfil the purpose of this thesis, the following research questions need to be answered.

- How can Volvo IT improve idea management in the front end of the service development process?
 - What are the current sources of ideas for new customer offers?
 - Are there other potential sources of ideas?
 - How can Volvo IT expand the base from which ideas are gathered?
 - How does the current mode of operations stimulate the generation of ideas for new customer offers?
 - How can work processes be improved to better stimulate idea generation?
 - What new tools or methods can be implemented to stimulate idea generation?
 - How are ideas for new customer offers currently collected?
 - How can the tools or methods for idea collection be improved?
 - How are ideas assessed and selected for further consideration for a full scale development project?
 - What are the implications of this assessment in terms of launched projects?
 - How can this selection process be improved to facilitate the launch of development projects for promising new services?

1.4 DELIMITATIONS

This study is limited to Volvo IT and it is mainly the internal environment of the company that is examined. To gain a better understanding of the situation and the topic, a wider study could have been conducted involving for instance Volvo IT's customers and the corporate group the company belongs to. How customers perceive Volvo IT and how they see their role in idea generation and selection at Volvo IT is not covered in this study. How the AB Volvo, the owner of Volvo IT, see innovation and idea management in Volvo IT could also have given a more complete picture but is not included due to time constraints. Furthermore, examining how competitors manage ideas could have been valuable for a comparison purposes but has not been included in the scope of this study.

Another limitation is the focus on the front end of innovation. This implies that later stages of service development are not assessed, even though they also are pertinent parts of the innovation process. Finally, even though the influence of some roles in idea management processes are acknowledged, specific individuals in Volvo IT and their affect on idea generation, collection, or selection have not been studied. Instead the focus lies on internal practices and processes, however both formal and informal ones.

1.5 DISPOSITION

The report is quite extensive, and efforts have been made to create a clear and consistent disposition to facilitate for the reader. In order to increase the readability even further, summaries and syntheses are available regularly throughout the report.

The first chapter is the *Introduction*, providing the reader with background information on the topic of the thesis as well as on Volvo IT. Chapter 1 also presents the purpose, research questions, and delimitations of the study.

The second chapter accounts for findings from *Previous research* relevant to fulfill the purpose of this thesis. The chapter is divided into five parts, starting with four aspects of idea management; sources of ideas, idea generation, idea collection, and idea selection. The fifth and final section presents previous research on the impact organisational characteristics have on innovation.

The previous research creates a foundation upon which to build an *Analytical framework* which is presented in the ensuing chapter of the report, chapter 3. The analytical framework follows the same structure as the chapter on previous research, starting with sources of ideas followed by idea generation, idea collection, idea selection, and finally the organisational perspective with innovation in a global matrix organisation.

The fourth chapter, *Methodology*, accounts for and motivates the design of the study; how data was collected and analysed. The study should be designed to be able to answer its research questions and fulfil its overall purpose, all of which were presented in the introduction of the report. Thus, both the methodology chapter and the previous research chapter both draw on the first chapter of the report, see Figure 3.

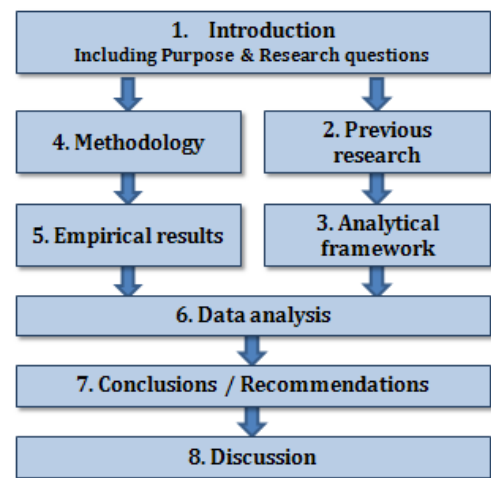


FIGURE 3: DISPOSITION OF THE REPORT

The data collected is made available to the reader in the fifth chapter containing the *Empirical results* of the study. The first four sections of this chapter match the first four sections on idea management in the analytical framework. The data corresponding to the fifth part in the analytical framework, the organisational characteristics of Volvo IT, is partly merged in the previous four parts but mainly presented in the introduction of the report.

The *Data analysis* chapter, where the empirical analytical framework is applied to the empirical results is also divided into the same four parts; sources, generation, collection and selection of ideas. The analysis reveals areas of improvement for which improvement suggestions are presented in chapter 7, *Conclusions / Recommendations*. The subsequent *Discussion* chapter addresses, among other things, the implications of the findings, and the extent to which the findings could be of interest to firms other than Volvo IT. The very last two chapters consist of a *List of References* and *Appendices* with interview guides, list of interviewees and a list of acronyms used throughout the report.

2 PREVIOUS RESEARCH

This chapter contains a review of research in the field of idea management including sources of ideas, idea generation, idea collection, and idea selection, as well as and innovation in an organisational context.

Innovation can be described as ideas that have been developed and implemented. This perspective implies that to be innovative, firms need to have a durable flow of ideas to choose from for implementation. The starting point for these ideas is an individual's new insight and to turn this insight or idea into an innovation it has to be made explicit so it can be shared within the organisation. Björk & Magnusson (2009) also stress that innovative firms cannot rely on a few individuals or a specific function to be the sole source of ideas; instead ideation requires the involvement of everyone in the business as well as affiliated external individuals.

Stevens & Burley (2003) have by studying three distinct information sources found a common pattern or success rate for ideas, see Figure 4. The three sources are project literature, venture capitalists' experience, and the tracking of the commercialisation of patents. The success rates found in the three cases were remarkably similar and predict the commercial success for completely new products to be one in 300 at the idea submission stage and one in 125 at the pre-study stage (or after a patent are granted).

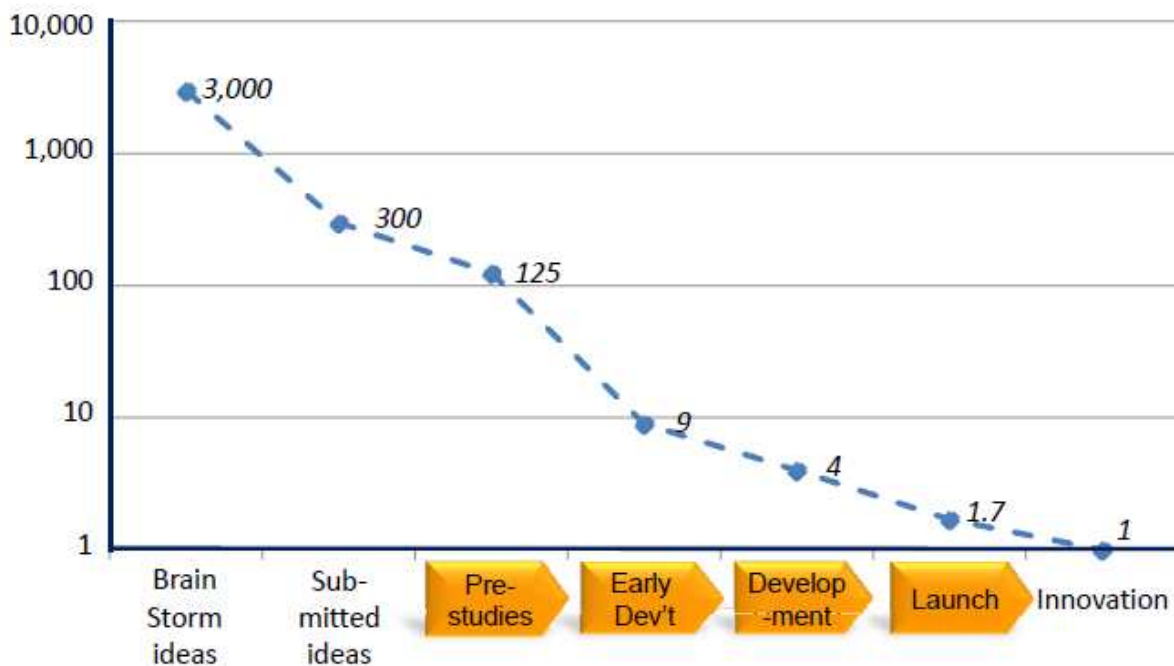


FIGURE 4: NUMBER OF IDEAS PER SUCCESSFUL INNOVATION (STEVENS & BURLEY, 2003)

Hence, to really be innovative firms need a sustainable flow of ideas. To get that it is not enough to only consider an assigned department as the source of new ideas. Furthermore, in order for the whole organisation to generate ideas an appropriate company culture, structure, and processes are needed. Then, to be able to turn good ideas into innovations, ideas have to be made explicit, shared with the organisation, and finally selected for development.

2.1 SOURCES OF NEW IDEAS/INNOVATIONS

New ideas are often revealed and exchanged through regular, informal, in-person communication between individuals from different functions. This can be achieved by joint problem-solving meeting but also, for instance, by locating people from different departments close to each other. (Afuah, 2003)

Afuah (2003) identifies two types of sources of innovation; functional and circumstantial. Functional sources include the internal value chain, competitor spillovers, customers, and universities while circumstantial sources can be planned firm activities, unexpected occurrences, or societal changes.

2.1.1 FUNCTIONAL SOURCES OF INNOVATION

If innovation starts with individual insights or ideas, the functional sources of innovation are the persons that contribute with inspiration and ideas. Afuah (2003) identifies five main functional sources of innovation: the firm's own internal value chain; the external value-added chain of suppliers, customers, and complementary innovators; university, government, and private laboratories; competitors and related industries; and other nations or regions.

Any of the functions in a firm's value chain can be a source of innovation including R&D, manufacturing, marketing, and service. (Afuah, 2003) It may sound self-evident that there is a huge creative potential in most organisations but a lot of senior managers only view specialised departments such as R&D or incubators as the source of innovation. (Skarzynski & Gibson, 2008)

A firm can also benefit from another company's findings through spillovers in the form of anything ranging from basic scientific knowledge to advertising ideas. (Afuah, 2003) Suppliers or intermediaries can be a great source of ideas but also provide solutions and help identify problems early. In industries such as textiles, materials or equipment they provide much of the innovation. (Kim & Wilemon, 2002B) Suppliers of components or materials could also themselves develop technological innovations that a manufacturer can then take over and put in production and sell (Rogers, 2003).

Depending on the industry it is more or less common for customers or other external actors to provide innovative ideas. For instance, within the electronics industry customers provide much of the innovation on new products. (Kim & Wilemon, 2002B) Lead users are per definition ahead of the general market in terms of their product needs. They can develop the product themselves by finding an own solution to their needs and build a prototype. (Rogers, 2003)

A complementary innovator is a firm that would benefit from increased demand for, or performance of, the company at hand's products and has the necessary knowledge to be able to supply innovative ideas (Afuah, 2003). Firms with complementary products can be found around many companies and products, and in industries where firms produce a range of products it can be difficult to distinguish between competitors and complementors (Schilling, 2008).

To be able to absorb and find ideas in the basic and applied research performed in e.g. universities, a firm needs to perform related research and build an absorptive capacity (Afuah, 2003). Therefore, such external sources of information is usually a complement, rather than substitute, for in-house R&D (Schilling, 2008).

Innovative activity tends to be geographically clustered, especially for more knowledge intensive industries. (Fagerberg, Mowery & Nelson, 2005) Some countries or regions are leading within certain innovation areas e.g. Japan and Korea in electronic components and Italy in shoes and specialty leather, therefore these regions can be good sources of ideas within those fields (Afuah, 2003).

2.1.1.1 BOUNDARY SPANNERS

New insights are the basis of ideas and can originate from the cross-section between different departments or firms. Reid & Bretani (2004) define boundary spanners as persons inside the company that operate at the boundary of the organisation by performing tasks that relates the organisation to its environment. Afuah (2003) calls these individuals, that act as transducers between the organisation and its outside environment, for gatekeepers. Gatekeepers interact with for instance suppliers, customers, competitors, or research laboratories and thereby gain insights about their operations and how that relates to their own organisation.

Another definition of boundary spanners is offered by Afuah (2003) who define them as persons that act as transducers between their function and other functions. By that definition, boundary spanners understand the peculiarities of their own as well as other functions and can therefore successfully discuss issues with other functions and bring back and translate answers to the own function.

2.1.2 CIRCUMSTANTIAL SOURCES OF INNOVATION

Circumstantial sources of innovation refer to under which circumstances innovations can be expected to arise. Perhaps the most commonly thought of circumstance for this is planned firm activities which include R&D investments, building on public research breakthroughs, and users or complementary innovators modifying products to better fit their needs and complementary products. During these planned firm activities unexpected occurrences, such as failure, can actually be a good source of innovation. (Afuah, 2003)

Serendipity is the accidental discovery of an idea and will typically occur during a R&D project where another, very different solution is sought. These discoveries do not have to be made by researchers though and can for instance come from the public as well, as in the case of SMS. (Rogers, 2003)

Other sources of ideas for innovations include change in different forms and global trends when identified. Recognising changing customer expectations or technological discontinuities increase the opportunities to come up with new ideas. Regulation and deregulation, globalisation, and macroeconomic, social or demographic changes are other circumstances that can be the sources of new ideas. (Afuah, 2003) Observations of these kinds of change can be used as basis for formulating relevant problems that then are used for finding viable business opportunities (Brem & Voigt, 2009).

Brem & Voigt (2009) emphasise the linkages between technology push and market pull in identifying new business opportunities. Regarding technology sources for ideas, research will only be successful in this respect if existing corporate expertise, the personal interests of the researcher, and an overview of technological developments can be combined. This should then be complemented with marketers' permanent search for new opportunities, both amongst currently dissatisfied customers and future potential needs that could be satisfied.

2.1.3 SUMMARY AND APPLICABILITY

The more sources that the firm is able to tap into, the better positioned it is to succeed in generating valuable ideas. There are five main functional sources of innovation: the firm's own internal value chain; the external value-added chain of suppliers, customers, and complementary innovators; university, government, and private laboratories; competitors and related industries; and other nations or regions. Boundary spanners are individuals that work across internal or external boundaries and bring knowledge and new insights between these different environments which can seed ideas. These new insights can be circumstantial sources of ideas which are the activities and trends that can be used as basis for formulating relevant problems and finding viable business opportunities.

To be able to identify improvement possibilities for a firm that aims to become more innovative it is relevant to consider which sources of ideas that are currently used, and which sources of ideas that could be expanded or added. Thus, the applicable types of idea sources that exist are of interest for this study.

2.2 IDEA GENERATION

Ideas are ubiquitous, both in the professional and personal context of everyday life. Thus, one could claim that idea generation is ever ongoing and that, from the perspective of the firm, it is merely a matter of seizing the opportunities and collect ideas when they appear. This is true to some extent, but gaining ideas is just as much about the process during which ideas are generated as it is about collecting them in an appropriate manner (Brem & Voight, 2009). Furthermore, organisations have the opportunity to influence their idea generation by encouraging practices and attitudes that induce individual and corporate creativity (Brem & Voight, 2009).

There are structural differences in the generation of ideas for incremental vis-à-vis radical or discontinuous innovations (Reid & Bretani, 2004; Magnusson & Martini, 2008), which implies that the strategy of the firm will have an impact on how to best work with idea generation. Ideas for incremental innovations are usually generated top-down in the organisation, whereas the discontinuous ones are more likely to have a bottom-up background since they are often closely related to customer interaction or technology development (Reid & Bretani, 2004). Moreover, ideas for radical innovations tend to stem from external influences that are brought into the organisation by individuals acting as boundary spanners (Reid & Bretani, 2004).

Thus, it can be quite challenging to stimulate both radical and incremental ideas, side by side, in one and the same organisation (Reid & Bretani, 2004; Magnusson & Martini, 2008). One key element to succeed with this endeavour is to keep activities related to discontinuous innovation separated from the more incremental, and efficiency focused ones. This separation can, for instance, be carried out on a temporal or organisational basis and will enable the organisation to enjoy the paradox of both incremental and radical innovation. (Magnusson & Martini, 2008).

The ensuing paragraphs will elaborate on some of the most influential factors when it comes to enabling idea generation for both radical and incremental innovations. First out, and perhaps also foremost, is the atmosphere within the organisation i.e. the characteristics of the corporate culture and the quality of the existing creative climate. This is followed by an overview of the desired behaviour of top management, for instance in terms of resource allocation. The characteristics of internal processes and communication are also of interest since they can facilitate or hinder the sharing of information and knowledge upon which ideas are based.

Thereafter, the impact of rewards and other types of incentives on the motivation and creativity will be addressed. The last, but not least important, paragraph looks at the impact of cross-functional interpersonal connections and interactions.

2.2.1 CREATIVITY AND CORPORATE CULTURE

Creativity is a prerequisite for innovation since it enables the generation of new and appropriate ideas which, if implemented successfully, can become innovations. Most humans have the ability to be creative in one or several areas of their life, either in the personal or professional domain or both. The level and frequency of individual creativity varies over time and is affected by both the social and the work environment (Amabile, 1997).

Individual, or small team, creativity can be seen as consisting of three components; expertise, creative-thinking skill and intrinsic task motivation. Expertise in terms of relevant knowledge and skill is a self-evident prerequisite. Applying creative-thinking skills to a task entails using different cognitive strategies, either inherent to the individual or acquired through training. Whereas the two first factors give the individual the tools and ability to be creative, it is the intrinsic task motivation that determines what activities will actually be carried out. The fact that it is intrinsic, rather than extrinsic, motivation that is crucial to creative work implies that the highest level of creativity is achieved when individuals work in an area in which they not only possess considerable knowledge but also have a strong interest in and enjoy working with. (Amabile, 1997)

The significant impact of intrinsic motivation raises the question on how one can go about ensuring this motivation and nurture the individual's interest in developing innovative ideas (Van de Ven, 1986). This challenge becomes even greater considering that human beings have inherent cognitive limitations when it comes to managing uncertainty and unfamiliarity (Van de Ven, 1986), which are common elements encountered in innovative work. Common for not only the intrinsic motivation, but also expertise and creative-thinking skill, is that they are all to some extent related to personality but with influence from external factors (Amabile, 1997). Thus, management has to find ways to stir the minds of their subordinates and push them to recognise and enjoy new influences and ideas (Van de Ven, 1986).

One way to expose the organisation to a flow of new influences is to create a diverse workplace that is open for interaction with external actors. A diverse workplace has a mixture of age, gender and ethnicity amongst the employees. The external actors referred to are various stakeholders, such as customers and competitors. Diversity in itself is a prerequisite for innovation (Wyckoff, 2003), thus including such a value in the corporate culture can have a positive effect.

The intrinsic motivation to act on these influences can be stimulated through the careful design and implementation of rewards and recognition (e.g. Gorschek et al, 2010; Cotterman et al, 2009; Carrier, 1998), which will be elaborated on later in this chapter. Formal rewards or not, the overriding goal should be to shift the focus of the organisation from only maintaining and protecting the current business, to also encourage and trigger people to appreciate new paths and initiatives (Van de Ven, 1986). The ability of the organisation to be creative and innovate is not simply the sum of the creative abilities of its individuals (Schilling, 2008). The characteristics of the individuals matter, but the overall creative climate is highly affected by contextual factors in terms of properties of the organization and its sub-groups, such as routines, structures and incentives and culture (Schilling, 2008; Wyckoff, 2003; Woodman et al, 1993).

When building a company culture that fosters innovation and creativity, what it *should not* be characterised by is just as important as what it *should* consist of. An organisation experiencing political problems, conflicts and turf wars will not be able to create an atmosphere that encourages the mutual exchange and sharing of knowledge crucial to find new and creative combinations of knowledge and information. (Amabile, 1997) Similarly, strong competition and destructive criticism will defer from risk-taking since mistakes are not evaluated in a just manner, nor are they seen as opportunities for learning (Van de Ven, Angle & Poole, 2000 [1989]). Instead, colleagues should be encouraged to challenge, and build on, each others ideas in a constructive manner, especially cross-functionally with colleagues with different competencies (Amabile, 1997).

Knowing what type of company culture to strive for is merely the first step, implementing it is the real challenge. The desired company culture is generally communicated through public statements and policy documents. However, in order for the culture to truly permeate every day business, top management needs to also act and, for instance, allocate resources in accordance with it.

2.2.2 RESOURCES AND TOP MANAGEMENT SUPPORT

Top management plays an important role in the process of enabling innovation and stimulating creativity (Boeddrich, 2004) since their actions determine what types of behaviour and achievements that are recognised and promoted (Kim & Wilemon, 2002B). Management support ensures that creative work, new ideas and innovation are valued by the organisation (Kim & Wilemon, 2002B). Furthermore, successful idea management requires company-specific idea areas to focus on (Boeddrich, 2004), areas one would expect senior management to determine.

Management that fosters creativity is characterised by supervision based on feedback and enthusiastic support, rather than monitoring and control (Amabile, 1997; Hellström & Hellström, 2002). Furthermore, mistakes should not be feared since that will not encourage taking on the risks and uncertainties inherent to innovative work (Wycoff, 2003).

Top management allocate resources and funding which send signals on what the employees should focus their time and energy on in the future (Kim & Wilemon, 2002B). Innovation does not just happen, it requires time, effort, necessary expertise with relevant training, systems and processes supporting collaboration and perhaps also significant material resources (Amabile, 1997; Wycoff, 2003). It can be useful to allocate resources giving individuals the freedom and time to reflect on and explore ideas on a more informal basis (Wycoff, 2003).

To some extent, the overriding purpose of management is to direct the attention and efforts of the organisation to areas of strategic importance. The intervention of management in combination with organisational systems and processes can shift the focus of the organisation from routine tasks to creative and innovative work. (Van de Ven, 1986)

2.2.3 CLEAR INNOVATION PROCESS

Although the generation of ideas might seem serendipitous at times, succeeding with the generation phase of idea management does require a systemic approach and a clear process to release creativity and channel it to relevant areas. Working with idea generation as a one or two day kickoff with brainstorming could produce some relevant ideas, but this approach is not sufficient in the long run. (Wycoff, 2003)

An innovation process should be documented and communicated throughout the organisation to make sure the process, and its relation to corporate strategy, is understood by everyone. The individual should not only understand the process and its purpose, but also be able to grasp what his or her role is in it. (Wycoff, 2003). The idea generation phase of this process should contain steps that teaches the members of the organisation how to go about searching for hints and inspiration in the surrounding environment and with different stakeholders (Boeddrich, 2004; Wycoff, 2003).

Albeit that it is important to have a clear idea generation process, (Wycoff, 2003) an exorbitance of processes and procedures will impede an open, empowering and trusting climate that stimulates creativity and innovation (Amabile, 1997). Furthermore, as the idea management process progresses, complexity increases with the growing number of people and resources involved, making it difficult for the individual to monitor and grasp what is happening with his or her idea (Van de Ven, 1986). The fact that management feedback and good team communication can stimulate creativity (Amabile, 1997) implies that providing insight to the ensuing steps of the idea management process can have a positive effect on the creativity in the idea generation phase. Knowing that you as an ideator will be able to follow the progress of an idea could thus be intrinsically motivating.

2.2.4 REWARDS AND MOTIVATION

Innovative firms have systems and processes in place to reward and recognise innovative ideas since that signals the importance and value associated with innovation (Cotterman et al, 2009). The most important prerequisite for being creative is intrinsic motivation (Amabile, 1997), thus, any and all systems for rewards and recognition should be designed to trigger this type of motivation. High intrinsic motivation can mitigate for somewhat inadequate expertise or creative thinking skills. When intrinsically motivated, a person is more likely make an effort to acquire the necessary knowledge and skills to solve the task at hand. (Amabile, 1997)

Rewards should be carefully designed because many incentives associated with extrinsic motivation do not stimulate intrinsic motivation, they can on the contrary be detrimental to creativity. However, research shows that there are some extrinsic motivators that can help foster creativity in business organisations, especially if the initial intrinsic motivation is already quite high. (Amabile, 1997)

Creativity can be induced through so-called synergistic extrinsic motivators which can generate two types of extrinsic motivation; enabling or informational extrinsic motivation. The enabling extrinsic motivation comes from rewards that make it possible for the individual, or team, to dedicate additional time and resources to a particular idea, e.g. research funding and material resources. The informational extrinsic motivation on the other hand, has to do with providing rewards in the shape of information or competence that will have a positive impact on performance. (Amabile, 1997) Giving rewards in the shape of training sessions or seminars will not only enable future creativity through increase in expertise, but also avoid the risk associated with monetary rewards to be perceived as bribes of some sort (Griffith-Hemans & Grover, 2006).

However, there is a risk that the synergistic extrinsic motivators do not have the desired effect on the very earliest stages of a creative process. They are perhaps more suited for the stages following the initial discovery and concretisation of a problem or idea where the search for additional information could be vital to put the idea into a context and understand its potential. (Amabile, 1997)

Although traditional rewards are not considered to have a positive effect on creative performance, they could in fact have just that, if designed to reward and recognise creative ideas rather than successful or implemented ones (Amabile, 1997; Hellström & Hellström, 2002). Rewarding creative efforts rather than mere success can be accomplished by rewarding and recognising every idea and suggestion made, with no prior evaluation of its potential (Van Dijk & Van Ende, 2002), preferably in a public way since the attention alone can be motivating (Hellström & Hellström, 2002). However, rewards must not be perceived as a means to try and control behaviour, since that would result in a lower feeling of self-determination which in turn will reduce overall motivation and creativity (Amabile, 1997).

Regardless of what is being rewarded, one should refrain from monetary rewards, partly because of the risk of dwindling intrinsic motivation, but also because it is just not necessary. Research shows that it is symbolic recognition and acknowledgement that matters the most to employees, not necessary large amount of money (Carrier, 1998; Hellström & Hellström, 2002).

In general, it is best to distribute small rewards often, thereby enabling continuous support and making the appreciation of innovation a part of company culture. Furthermore, small frequent awards reduce the risk of creating a competitive environment harmful to collaboration and creativity. (Cotterman et al, 2009)

2.2.5 CROSS-FUNCTIONAL INTERACTION

Since collaboration and diversity has a positive influence on creativity (Wycoff, 2003; Amabile, 1997; Kim & Wilemon, 2002B) it is not surprising to find that people who interact with different departments as an integrated part of their work, submit and generate more ideas (Carrier, 1998). Moreover, there appears to be a connection between rich personal networks, so called network connectivity, and the quality of the ideas generated by the individual (Björk & Magnusson, 2009).

One could thus leap to the conclusion that ideas coming from large groups of well-connected individuals are generally better than those of small teams or individuals, but it is not so. In fact, there are indications of diminishing returns to additional participants when it comes to innovating in teams. As numbers grow large, the creative process internal to the groups becomes more important and conclusive to the outcome than the external connections. Moreover, the need to reach consensus among a large number of different opinions might not be the optimum way forward from an innovation point of view. (Björk & Magnusson, 2009)

Still, it remains evident that encouraging cross-functional interaction and enabling individuals to build large personal networks has a positive effect on the quality and perhaps also quantity of ideas generated (Carrier, 1998; Björk & Magnusson, 2009). Vandenbosch et al (2006) presents a wide sample of research studies addressing the significant impact of diverse relationships, dialogues and social networks when it comes to generating ideas. Some even go as far as to suggest that the potential of an idea is directly dependent on the network position of the ideator (Vandenbosch et al, 2006).

Organisations can stimulate cross-functional interaction and personal connectivity by increasing the formal interaction, promoting forums and points of interaction where individuals can meet and share information and experiences. Events such as brainstorming sessions and workshops with individuals from different parts of the organisation could be one initiative. A more continuous and organisation-wide approach is to improve the systems in place to share and store knowledge and information, e.g. knowledge management systems and idea databases. (Björk & Magnusson, 2009)

Supporting cross-functional interaction is particularly important in the early stages of a development process since it often involves members from different functions, experts with specialised roles. Early internal cooperation and cross-functional interaction will enable transfer of ideas and technologies as well as increase the acceptance of new ideas throughout the organisation. (Kim & Wilemon, 2002B).

2.2.6 SUMMARY AND APPLICABILITY

Ideas for incremental innovations are usually generated top-down in the organisation while discontinuous ones are mainly created bottom-up, which makes it complicated for firms seeking both types of ideas. How this paradox is, and could be, handled in the studied company will determine which kinds of ideas that are generated.

Creativity enables the generation of new ideas and there are three factors determining the level of creativity; expertise, creative-thinking skill and intrinsic task motivation. For a creative climate, an organisation needs to have a sharing culture where colleagues should be encouraged to challenge, and build on, each others ideas in a constructive manner. People, who interact with different departments as an integrated part of their work, generate and submit more, and more qualitative, ideas. A diverse workplace that is open for interaction with external actors will expose the organisation to a flow of new influences that can inspire new ideas.

To ensure that a desired culture permeates every day business, top management needs to act and allocate resources in accordance with it. Succeeding with idea generation requires a long-term, systemic approach and a clear process to release creativity and channel it to relevant areas. Individuals should not only understand the process and purpose of the innovation processes but also their role in it. Top management's actions indicate what types of behaviour that is recognised and valued and thereby what the employees should focus their time and energy on. To help shift the focus of the organisation from routine tasks to creative and innovative work top management can also make sure individuals have time to reflect on and explore ideas on a more informal basis.

Innovative ideas should be rewarded and recognised since that signals the importance and value associated with innovation. Traditional, monetary rewards can have positive effects on creative performance if they reward and recognise creative efforts rather than just successful or implemented ideas. However, monetary rewards are not necessary and can in inappropriate forms decrease intrinsic motivation. To avoid this, rewards for enabling or informational extrinsic motivation can be used instead.

To be able to generate more and better ideas a firm needs to have a creative climate. Therefore, research on creativity and how to create a company culture that supports innovation is applicable in a study that aims to improve idea management practices.

2.3 IDEA COLLECTION

While idea generation and creativity is related to corporate culture and how it manifests itself through leadership practices, organisational structures and processes etc, idea collection focuses on the tools and techniques available to channel and tap into that creativity.

There are different techniques that can help the individual or team reach further and expand their creativity, enabling ideas that would not have seen the light of day otherwise. Combining different approaches, more or less structured ones, when collecting ideas will help counteract the influence of preconceived notions and preconceptions. (Fernandes et al, 2009)

Structured idea collection could be done actively through face-to-face, personal interaction and meetings or via tools such as databases. Collecting ideas in person and thereby opening up for, above all, *quick* feedback and discussion can be perceived as more valuable than a thorough assessment. (Gorschek et al, 2010)

One of the main purposes of structured idea collection is to channel the creativity by setting up some boundaries of just how far outside of the box ideas are expected to be. Without any type of rules or boundaries related to corporate strategy, the idea management process will not be effective. There would perhaps be a wider variety of ideas, but it is unlikely that more of them will be valuable compared to if they had been collected with a specific area or strategy in mind. Focusing the idea collection activities could be perceived as limiting the creativity, but preparing and presenting a focus area can be more of a source of inspiration and catalyst in the creative process. (Wycoff, 2003; Coyne, Clifford & Dye, 2007; Day, Gold & Kuczarski, 1994)

The idea collection topics should be related to the overall corporate strategy (Tidd, Bessant & Pavitt, 2005; Day, Gold & Kuczarski, 1994) but could also play a part in influencing future strategy and identifying opportunities, for instance, by discussing potential markets (Tidd, Bessant & Pavitt, 2005). A well-formulated announcement of the strategy on new products or services, for instance, including goals and tolerable risks, is a good place to start from. Such a statement not only hints where to start looking for promising ideas, it above all give the information on where to *not* search for opportunities, giving the individual an estimation of what ideas that are likely to succeed. (Day, Gold & Kuczarski, 1994)

This chapter will exemplify and elaborate on some tools and techniques for idea collection. First out are event-based approaches to idea collection in general followed by trend-spotting, scenario analysis and brainstorming. Thereafter, different approaches to gathering ideas from customers will be presented. The last three parts includes different IT based tools for idea collection; online communities, idea databases and finally idea management systems.

2.3.1 EVENTS FOR IDEA GENERATION

Event-based idea collection can be carried out both face-to-face person or online. Either way, individuals meet up for a day or two, a couple of times a year, to present and discuss ideas (Gorschek et al, 2010; Gamlin, Yourd & Patrick, 2007). Events are focused on a particular problem or topic, increasing the chance of generating relevant and useful ideas (Gamlin, Yourd & Patrick, 2007). The main drawback of this approach is the difficulty to enable participation from all members of the organisation. The participating individuals can convey messages and ideas from their colleagues, but if absent, it is not possible to take an active part in the discussions. (Gorschek et al, 2010) However, one should be aware of the fact that not everyone will want to participate, and recognise those that do contribute (Gamlin, Yourd & Patrick, 2007).

Another potential problem with events lasting for a day or two is that the participants might find themselves torn between their everyday tasks and the idea event, distancing themselves from the discussions to answer emails or telephone calls. (Gorschek et al, 2010)

As always, the culture of the company will have an impact on the level of success of tools for this type of idea collection events. Unless the culture promotes free exchange of ideas and employee participation, these types of event will not be fruitful. As with creativity in general, it is important to include processes for giving feedback throughout the event and to update the ideator on the progress of the idea as means to motivate him or her to submit more ideas. (Gamlin, Yourd & Patrick, 2007)

According to Gamlin, Yourd & Patrick (2007) there are five key success factors to arranging idea collection events. First of all, the purpose should not only be clear but also exciting and connected to a real business environment which will ensure the participant that the ideas submitted will be evaluated for further consideration. Timing is also of importance, if there is a perceived sense of urgency that could ensure a more enthusiastic participation. The third success factor is diversity among the participants, the more the better; try to include as many different functions as possible. Furthermore, encouraging the participants to approach the challenge from new and different perspectives could be useful, for instance by bringing in physical products to experiment and illustrate with. Finally, it is necessary to facilitate collaboration, e.g. by access to a collaborative virtual environment in which ideas can be shared and elaborated on, especially when the event is done globally through telephone conferences.

2.3.2 BRAINSTORMING

Brainstorming is an event-based and rather well-known tool for collecting ideas in various settings, for instance, when speculating on the impact of coming trends. Traditionally brainstorming sessions are conducted by a limited group of people, given a certain topic or problem to focus their creativity on. There is a set of more or less defined ground rules or conditions in place starting with the attitude that all ideas are of interest, regardless of how unrealistic they might seem when expressed. Participants are encouraged to elaborate and build on each other's ideas although there is no actual evaluation of the ideas until the end of the session. (Shani et al, 2009)

One example of an event-based idea collection tool is the IBM's InnovationJam. In 2006, this online brainstorming tool collected 46,000 ideas from 150,000 people worldwide during 72hours. (Gordon et al, 2008)

There is a variety of IT tools available to help the participants of, for instance, brainstorming session to think more freely and in new ways. However, such tools are rarely considered successful, much due to the fact that the participants do not use them enough to become comfortable and experienced users. One does not get the opportunity to see and learn under what circumstances a particular tool could be of use. (Gordon et al, 2008)

With or without IT support, brainstorming sessions can be more or less formal, and arranged for and with basically any kind of stakeholder or other persons that could have information of interest and value to a firm. It is not uncommon to host brainstorming activities where one or several customer representatives are involved. Customer brainstorming can start with the identifying of one or several problems, followed by a storming session with the purpose of collection suggestions on how to rectify it. (Cooper & Edgett, 2008)

2.3.3 TREND-SPOTTING AND SCENARIO WORKSHOPS

It is stated time and time again that ideas should be generated and collected based on corporate strategy. If the strategy states, for instance, that the firm should be at the forefront of technology development it becomes relevant to understand the market dynamics and search for ideas on what upcoming technologies might be. The notion of trend-spotting includes various ways to search for, and collect, ideas related to trends in e.g. technology development and customer behaviour with the purpose of positioning the firm in relation to coming developments (Tidd, Bessant & Pavitt, 2005).

There is a wide variety of sources useful when searching for hints on upcoming trends, for instance, conferences, seminars, exhibitions and connection to research labs (Tidd, Bessant &

Pavitt, 2005). There are also vast opportunities to utilise IT to monitor and search for trends, for instance through patent analysis, subscribing to data services and general search engines. It is common for firms to involve in some sort of structured process for spotting trends and gathering information on the activities of competitors. (Gordon et al, 2008)

Noteworthy is that trends do not only have to mean the direction of future technology development but could also be a problem or need expected to arise as a result of, for instance, demographic or environmental changes (Rogers, 2003). Such correlations can sometimes be difficult to distinguish, hidden in large amounts of data. However, tools for statistical analysis and data mining are readily available. Simulation and optimisation tools can also be useful since they allow for very early exploration and evaluation of ideas. (Gordon et al, 2008)

Having spotted a future trend raises the question on what this particular trend will lead to, what are the potential scenarios and their implications for the company. Discovering the trend is perhaps not the most difficult part, instead, taking action and responding to the expected changes poses the biggest challenge. (Cooper and Edgett, 2008)

Scenario workshops and visualisation tools can help to predict and analyse the consequences to try and distinguish how the firm can best position itself to benefit from the expected changes. According to Gordon et al (2008) IT visualisation tools can aid simulation and be of great use to rapidly understand the implications of new concepts and changes in design etc.

2.3.4 INVOLVE OR OBSERVE CUSTOMERS

In the section on sources of ideas, customers were presented as a source of ideas but there are different ways to go about collecting these ideas. Customer brainstorming is far from the only way. Regardless of the tool or method used, the customers involved could be both the direct customers of the innovating firm in question but also customers further down the value chain as well as end users (Cotterman et al, 2009).

More innovative firms tend to apply qualitative rather than quantitative methods of obtaining customer insight in a structured way. Observing customers through visits enables a deeper understanding of their world and their underlying needs. Merely asking the customers about their wants and needs does not always give the complete picture. (Cotterman et al, 2009)

Ethnographic research is one qualitative method which amounts to spending extensive periods of time at the customer's location to observe the long-time use of the product or service in question. This method has theoretical advantages in terms of deep insight and understanding of unarticulated needs of the customer. However, it is a time-consuming and potentially rather costly approach which has led to a limited practical use. (Cooper & Edgett, 2008)

Customer insight can also be gathered by frequent and close communication with customers, e.g. in project teams (Kim & Wilemon, 2002B). One could also implement an advisory board comprising of representatives from different customers. This type of board meetings tends to have a positive impact on customer relations in general, but they are not the best forum for idea collection since discussions are usually not focused on new ideas (Cooper & Edgett, 2008).

2.3.5 ONLINE COMMUNITIES

There is an abundance of online communities devoted to a wide variety of topics of interest, some of which can be utilised as tools for idea collection. Tapping into discussions where, for instance, enthusiastic end-users discuss their problems and experiences could give valuable insights on how to improve one's customer offers (Cooper & Edgett, 2008).

One could choose to set up communities, suggest topics or merely search for interesting discussions among existing communities. Either way, collecting ideas from online communities is not only cheap, but also relatively effective and can bring many high potential ideas into light. However, even though communities can be set up and maintained at a fairly low cost, it will require some resources to sort through all the discussions held. (Cooper & Edgett, 2008)

Particular types of online communities are those devoted to the notion of open innovation. These are online arenas where people knowledgeable in a specific technology area can meet up and take on challenges posted by organisations. Open innovation communities, for instance Innocentive and NineSigma, make it possible for firms to leverage competencies outside of the firm to find the best possible ideas for how to tackle a future challenge. Downsides to the open innovation tools are potential issues with intellectual property rights (Alexy, Criscuolo, & Salter, 2009), possible reluctance to adopt ideas invented outside the firm (Trott, 2008), and the fact that overall effectiveness is perceived as rather low by users (Cooper & Edgett, 2008).

One could also consider open innovation in the shape of an idea box, open to anyone outside the firm. However, few firms have this type of tool in place, and those that have tried it report of meagre results. The poor outcome could be explained by the large resources needed to scan and evaluate the ideas as well as providing ideators with feedback. (Cooper and Edgett, 2008) Still, the concept of idea databases limited to the firm, is a wide spread tool for collecting ideas.

2.3.6 IDEA DATABASES

The perhaps most traditional and common way to collect ideas in a rather passive, yet structured way, is to set up one or several idea databases, or idea banks, controlled by the firm. Idea databases are generally based on a sort of virtual box, in which employees can put any type of idea that comes to mind. Relevant management representatives then screen the incoming ideas trying to determine which ones are worth to take into consideration and investigate further. (Gorschek et al, 2010)

Idea databases, or idea boxes, can at a first glance seem like a promising and reasonable way to collect ideas. However, there are a number of challenges associated with these tools, many of which can be at least in part solved by adjusting the structure of the database as well as ensuring sufficient supporting functions around the database. (Gorschek et al, 2010; Carrier, 1998; Day, Gold & Kuczmariski, 1994) Still, some people prefer the personal interaction and direct feedback available through face-to-face idea collection, and might be reluctant to using an online idea database (Gorschek et al, 2010). Also, as with creative work in general, these systems are more successful when the users are presented with topics around which ideas will be gathered (Cooper and Edgett, 2008).

Firms that are experienced in the management of idea databases bear witness to the importance of assessing the submitted ideas frequently. This is important out of respect to the employees that have taken the time and efforts to send in their suggestion, especially since none or late feedback will defer the individual from submitting ideas in the future. (Schuring & Luijten, 2001; Gorschek et al, 2010; Carrier, 1998; Fairbank & Williams, 2001; Cotterman et al, 2009) Moreover, the ability for the firm to absorb and implement ideas rapidly makes it possible to appropriate more business value from the idea in question. (Carrier, 1998)

Idea databases should be designed to make it possible for the idea submitter to monitor the progress of the idea, whether it is pursued, rejected or perhaps put on hold. Having clear structures and procedures of the idea database is also preferable since it will make sure that the system is predictable and rewards the right type of ideas (Schuring & Luijten, 2001). A clear

structure will also make it less difficult to discern any potential synergies or commonalities in combinations of ideas. (Day, Gold & Kuczmariski, 1994)

Unfortunately, ideas that originate from idea databases might come second to competing ideas that surface through other channels, e.g. customer requirements. Submitted ideas are only as good as their description, whilst a more direct request from a customer is also supported by a more certain business case of expected sales and revenue. Even if the two ideas were equal from a fact-based perspective, the idea from the database is usually only backed by one or a couple of individuals whilst the other idea will probably have a stronger organisational support from the start. (Gorschek et al, 2010)

When searching for theory regarding idea databases one often comes across a certain type of databases designed as a means to collect suggestions for internal continuous improvement, rather than ideas for innovations. Albeit that the contents of the systems are different, they still share the challenge of triggering individuals to actually submitting suggestions or ideas. Shuring & Luijten (2001) state that such behaviours are stimulated by positive consequences and antecedents; signals that encourages and guides actions.

The positive consequences necessary can be rewards and recognition of various types. The characteristics of successful rewards related to idea databases more or less coincides with the general theories on rewards that stimulate creativity, as presented earlier in this report. Rewards associated with idea databases should be positive, frequent, small, personalised, varied and not just monetary. (Shuring & Luijten, 2001) Although, there is research done suggesting that rewards should be proportional contrary to small and fixed (Fairbank & Williams, 2001). It is highly important to refrain from any type of negative feedback, rejection of ideas must not be perceived as any kind of punishment. Nor is it advisable to combine the submission of ideas with some sort of competition, unless it is a minor, short-term contest with purely positive and amusing rewards. (Shuring & Luijten, 2001)

In order to encourage overall participation, all contributions could be given a small reward or some sort of token of appreciation. Acknowledging participation can make the employees more confident and increase their inclination to submit more ideas in the future. (Fairbank & Williams, 2001)

The antecedents needed, in addition to the positive consequences, could be basic reminders of the existence and importance of the system (Shuring & Luijten, 2001; Fairbank & Williams, 2001). Furthermore, a simple form to fill in when submitting ideas, time to submit ideas and perhaps also help with completing the form will also reduce the threshold to submitting. (Shuring & Luijten, 2001)

The importance of having a clear and understandable user interface and form for submitting ideas is also pointed out by Fairbank & Williams (2001). Employees are more likely to take an interest in an activity if they feel that they are competent enough for it. Feeling that your superiors believe you to be able to come up with, and submit, good ideas will make you more inclined to do so. (Fairbank & Williams, 2001)

If implementing an idea database, the organisation needs to decide whether or not one should be able to submit ideas anonymously. Some might take pride in seeing their name on an idea whereas other would like to remain out of the spotlight. In order to not miss out on any suggestions it is advisable to leave it to the individual to choose his or her preferred level of anonymity. Communicating past successful ideas submitted to the box will bring motivating recognition to those ideators who made their name public. If anonymous, presenting the idea to

the public will still give some weight to the activity and signals that the idea database is worth submitting ideas to. (Fairbank & Williams, 2001)

Ideas tend to improve as they are exposed to cross-functional feedback from people with different experiences and knowledge, a process which stops as the idea is submitted to the database. Refining an idea to give it a high potential for becoming a successful innovation often requires a combination of market, technology and strategy skills which are rarely found in one and the same person. Unlike ideas that are sent to the idea box, ideas that are advocated for face-to-face by an employee can continue to evolve over time. (Gorschek et al, 2010)

One successful initiative where an idea box was combined with inviting the ideator to promote his or her idea in person is the GameChanger initiative by Shell. It consists of a traditional idea box combined with an internal venture capitalist board before which ideators were asked to clarify their submitted ideas. (Van Dijk & Van den Ende, 2002)

There are researchers promoting an extension of the traditional idea box, implementing a more reactive and interactive interface with room for collaboration (Fairbank & Williams, 2001). Such a system would solve the main problem with passive idea databases and turn them into idea management systems.

2.3.7 IDEA MANAGEMENT SYSTEMS

This section of the theoretical framework will take a closer look at systems where ideas are publicly posted and commented on by other members of the organisation, rather than just submitted to a closed box. Having an effective system in which posted ideas can be evaluated and elaborated on is valuable for firms working with innovation (Wycoff, 2003).

The key rationale for enabling collaboration and interaction in the systems is that the more time an idea is subjected to thought, the more valuable it becomes. Making it possible for others, not just the ideator, to take an idea into consideration will increase the potential of the idea. (Boeddrich, 2004) Opinions on that the system could be more efficient might arise, but it is still better to have a system in place, since it will ensure a constant flow of ideas and keep innovation on the agenda (Cotterman et al, 2009).

Using IT to facilitate collaboration and thereby innovation is not a process unique for the idea management systems. There is a multiplicity of software in use to find sources of relevant sources of skill and information and tap into these, e.g. expert directories, wikis, blogs, portals and of course emails as well as instant messaging. The more often a tool is being used, the better the employee becomes in realising the full potential of the tool and when it can be helpful, thus frequent use is important. (Gordon et al, 2008)

Success factors similar to those presented in the previous chapter on idea databases apply to idea management systems as well including rewards, topics related to strategy, clear and transparent process but also the possibility to cluster ideas with synergies (Boeddrich, 2004). Key challenges include getting people involved and interested in posting and commenting on the posts of others. The motivating factors tend to be the same, thus rewarding the number of original posts as well as comments ought to be sensible. Open for collaboration or not, factors that determines whether these systems fail or not are related to how they are constructed and supported (Cooper & Edgett, 2008).

Firms that have worked successfully with idea management systems can be found spread across most industries, even those that are not traditionally associated with high-tech solutions. One example is Illinois Tool Works (ITW), a firm with relatively low tech products that utilised an

idea management system in the shape of an electronic bulletin board. It was used to overcome the challenge of solving technical problems rapidly although the competencies necessary are geographically dispersed. (Gordon et al, 2008)

Van Dijk & Van den Ende (2002) presents Xerox Venray as a best practice firm within idea management since their system performed above nation average on employee participation, the degree of implemented ideas and the amounts saved. With its 2000 employees, Xerox Venray is described as the largest outlet for Xerox in Holland and the logistic centre of Europe. The firm went from a physical idea box to an online idea management system where ideas could not only be submitted but also monitored, by the ideator, in terms of evaluation and implementation. The system was managed by a designated assessment team and marketed via internal publications, brochures and posters conveying the message to register all ideas, no matter how small. That communication was accompanied by a co-ordinator arranging thematic events. Rewards were handed out personally by management and could consist of minor monetary rewards for all suggestions or credits that could be turned into gift vouchers. (Van Dijk & Van den Ende, 2002)

2.3.8 IDEA COORDINATORS

IT has enabled efficient collection of ideas, especially in large and geographically dispersed organisations. However, as pointed out by Gorschek et al (2010), some people are less comfortable handing over their ideas to a system. Instead, they prefer the interaction and immediate feedback possible in face-to-face submission of ideas (Gorschek et al, 2010).

Although desirable, it can be practically difficult to enable face-to-face collection in large, global organisations. The Dutch telecommunications firm KPN enjoyed great success with a combined approach consisting of innovation coordinators to whom one can send ideas and suggestions. Despite that fact that ideas are not always submitted face to face, there is still a clear recipient which is not always the case with idea management systems. The coordinators at KPN were responsible for the evaluation of the ideas and presented them to subject matter experts etc. All suggestions, implemented or not, had a chance to win small rewards through a lottery, both monetary rewards and gifts. There were also, additional rewards available for implemented ideas. (Van Dijk & Van den Ende, 2002)

2.3.9 SUMMARY AND APPLICABILITY

Using a combination of different idea collection approaches is advisable to create a more complete innovation process and not discriminate against certain types of ideas. By structuring idea collection creativity can be channelled to the company's current challenges and focused on the type of innovations the firm want to achieve.

Trends are an identified circumstantial source of ideas and can be discovered through trend-spotting or scenario workshops. Customer observations and frequent communication with customers will give a firm a deeper understanding of the customer's world and underlying needs, which is a valuable source of inspiration for ideas for new business opportunities. Other methods of collecting ideas outside of the company are through online communities or public idea boxes. This kind of open innovation make it possible for firms to leverage competencies outside of the firm which seems worthwhile but users report a rather low effectiveness in terms of idea collection for these tools.

Idea databases are probably the most common way to collect ideas in structured way. Even though incoming ideas are assessed for further consideration this is a rather passive system

without direct face-to-face interaction or topics to innovative around. Idea management systems are more elaborate idea databases in which users are able to not only look at, but also comment and elaborate on others' ideas. To successfully implement an idea database or idea management system there are a few practicalities to attend to. It should be easy to submit ideas why there should be a simple form to fill in. To further encourage submission, all contributions could be given a small token of appreciation. The perhaps most important issue is the frequent assessment of the submitted ideas though. Having clear structures and procedures of the idea database is also useful in the sense that it ensures that the system is predictable and rewards the right type of ideas, which is not just motivating for ideators but quality-assuring for the process for the company.

Event-based idea collection is generally carried out once or twice a year, where invited individuals meet up for a day or two, often in person, to present and discuss ideas. Brainstorming is an event-based rather well-known tool for collecting ideas in various settings. Traditionally brainstorming sessions have been conducted by a limited group of people but recently large-scale online brainstorming sessions have become more and more common. To succeed with idea collection events there are several identified success factors; a clear and exciting purpose; diversity among participants; facilitated collaboration; encouragement of new and exciting perspectives on the challenge; and finally a perceived sense of urgency can create additional enthusiasm.

Some ideators are uncomfortable handing over their ideas to a system and prefer the interaction and immediate feedback gotten from face-to-face interaction. This could be accomplished with innovation coordinators, members of the organisation appointed to support the innovation process and aid in idea collection.

Previous research on tools and methods on idea collections is relevant both for evaluating current initiatives in the studied organisation and propose new ones. For approaches that are proven to be effective idea collection methods it is also applicable to go into more detail on how to design and implement them since that could become interesting for the final recommendations. Thus, approaches such as online communities for open innovation are not extensively investigated but focus is instead put on for instance idea management systems and brainstorming events.

2.4 IDEA SELECTION

Deciding which projects to pursue in an organisation is not a simple task with potentially large consequences. Pinto (2007) writes that information technology companies waste over 50 billion USD a year on projects that was created but then not used by the intended customers. Further emphasising the importance of the first stages of new business development, numerous studies have shown that the most significant factor for developing successful products is the quality of execution of the early steps in the innovation process (Stevens and Burley, 2003).

Afuah (2003) argues that the main factor that decides whether a firm will see the potential of an idea is the dominant managerial logic. The managerial logic refers to the beliefs and predisposition of a manager with regard to the market the firm serves, the technologies to apply, whom to hire, who the competitors are, and so forth. The dominant managerial logic is then the collective viewpoint on these matters that usually emerges as a firm develops. This common logic simplifies decision making and makes the running of the firm more efficient. However, an idea that does not fit the dominant managerial logic has small chances of gaining the needed support no matter how excellent it is.

This section covers the processes around idea management related to idea selection. First, a few representations of how the front end of innovation processes previously have been described are presented. Thereafter, idea screening is covered including screening methods, financial screening models, and evaluation criteria. Portfolio management and knowledge management is then briefly touched upon. Finally, attention is brought to the roles of key people in idea selection as well as politics and skunkworks.

2.4.1 PROCESSES IN THE FRONT END OF INNOVATION

The early stages of new product development are in literature commonly referred to as the front end of innovation (FEI) or the fuzzy front end (FFE). Kim & Wilemon (2002B) define the FEI as the process that commence when an opportunity is first deemed worthy of further consideration and ends with the launch of a project. This entails the idea development, exploration, and assessment as well as making the investment decision and committing resources to the project. Compared to the development phase, this phase is intrinsically non-routine, dynamic, and vague.

Uncertainties related to the technology, markets, required resources, and fit with corporate strategy and capabilities, prevent the idea from advancing to the development phase. At that point, a well-defined product concept can help in avoiding making costly, ill-informed decisions by increasing the understanding of needed development time, costs, technical expertise as well as market potential, risk and organisational fit. To be able to frame ideas adequately and have a rapid and effective FEI process common problems like lack of vision, lack of formalisation, lack of perceived urgency, ineffective project leadership, and ineffective communication have to be solved. (Kim & Wilemon, 2002B) Various researchers have constructed different representations of these early phases and some have even proposed complete processes for managing the FEI. A selection of FEI models will be presented to give an overview of how these early phases are generally looked upon.

Koen et al (2001) envision the FEI as a wheel where the “engine” is fuelled by the leadership and culture of the organisation, see Figure 5. The “engine” is affected by its environment that are made up of organisational capabilities, business strategy, the outside world (distribution channels, customers, competitors), and the enabling science that will be used for the product.

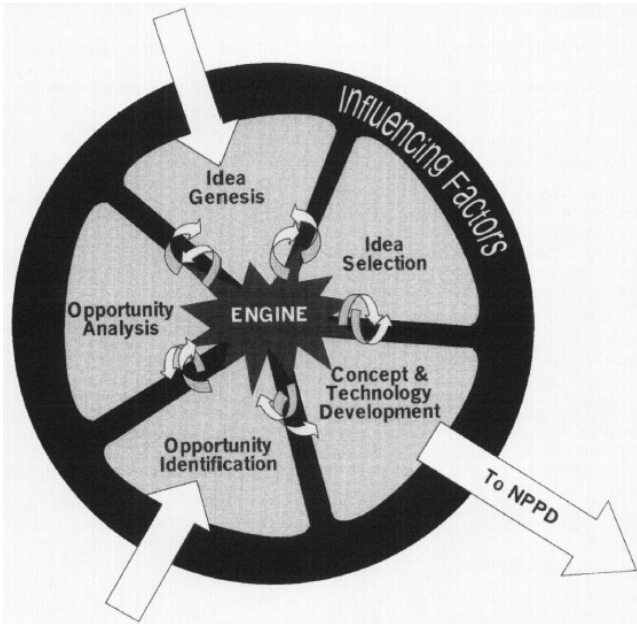


FIGURE 5: THE FEI PICTURED BY KOEN ET AL (2001)

Sandmeier et al (2004) made a thorough literature review and based on that came up with a quite complex model of the FEI displayed in Figure 6. Just like the model of Koen et al (2001) it includes feedback loops, opportunity analysis and idea selection but on a more detailed level. Furthermore, it recognises three phases within the FEI; market and technology opportunities, product and business ideas, and draft concept of product and business plan. In the first phase future market needs and company potential is assessed with the aim of identifying search areas and business opportunities. The next step entails problem definition, and idea collection and conceptualisation. In the final phase the idea is further investigated and defined both in terms of technical and commercial functions.

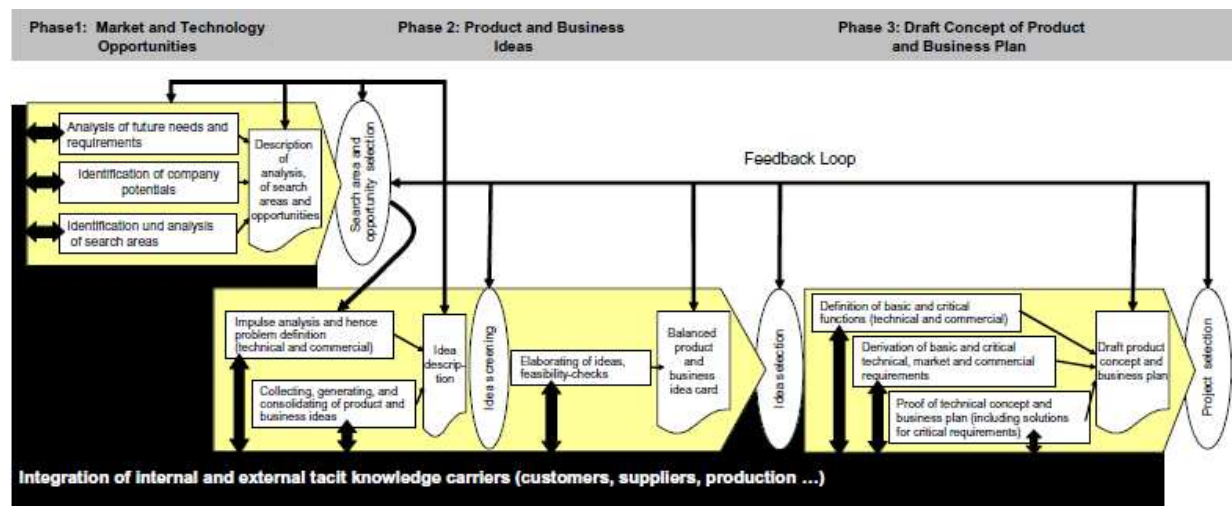


FIGURE 6: THE FEI ACCORDING TO SANDMEIER ET AL (2004)

Hellström & Hellström (2002) have observed several communication tracks in the FEI, which they call highways, and alleys and by-lanes, see Figure 7. The “highways” are the formally established forums for communication around ideas and can be team meetings or R&D decision committees. These are excellent places for discussing ideas but are often perceived to be reserved for topics approved by top management and are therefore closed off for more radical new ideas. The alleys and by-lanes are more informal paths like the coffee room or the corridor. It can be quite efficient to get ideas through and formally endorsed through these ways but it requires some knowledge to find and get into the right “routes”.

For the communication tracks there are some “rules of the road”. Firstly there is the speed restriction which is the customary rate of the innovation process. Ideators often perceive this as a hindering factor and a threat to the novelty of the idea because going through the company’s formal processes can take more than a year. Another issue is the kidnapping of ideas, which refers to when someone steals the ideator’s concept. In the study there were indications that it was not uncommon that managers took others’ ideas for their own benefit and career building, which in the end is exceptionally counterproductive in terms of information sharing. (Hellström & Hellström, 2002)

Irrespectively which track an idea is following, but especially if it is the highway, gate-controllers will decide if the idea will be taken further. Most commonly the gate-controller is the ideator’s closest superior even though many ideators do not feel confident that he or she has the capacity to make an informed decision regarding novel ideas. Additionally, in the studied organisation ideas were regularly informally reviewed by peers and then collectively promoted or demoted. (Hellström & Hellström, 2002)

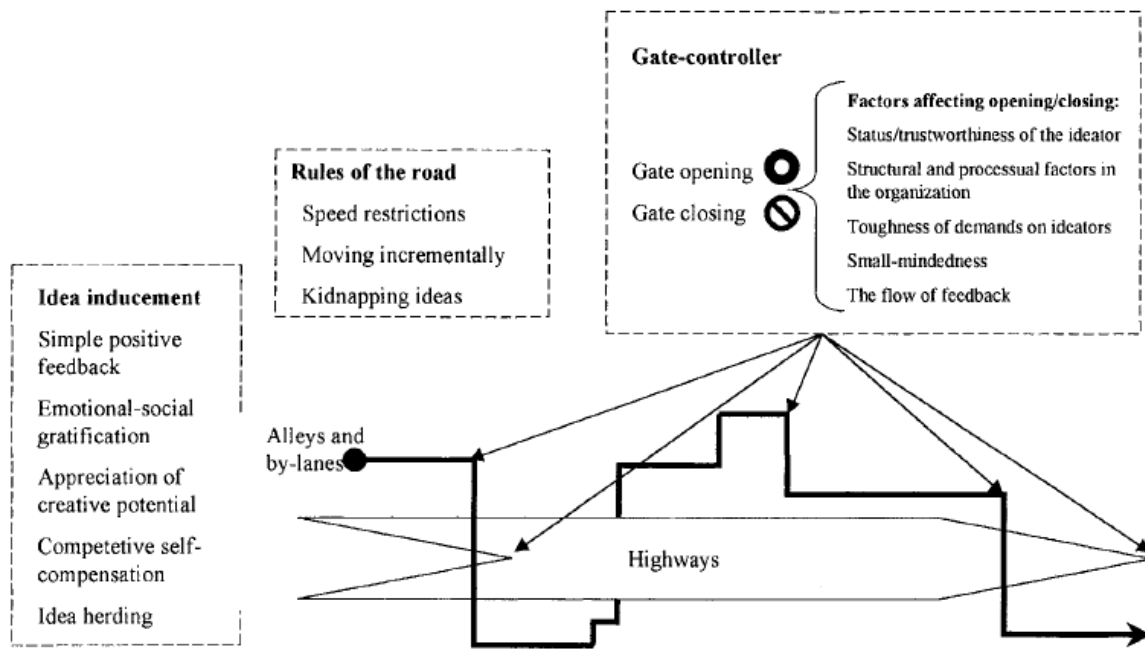


FIGURE 7: THE HIGHWAYS, ALLEYS AND BY-LANES IDENTIFIED BY HELLSTRÖM & HELLSTRÖM (2002)

There are varying views on how formalised or flexible the processes in the FEI should be. Kim & Wilemon (2002B) argue that formalising the FEI has more advantages than drawbacks. They acknowledge that this is a fuzzy phase where each case is particular but mean that there are common characteristics in most situations that can be handled systematically. By collecting experiences and learning from past fuzzy cases, effective guidelines for managing the FEI can be created. (Kim & Wilemon, 2002B)

Nobelius & Trygg (2002) have a different take on the processes in the Front End and stresses the need for flexibility. They do not believe in one Front End process but rather a model for customising it to each specific project. When it comes to radical innovation, Backman, Börjesson & Setterberg (2007) really emphasise the need for flexibility in the FEI process. Defined processes and planned activities are suitable for working with incremental innovation but they can hinder the transfer of radical innovation into the development process. In these cases, companies need to be able to rapidly introduce changes late in the process and have a sort of planned flexibility.

2.4.2 IDEA SCREENING

Idea selection, especially when it comes to more innovative ideas, encompasses complex decisions with a lot of uncertainties. The average person cannot process more than the information around seven objects or digits at once which means that when the complexity of a decision exceeds that, simplifications are automatically made. When this happens, people become more conservative and apply more subjective criteria disconnected to the reality. Also since it is practically impossible to follow up the correctness of a decision around an innovative idea, the legitimisation of the decision process is what is judged instead. Thus, the more complex the decision is, the more likely it is that it will be erroneous, and the more important it is to have appropriate evaluation criteria to follow in the decision process. (Van de Ven, 1986)

Kim & Wilemon (2002B) differentiates between two screening phases in the FEI; in the first one it is decided if the FEI should even be entered, and in the second one if the FEI should be ended

or not. In other words, the first selection it is determined which ideas that should be further evaluated in a pre-study and in the second screening the projects that will be further developed and implemented are selected. At both these decision points two kinds of errors can be made; rejecting ideas for potentially successful innovations, and accepting ideas that are likely failures. To make the right decision at either of these screening phases an appropriate evaluation process is needed. A too rigid, conservative process will lead to the stopping or delay of promising projects. A weak evaluation process on the other hand will lead to an inefficient use of R&D resources through the failure of stopping fruitless projects. (Kim & Wilemon, 2002B)

In addition to having a suitably structured evaluation process it is important to make sure the concept development and selection process does not favour one kind of ideas more than others. At Volvo Cars, for instance, their processes supported technology- and design-driven innovations but not at all market- or customer-driven concepts. Since they sought innovation in all these areas they had to adjust the selection process to avoid this problem. (Backman, Börjesson & Setterberg, 2007)

To further improve the screening, customers could be included in the selection process. Customers often have significant expertise in and knowledge of what they value in new services and by also having them assess the new ideas on the same scales, a more comprehensive assessment of the ideas' potential will be achieved. (Baier, Graefe & Roemer, 2008)

2.4.2.1 SCREENING METHODS

There are several methods that could be used in the screening of ideas to aid decision makers. Pinto (2007) presents some of the more common ones; checklists, simplified scoring models, and the *Analytical Hierarchy Process*.

Checklists are the simplest method for project selection. A checklist is a list of criteria that is relevant to consider when choosing which ideas to proceed with. The criteria included in the checklist depend on what projects the firm want to undertake and can be rather numerous. This selection tool offers a simple way of promoting discussion and recording opinions and can therefore be applied successfully in a consensus-group setting. The obvious drawbacks of this approach are the subjective character of the ratings and the lack of support for resolving trade-off issues. (Pinto, 2007)

By assigning each criterion a weight, the flaws of the checklist is to some degree worked out in simplified scoring models. When an idea is evaluated according to this model score values are assigned to the different criteria, which are then multiplied with the criterion weight ratings before they are added to the total score. The ease of use of this model is a great advantage but also a possible pitfall; if the selected criteria and weighting of them is not accurate, the model will just be misleading. A not uncommon mistake in designing scoring models is including similar criteria that actually measure the same aspect, and not compensating in the weighting, which give that aspect a doubled importance in comparison to other factors. (Pinto, 2007)

The four-step *Analytical Hierarchy Process* was developed to address some of the frequent problems associated with scoring models. The first step is constructing a hierarchy of criteria and subcriteria. Step two consists of allocating weights to the criteria and, when appropriate, split overall criterion weight between subcriteria. In the next step numerical values are assigned to criteria dimensions. Using dimensions such as poor, fair, good, very good, and excellent could for instance be translated into the numerical values 0, 1, 3, 6, and 10. Finally, to get a final score each numerical evaluation of the idea is multiplied by the criterion's weight before it is added to the total score. (Pinto, 2007)

2.4.2.2 FINANCIAL SCREENING MODELS

Financial models simplify the assessment of the estimated financial implications of an idea. Some of the most common models for this calculate payback period, net present value, and internal rate of return. A project's *payback period* is the time it will take for the project to pay back the initial outlays and start to generate a positive cash flow. *Net present value* projects all cash flow items to the present year by discounting future outlays and income. This makes it easy to see if the project will contribute to the firm's value or not since a positive result indicate that the project will make money. A project's *internal rate of return* is the discount rate that makes the net present value zero. It is thus also calculated based on the estimated outlays and incomes, and is often used to make sure a company specific "hurdle" rate is reached. (Pinto, 2007)

2.4.2.3 EVALUATION CRITERIA

In the first screening process where it is established if an idea is worthy of really entering the FEI the decision criteria should focus on making sure ideas are aligned with market needs and the firm's goals and capabilities. Sound criteria to consult at this stage can be complexity, feasibility, potential, and compatibility but most important is to focus on market potential and company fit. (Kim & Wilemon, 2002A; Kim & Wilemon, 2002B)

Using traditional decision criteria like return on investment (ROI) at this decision point can be a hindering factor since information needed to realistically estimate it might not yet be available. This is especially true for more radical ideas. (Kim and Wilemon, 2002A) Afuah (2003) agrees that financial estimates like discounted cash flow not are appropriate tools for estimating whether or not to undertake a radical innovation. Firstly, radical innovations are inherently uncertain and there are no previous projects similar enough to be used as proxy when estimating the risk. Secondly, the competences and knowledge acquired by the company while undertaking the project is not included in the calculation. Thirdly, the opportunity cost of not making the investment is not considered and neither is the impact of management decisions.

For the second screening phase in the FEI where it is decided if a project should enter the development phase or not, the decision criteria should be more extensive than in the first screening. Important factors to consider at this stage encompass competitive reactions, resources, feasibility, and profitability. (Kim & Wilemon, 2002B)

Baier, Graefe & Roemer (2008) have studied which decision criteria to use in the selection of new IT business ideas and suggest the use of both generic more business specific factors. The general, internally oriented decision criteria that have been identified as most relevant include idea description, feasibility, implementation, and opportunity cost. More precisely *idea description* concerns the quality of description and presentation of the idea. *Feasibility* refers to the assessment of the technical risks in developing the idea. *Implementation* entails the cost of idea implementation, market launch and time to market. Finally, *opportunity cost* covers the probable consequences of not implementing the idea.

The additional, internally oriented but, more particular to IT services, proposed decision criteria include synergy, service quality evidence, quality of new service delivery, service expertise, and standardisation. In this instance, *synergy* measures the fit of the new service to the existing service portfolio and resources. *Service quality evidence* displays the possible tangible clues and visible quality features of the new service. *Quality of service delivery* is considered to make sure the service delivery can be reliable, fast, and efficient. The factor *service expertise* gauges the availability of required highly skilled and well trained personnel. Lastly, *standardisation* factors refer to the possibility to have a uniform customer contact and standardised production process. (Baier, Graefe & Roemer, 2008)

Baier, Graefe & Roemer (2008) have also identified relevant external factors to consider in idea selection for IT service development. Firstly the *profit potential*, or estimated profit, and *customer's willingness to pay* for the suggested service should be considered. Connected to this are factors ensuring that the service responds to and satisfies customer needs (*product/market fit*). The *market potential* also needs to be assessed in terms of its size and growth as well as its competitiveness with for instance aggressive price competition. The *service innovativeness* is also of consequence since it determines the differentiation from competitors and competitive advantage derived from the new service. Other applicable factors are *market attractiveness for competitors*, *market entry barriers*, *competitor's profit margins*, and *dependency on software suppliers and partners*. Depending on the specific industry *customer participation* in the new service development process and *response to fluctuating demand* could be of interest. Moreover, *legal issues* and the *potential to license* the idea could also be of importance.

2.4.3 PORTFOLIO MANAGEMENT

When selecting ideas for further development it is not only the individual ideas that need to be assessed but also the complete portfolio of existing services and R&D projects have to be considered. The systematic selection, support, and management of an organisation's collection of projects is called project portfolio management. (Pinto, 2007) In this practice resources are reallocated to existing projects that can be accelerated, killed, or down-prioritised, while new projects are evaluated, selected, and prioritised. (Cooper, Edgett & Kleinschmidt, 2001)

IT portfolio management provides the framework for governing bodies to save money by scrutinising investments and eliminating nonstrategic and poorly performing projects. The explicit quantification of risks, costs, value, and performance dissipate many of the political biases in the decision-making process and ensures that the most important issues are assessed for potential investments. Because IT portfolio management ensures consistency in the process of making decisions, the selection process becomes clearer and decisions can be made faster. (Maizlish & Handler, 2005)

2.4.4 KNOWLEDGE MANAGEMENT

Ideas selected for further consideration and development are often documented in one way or another while rejected ideas are soon forgotten. Kim & Wilemon (2002A) recommend companies to also document abandoned ideas as well as the reasons for rejection. A change in the business climate can make these ideas interesting later on. Furthermore, documenting the actual FEI process, learning from past evaluations of ideas, makes it possible to design effective guidelines on how to best manage idea selection (Kim & Wilemon, 2002B).

2.4.5 KEY PEOPLE

There are several decision points in the idea selection process where various individuals play different roles. Reid & Bretani (2004) have identified three potentially critical decision-making interfaces for such decision points. The first one is the boundary interface between the organisation's environment and a boundary-spanning individual. The individual collects information from the environment and recognises by selective perception what is considered interesting and put it in relation to what is already known. Hence, the first decision point occurs on an individual level and entails what information from the environment that is "selected" for further consideration. The second decision-making interface occurs between a gatekeeping individual and the organisation, and involves a flow of information inward from the individual to the organisation. The decision-making here is also on the individual level and it is not

uncommon that the boundary spanner from the first decision point is also the gatekeeper. Finally, the third interface involves a flow of information from the organisation to a specific project, and the decision-making here mainly rests with senior managers at the organisational level. (Reid & Bretani, 2004)

The three key individuals are also recognised by Afuah (2003) who points out that the more effective these key people are, the better the firm will perform. In addition to the idea generators, gatekeepers, boundary spanners, and project managers Afuah (2003) also acknowledges the role played by champions and sponsors.

2.4.5.1 GATEKEEPERS

The influence of gatekeepers is related to which information from the environment they choose to pass on to the organisation. There can be both technological and marketing gatekeepers. Technological gatekeepers are usually experts in their field and get input from the environment for instance through reading technical literature and communicating with external experts. In the position as technological expert, these persons are often consulted on technical matters and can in that role open or close the “gate” to an innovation. Marketing gatekeepers are the marketing counterpart to the technological gatekeepers. They too collect and channel relevant information within their field, and are people with organisational weight. (Reid & Bretani, 2004)

2.4.5.2 CHAMPIONS

It is often said that without a champion an innovative idea gets nowhere (Van de Ven, 1986), and Kim & Wilemon (2002B) identify support and acknowledge of champions as an important part of a successful innovation process. Champions take an idea for a new product or service and do everything within their power to make it succeed including informal tactics and pressure (Sim et al, 2007). Even when facing opposition they continue to promote the innovation throughout the whole value chain and can even risk both their position and reputation. (Afuah, 2003)

Champions usually emerge from within the organisation and cannot be hired or trained for the purpose (Afuah, 2003). Reid & Bretani (2004, p. 174) state that “A champion is generally defined as an individual who informally emerges in an organization and makes a decisive contribution to an innovation by actively and enthusiastically promoting its progress through critical stages, particularly those early on in the process.”

Research have shown that champions typically do not themselves come up with the innovative ideas but find them somewhere in the organisation they act in. To be able to do that and then successfully promote the idea they need a certain amount of technical competence, drive, and political smartness. (Sim et al, 2007)

2.4.5.3 SPONSORS

A sponsor is a manager on a senior level that provides behind-the-scenes support, access to resources, and political aid for an idea. These people, who are also called mentors or coaches, act in a way that sends a message to political opponents of the innovation that they are up against a senior manager. Additionally, the support of a sponsor reassures the champion and other key individuals that they have a much needed organisational support in that person. (Afuah, 2003)

2.4.5.4 INNOVATORS

“Innovators” as described by Sim et al (2007) are involved in the whole innovation process and invent, champion, and aid the project through the complete implementation process. They have both deep and wide knowledge of the technology, market and business and thereby have excellent possibilities for promoting products that will greatly increase the firm’s results.

Because of this it is important to be aware of these individuals and make sure they get the organisational resources needed for thriving in the firm. (Sim et al, 2007)

Innovators often have a creative personality, are curious about widely varying topics and are driven systems thinkers. Typically they want to use technology to solve worldwide problems and see technology as a means to an end where new technologies have to make money for the firm to be of interest. Even though innovators understand the political processes for getting project acceptance they prefer to base their arguments on facts and use other types of positive influencing political mechanisms to pursue their ideas. Like entrepreneurs they act in whatever role is needed at the moment in the project's development stages and have an external, customer-oriented focus with lots of customer interaction in the early stages. (Sim et al, 2007)

Reid & Bretani (2004) use the term innovators for individuals playing a technology-visioning role, as opposed to ruminators who are market-visioning. Both these roles are often involved in the emergence of new technology within the organisation's sphere since they work either with the new technology or with markets where there is a possible application for the technology.

2.4.5.5 PRE-STUDY LEADERS

While champions are leaders in the sense that they communicate the vision and potential of an innovation the project managers are the ones that plans and make sure the work is done. The project manager is also the person that the organisation turns to for decisions, questions and project information. (Afuah, 2003) Management often rely on one project analyst or leader to make the recommendation to continue to pursue an idea or not at these early stages. (Stevens & Burley, 2003) Therefore, one of the first and most important activities in the FEI is to appoint a person with enough knowledge and experience in technology, markets, required resources, and organisation fit and capabilities to this task. (Kim & Wilemon, 2002B)

Creativity has been proved to be an important personal trait of pre-study leaders for innovative projects. In the early stages ideas often have to be reshaped substantially to become meaningfully unique enough to be commercial successes. Since the pre-study often is driven by one single person, his or her personality has been found to be as important as the innovation process itself to the success of the new product or service. By testing the personalities of pre-study leaders and cross-referencing with generated profit, it was shown that the top third creative people generated 95 times more profit than the bottom third. Based on those results it was deemed that the speed and effectiveness of the new business development process by more than 900% by appointing the right people. Interestingly enough, these creative and productive pre-study leaders are often not the most well-thought-of employees because of their undisciplined thinking and difficulty to manage, and are therefore often greatly underappreciated. (Stevens & Burley, 2003)

2.4.6 POLITICS AND SKUNKWORKS

The informal way of getting things done is probably the most common one in organisations. This is not necessarily a bad thing and can even be positive as, for instance, compensation for an inadequate or unrealistic innovation process. There is however the obvious problems related to the fact that people with power will get their ideas through and the one who screams the loudest will be heard first. (Gorschek et al, 2010) It will not matter that there is an excellent screening method in place if objectivity is not sought while using it. Pinto (2007) reports that a number of firms have troubles picking the most promising ideas due to senior managers' "pet ideas" being pushed forward. The financial estimates of these personal favourite projects are sometimes even tweaked to seemingly optimise the selection criteria.

Hence, ideators do not only have to come up with good ideas but also “sell” them to their colleagues and managers. This can be a difficult process of translating ideas from the individual level to that of the R&D department. Furthermore, it is not just about the facts and details but also about justifying the idea and getting it liked. In the next step the idea is re-interpreted by people throughout organisation and at that stage a political strategy to shape coalitions will greatly matter. At this point, the more “hidden” form of political power of legitimation of certain activities should also be considered. (Bakker, Boersma & Oreeel, 2006)

Pinto (2000) writes that politics are pervasive in modern corporations and that project managers need to be aware and make that work in favour of their projects to succeed. Project managers often have to rely on personal traits to influence people since they usually do not have authority as their power base. Then if they refuse to take part in any political activities in the workplace they risk not getting anything done. On the other hand, if their behaviour is too politically strategic they are likely to lose trust in the long run instead. Therefore, project managers should act sensibly while engaging in political behaviour such as building networks and negotiating with stakeholders. (Pinto, 2000)

Skunkworks are projects run out of the formal processes. History has shown many greatly successful innovations that started as skunkworks because they lacked the required organisational support to go through the official screening process. Rogers (2003) define a skunkworks as an especially enriched environment intended to help a small group to design a new idea by letting them escape routine organisational procedures. The individuals in this small group are often selected by the skunkworks’ “project leader”, who also ensures access to necessary resources. The small team then continues to work with the project outside of the formal processes and structures of the organisation in order to create an innovation.

2.4.7 SUMMARY AND APPLICABILITY

The front end of innovation, FEI, commences when an opportunity or idea is first deemed worthy of further consideration and ends with the launch of a development project. This early phase in the service development process is intrinsically non-routine, dynamic, and vague. Even so it is argued that there should be a structure in the front end of innovation. The structure should allow for some flexibility though to adjust to the characteristics of specific ideas which will open up the process for more radical innovations that can otherwise be disfavoured. Efforts made to conceptualise and describe the FEI have resulted in a number of models and frameworks that can be used to understand and improve these processes.

Conceptually there are two screening phases in the front end of innovation. The first one determines whether an idea should enter into the processes of the FEI and in the second phase it is decided if the idea should leave the FEI and turn into a development project.

The main factor that decides whether a firm will see the potential of an idea is the dominant managerial logic. Idea screening is a complex decision process where simplifications are necessary, which not uncommonly result in conservative and subjective decisions. Furthermore, due to the difficulties in following up on this type of decisions; the focus in quality assurance is put on the process. Thus, it is increasingly important it is to have appropriate evaluation criteria to follow in the decision process.

There are several available methods that could be used in the screening of ideas. The checklist is most common type of screening tool which can be expanded to a simplified scoring model or an Analytical Hierarchy Process. All screening methods contain a number of evaluation criteria, some in the shape of financial screening models that simplify the assessment of the estimated

financial implications of an idea. Others are of a more qualitative nature, e.g. feasibility and compatibility. It is advisable to use different evaluation criteria at the two different stages of the idea screening process. In the first screening process the decision criteria should favour ideas that could satisfy market needs and correspond to the firm's goals and capabilities. For the second screening phase the decision criteria should be more extensive than in the first phase and can include competitive reactions, resources, feasibility, and overall profitability.

A portfolio perspective should be applied to the evaluation process to make the most of the development funds at all times through continuous reprioritisation. A change in the business climate can make abandoned ideas interesting later on why it is advisable to document not only ideas that are under development but also those that are rejected.

The success of an idea is hugely affected by the behaviour and preferences of certain key people in the organisation, such as gate-keepers, champions, sponsors, innovators, ruminators and pre-study leaders. Depending on the role they have taken, these individuals control the flow of information, use politics to promote certain ideas, or execute the initial evaluation of ideas and provide the recommendation on whether to pursue or abandon the idea.

Politics are pervasive in modern corporations and it is critical to have the informal processes work in favour of an idea for it to succeed. The importance of informal processes have both advantages and disadvantages but the latter include the fact that people with power will get their ideas through to a larger extent than the average person. Moreover, it will not matter if there is an excellent screening method in place if objectivity is not sought while using it. Skunkworks are projects run outside of the formal processes that take up resources even though they are not formally approved.

In the section on idea generation the importance of clear processes was emphasised but appropriate idea selection processes are also essential for ensuring that the most promising ideas are considered further for implementation. Theories of idea selection processes provide conceptualisations that facilitate understanding of the processes at the studied firm and the implications of the current situation. Previous research also offers arguments for a structured process, with suitable screening methods and defined decision criteria, to avoid selecting ideas on nonfactual bases. Since key people and politics have such a large impact on idea selection processes, previous research on their roles is also of relevance for this study even though it mainly provides a better understanding of current practices and emphasises the need for explicit processes and decision criteria.

2.5 INNOVATION IN AN ORGANISATIONAL CONTEXT

As stated in the background, Volvo IT is a large, global organisation with a matrix structure. The organisational structure has implications for the everyday work in the company and thereby also for the work around innovation and idea management.

2.5.1 INNOVATION IN GLOBAL ORGANISATIONS

A global firm can choose to organise its different functions in different ways depending on local differences in capabilities, strategy etc, see Figure 8. To be effective in its innovative efforts a global firm should put the right people where the uncertainties are. To manage uncertainty, information needs to be collected and processed and this is most effectively done by being present and getting to know the environment. (Afuah, 2003)

Globalization

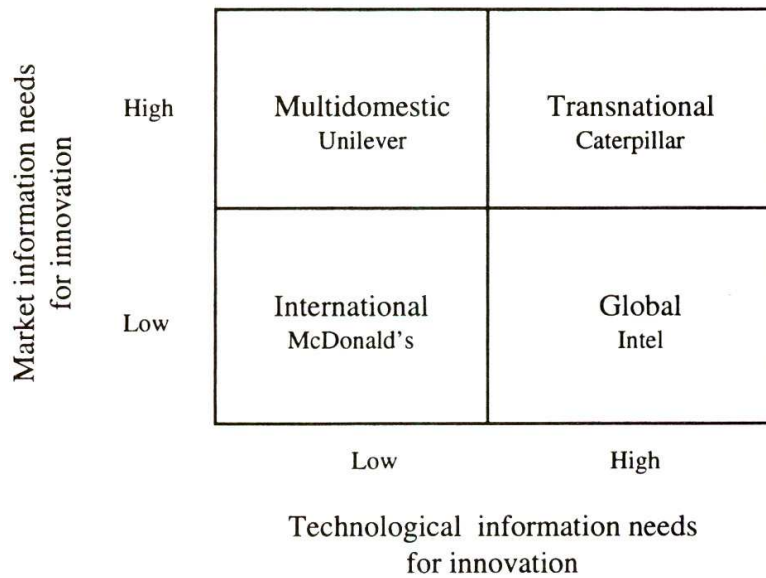


FIGURE 8: STRATEGIES FOR WORLDWIDE INNOVATION BY AFUAH (2003)

If the market needs of a product are constantly changing through changing customer tastes that are difficult to discern, the firm’s marketing function should be located close to the customers. In such cases when the success of a product depends on understanding local customer preferences, tastes, expectations, distribution channels, and government regulations more than it depends on technological knowledge, a *multidomestic* (Afuah, 2003) or *local-for-local* (Schilling, 2008) innovation strategy is appropriate. This strategy means having rather independent, self-sufficient units in each country or region. (Afuah, 2003)

On the other hand, if the market conditions are relatively stable the marketing department can be located back in the firm’s home country. If the technological information needs also are relatively low, an *international* innovation strategy can be pursued. In such arrangements the firm use whatever resources and capabilities it has “at home” to perfect its products before exporting these capabilities and innovation abroad. (Afuah, 2003)

If, however, the technological knowledge requirements are high the R&D function might need to be located away from the home country in an environment suitable for technological innovation. An example of such an environment is Silicon Valley where Intel has located its R&D facilities. This organisation is referred to as pursuing a *global* (Afuah, 2003) or *center-for-global* innovation strategy (Schilling, 2008).

For firms with both high technological and market information needs a *transnational* strategy is more appropriate. This is a combination of the global and multidomestic arrangements with local offices for gathering market insights that are supported by a global R&D facility. (Afuah, 2003) To successfully implement this strategy each division has to accept its dependency on the other divisions, and integration across the divisions through e.g. cross-division teams or rotational programs must be achieved. (Schilling, 2008)

The chosen degree of centralisation in decision making will also affect the innovativeness of the firm. By centralising its R&D activities in one department economies of scale are reached and the possibilities for division of labour and specialisation are maximised. The consistency of the firm’s new product development efforts will also be improved and the deployment of new technologies throughout the whole organisation is facilitated. A more decentralised structure

enables the different divisions to faster develop new products and processes that fit them and their customers though. (Schilling, 2008)

2.5.2 INNOVATION IN MATRIX ORGANISATIONS

Some internal functions in a firm exist to serve customers while some mainly serves other functions or “internal customers”. The matrix organisation became popular in the 1970’s as a way to manage these functions that serve “internal customers” and cross the organisation. Examples of such functions include finance, personnel, planning, central marketing, and facilities management. (Peters, 1993) Firms with multiple products, multiple functions, and multiple locations must coordinate and control across all three dimensions and by doing that they apply a matrix structure. (Grant, 2008)

The difference between a functional organisational structure and a matrix is the functions or projects that cut laterally across many perhaps more “traditional” functions. This results in a matrix of superior and subordinate relationships with functional personnel reporting directly to both project managers and functional managers, as van be seen in Figure 9. (Cleland, 2004)

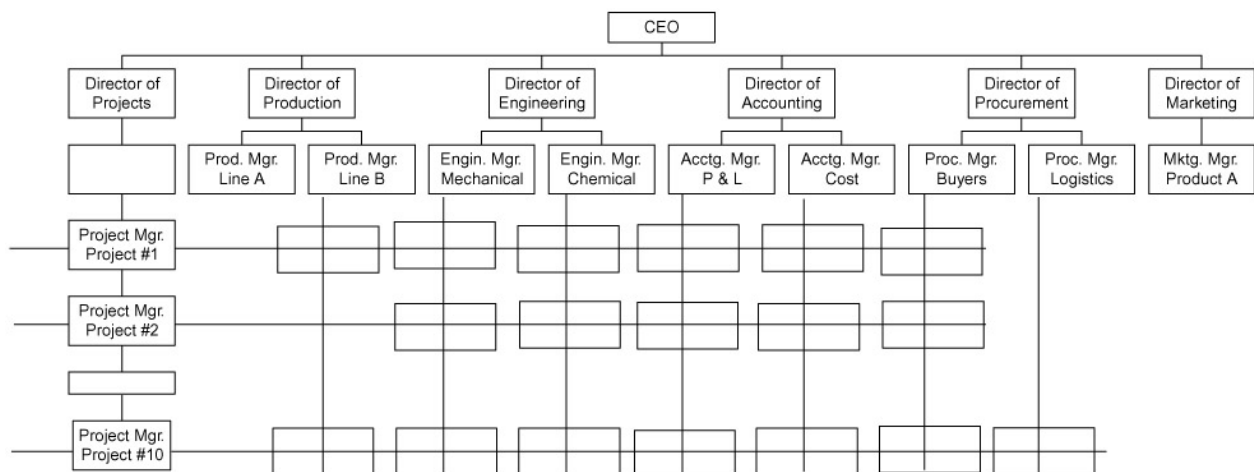


FIGURE 9: ILLUSTRATION OF A MATRIX ORGANISATIONAL STRUCTURE (CLELAND, 2004)

A matrix organisation simplifies and shortens the day-to-day decision making process since the project manager gets direct authority in his or her area. The alternative of a functional organisation would mean that everyday decisions have to be passed up and down the hierarchy which is less efficient. (Twomey, 2002) Also, pulling together highly skilled, specialised resources from different technical fields in projects tends to increase the technical and creative exchange between them. (Numerof & Abrams, 2002)

In comparison to a project organisation, in a matrix organisation specialists are collected under one functional manager which helps them improve their skills in the common expertise. When these specialists then are assigned to different projects they have a widespread corporate expertise which prevents the same mistakes to be made in different projects and creates opportunities for more standardisation across programs. (Meares, 1993)

The specialist manager cycles technical specialists in and out of project teams when they are needed and thereby make cost efficient use of available resources (Meares, 1993). In matrix organisations the need for, and cost of, developing expert staff in every department and geographical location can be avoided. Instead experts are assigned to projects where their specialty is needed which means that fewer full-time experts are needed in total and those with permanent employment have a higher rate of usability. (Numerof & Abrams, 2002)

There are however some shortcomings of matrix organisations. Peters (1993) points out that they are often easier to draw on paper than to actually work in because of the issues related to “dotted line responsibility”. The concept of “dotted line responsibility” refers to when the command relationship in an organisational chart is not a solid line but a dotted one, and what that implies is not always clear. For instance, a marketing manager directly reports (have a solid line) to the marketing director but also have “dotted line” relationships with the head of a brand, and the head of export sales. This means that he or she works for these product or market managers but reports to the functional manager who will have to mediate if there are conflicting requests from the others. Even though this sounds reasonable the result is often endless meetings for resolving these disagreeing needs. (Peters, 1993)

The division of power and authority, or power and accountability, in a matrix habitually lead to power struggles. Not uncommonly the power still resides with staff managers and directors while project managers have the responsibility to complete tasks. (Peters, 1993) Clear descriptions of lines of authority and defined expectations can to some extent help resolve such conflicts but there will always be gray areas that are open for interpretation and discussion. This leaves employees with the task to integrate the demands of two or more managers which may not be an easy undertaking. (Numerof & Abrams, 2002)

When employees constantly are placed where their expertise is needed they could end up reporting to a different project manager every day. This can create ambiguity and confusion for the employee regarding whom she or he is reporting to and who will evaluate his or her performance. (Appelbaum, Nadeau & Cyr, 2008) Managers in matrix organisation can also face issues related to performance. Performance is connected to aligning expectations, accountability and rewards which can be difficult under any conditions but perhaps even more so in a matrix where managers have not agreed upon goals, accountability monitoring, and rewards. For instance can one manager be responsible for, and rewarded, based on performance in, driving quality / service and while another manager drives cost reduction which sometimes can be at odds. (Numerof & Abrams, 2002)

2.5.3 SUMMARY AND APPLICABILITY

The organisational structure of a company has implications for the everyday work and thereby also for the work around innovation and idea selection. Hence, to be able to analyse the current situation in the studied company, consulting research on the implications of different organisational structures is helpful.

To be effective in its innovative efforts a global firm should put the right people where the uncertainties are to be able to collect and process information close to the environment. A *transnational* innovation strategy is appropriate for firms with both high technological and market information needs and implies a structure with local offices for gathering market insights that are supported by a global R&D facility.

By centralising R&D activities in one department advantages such as economies of scale are reached and the deployment of new technologies throughout the whole organisation is facilitated. A more decentralised structure on the other hand enables the different divisions to faster develop new products and processes that fit them and their customers.

Firms with multiple products, functions, and locations use matrix structures to coordinate and control across all these three dimensions. A matrix organisation shortens day-to-day decision making processes since project managers get direct authority in his or her area. Additionally, pulling together specialised resources from different technical fields in projects tends to

increase the technical and creative exchange. The division of power and accountability does however regularly lead to power struggles and create ambiguity and confusion for employees.

The studied organisation has a global, matrix structure which will impact its innovation and idea management processes. Therefore, theory on the implications of such organisational structures is included in the analytical framework for this study, together with relevant research from the previous sections that generally have focused more on specific aspects of idea management.

3 ANALYTICAL FRAMEWORK

The analytical framework is a selection of the success factors and concepts related to idea management presented in the chapter on previous research. The notions and theories presented in this framework will be used in data collection as well as structuring and analysing the empirical results.

In order to be innovative, firms need to have a durable flow of ideas to choose from for implementation. Firms cannot rely on a small sample of individuals to be the sole source of ideas, instead ideation requires the involvement of everyone in the business as well as affiliated external individuals. It is also in the interest of the firm to generate large numbers of ideas, since there appears to be a relatively constant success rate where it takes about 300 submitted ideas to find one innovation.

Figure 10 shows an overview of the analytical framework. The three main parts are idea generation, idea collection, and idea selection respectively. Sources of ideas primarily affects the first two steps, idea generation and collection, but can also have an impact on selection processes why there is a dotted line covering that area in the model. The organisational context is an underlying factor that can influence all other parts.

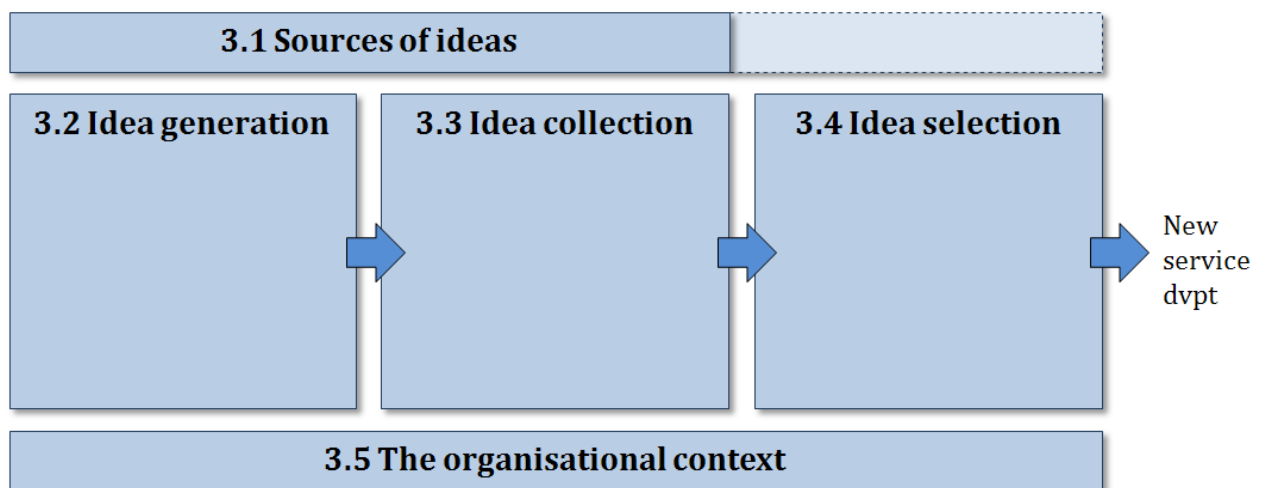


FIGURE 10: OVERVIEW OF THE ANALYTICAL FRAMEWORK

The different parts of the analytical framework on idea management are described in more detail in this chapter. After all parts are presented, they are concatenated to a more elaborate model of the analytical framework that is the main point of reference in data collection and analysis.

3.1 SOURCES OF IDEAS

There are two main categories of idea sources; functional sources including boundary spanners, and circumstantial sources. The more sources that the firm is able to tap into, the better positioned it is to succeed in generating valuable ideas.

There are five different functional sources of innovation: the firm's own internal value chain; the external value-added chain of suppliers, customers, and complementary innovators; university, government, and private laboratories; competitors and related industries; and other nations or regions. Thus, ideas can come from any department of the firm. Ideas from the external value

chain can come in the shape of spill-over from other firms both in terms of problems and solutions. Suppliers develop technology themselves that can later be incorporated in one's own products. Universities are complementary sources and do not replace the need for in-house R&D. The extent to which customers can be a source of ideas varies between industries. Some nations or regions are leading within certain industries, therefore certain regions can be valuable sources of ideas within specific fields.

Boundary spanners are people that understand the peculiarities of their own as well as other functions and can therefore successfully discuss issues with other functions and bring back and translate answers to the own function. These individuals can work across both internal and external boundaries. This is particularly important source of ideas since ideas in themselves are based on new insights and combinations of knowledge.

Circumstantial sources of ideas can surface through, for instance, planned firm activities, societal changes or unexpected occurrences, such as failures. Observations of changes in different forms and global trends can be used as basis for formulating relevant problems that then are used for finding viable business opportunities. Circumstances may generate a more or less conscious demand for solutions that can be created with technology push.

3.2 IDEA GENERATION

Ideas for incremental innovations are usually generated top-down in the organisation, whereas the discontinuous ones are more likely to have a bottom-up background since they are often closely related to customer interaction and technology development. Hence, it can be quite challenging to stimulate both radical and incremental ideas, side by side, in one and the same organisation. One key element to succeed with this is to keep activities related to discontinuous innovation separated from the more incremental and efficiency focused ones.

3.2.1 CREATIVITY AND CORPORATE CULTURE

Creativity is a prerequisite for innovation since it enables the generation of new and appropriate ideas which, if implemented successfully, can become innovations. As a rule, humans have the ability to be creative but the level and frequency of individual creativity varies over time and is affected by both social and work environments. There are three factors determining individual, or small team, creativity; expertise, creative-thinking skill and intrinsic task motivation. Expertise is the relevant knowledge and skills, creative-thinking skills refer to the use of different cognitive strategies, and intrinsic task motivation concerns how willing the person is to perform the task.

Diversity is a prerequisite for innovation and a diverse workplace open for interaction with external actors will expose the organisation to a flow of new influences. An organisation experiencing political problems and conflicts will not be able to create an atmosphere that encourages mutual exchange and sharing of knowledge. Similarly, strong competition and destructive criticism will defer from risk-taking since mistakes are not seen as opportunities for learning. Instead, for a creative climate an organisation needs to have a sharing culture where colleagues are encouraged to challenge and build on each others ideas in a constructive manner.

Implementing a company culture is however usually more challenging than figuring out what kind of culture the organisation should have. Just communicating the wanted culture through public statements and policy documents is not enough. For the culture to truly permeate every day business, top management also needs to act and allocate resources in accordance with it.

3.2.2 RESOURCES AND TOP MANAGEMENT SUPPORT

Top management plays an important role in the process of enabling innovation and stimulating creativity since their actions indicate what types of behaviour that is recognised and valued. Management allocate resources which send signals on what the employees should focus their time and energy on. To some extent, the overriding purpose of management is to direct the attention and efforts of the organisation to areas of strategic importance and successful idea management requires company-specific idea areas to focus on.

Management can also allocate resources in a way that gives individuals the freedom and time to reflect on and explore ideas on a more informal basis. This can help shift the focus of the organisation from routine tasks to creative and innovative work.

3.2.3 CLEAR INNOVATION PROCESS

Succeeding with the generation phase of idea management does require a systemic approach and a clear process to release creativity and channel it to relevant areas. Working with idea generation as a one or two day kickoff with brainstorming could produce some relevant ideas, but is not a sufficient approach in the long run.

An innovation process should be documented and communicated throughout the organisation to make sure the process, and its relation to corporate strategy, is understood by everyone. Individuals should not only understand the process and its purpose, but also be able to grasp what their role is in it. Therefore the process needs to be clear but there can also be a need for teaching members of the organisation how to go about searching for hints and inspiration in the surrounding environment. Clear processes and expectations will also ensure that ideators feel confident and that they can follow the progress of an idea which is intrinsically motivating.

3.2.4 REWARDS AND MOTIVATION

Documented innovative firms have systems and processes in place to reward and recognise innovative ideas since that signals the importance and value associated with innovation. Since intrinsic motivation is important for being creative, systems for rewards and recognition should be designed to trigger this type of motivation.

This can be done by enabling or informational extrinsic motivation. Enabling extrinsic motivation comes from rewards related to getting additional time and resources allocated to the work with an idea. Informational extrinsic motivation concerns rewards in the shape of information or competence, for instance training sessions or seminars, which have the additional benefit of further enhancing creativity through increased expertise.

It is recommended to refrain from monetary rewards since there is a risk of diminishing intrinsic motivation. It has been shown that monetary rewards are not necessary but what usually matters the most to employees is the symbolic recognition and acknowledgement.

More traditional rewards could however actually have positive effects on creative performance if they reward and recognise creative efforts rather than just successful or implemented ideas. This can be done by rewarding every idea and suggestion made, with no prior evaluation of its potential. By distributing small rewards often the appreciation of innovation can become a part of company culture. Additionally, small frequent awards reduce the risk of creating a competitive environment harmful to collaboration and creativity.

3.2.5 CROSS-FUNCTIONAL INTERACTION

Since collaboration and diversity has a positive influence on creativity it is not surprising to find that people who interact with different departments as an integrated part of their work, generate and submit more ideas. Moreover, individuals with high network connectivity generate more qualitative ideas. Thus, encouraging cross-functional interaction and enabling individuals to build large personal networks has a positive effect on the quality and perhaps also quantity of ideas generated.

For teams, the correlation between network connectivity and ideas of high quality are not linear in the same way. There are indications of diminishing returns to additional participants when it comes to innovating in teams. As numbers grow large, the creative process internal to a group becomes more important and conclusive to the outcome than the external connections.

Organisations can stimulate cross-functional interaction and personal connectivity by increasing the formal interaction by promoting forums, and points of interaction where individuals can meet and share information and experiences. Examples of initiatives for that include knowledge management systems, brainstorming sessions and workshops with individuals from different parts of the organisation.

3.3 IDEA COLLECTION

By combining different idea collection approaches and more complete innovation process can be created that does not discriminate against certain types of ideas and counteract preconceptions. Structured idea collection could be done actively through face-to-face, personal interaction and meetings, or via tools such as databases. One of the main purposes of structured idea collection is to channel the creativity by setting up some boundaries of just how far outside of the box ideas are expected to be, which will make the idea management more effective and aligned with corporate strategy. Focusing the idea collection activities could be perceived as limiting the creativity, but preparing and presenting a focus area can actually be more of a source of inspiration.

Innovative firms tend to apply qualitative rather than quantitative methods of obtaining customer insight in a structured way. Observing the customer through visits or spending time at the customer's location enables a deeper understanding of the customer's world and underlying needs. Customer insight can also be gathered by frequent and close communication with the customers, for instance within project teams.

There is a great number of online communities devoted to a wide variety of topics of interest, some of which can be utilised as tools for idea collection. For idea management a particular kind of online communities devoted to open innovation could be of interest. Open innovation communities make it possible for firms to leverage competencies outside of the firm to find the best possible ideas for how to tackle a future challenge. This sounds valuable but the overall effectiveness in terms of idea collection of these tools is in fact perceived as rather low by users.

Another form of open innovation is idea boxes open to anyone outside the firm. This approach has however also shown disappointing results, which could be explained by the large resources needed to assess and provide feedback on all ideas. Idea databases limited to the firm is however a commonly used tool for collecting ideas.

3.3.1 IDEA DATABASES AND IDEA MANAGEMENT SYSTEMS

The perhaps most traditional and common way to collect ideas in a structured way is through internal idea databases. The concept usually encompasses some sort of virtual box in which employees can put any type of idea that comes to mind. Even though relevant management representatives screen the incoming ideas and select which ones to take into further consideration, this is a rather passive system without direct face-to-face interaction or topics to innovative around.

One of the most important matters related to the maintenance of an idea database is the frequent assessment of the submitted ideas. Employees that have taken the time and efforts to send in their suggestion want a fast and constructive response and none or late feedback will defer the individual from submitting more ideas. It is also beneficial if the idea submitter is able to monitor the progress of the ideas, whether it is pursued, rejected or perhaps put on hold. Having clear structures and procedures of the idea database is also useful in the sense that it ensures that the system is predictable and rewards the right type of ideas.

Research indicates that rewards for ideas submitted in idea databases should be positive, frequent, small, personalised, varied and not just monetary. The submission of ideas could be part of a competition but only if it is a minor, short-term contest with purely positive and amusing rewards. To encourage overall participation, all contributions could be given a small token of appreciation, acknowledging participation can make the employees more confident and increase their inclination to submit more ideas in the future. Moreover, it is vital to avoid any type of negative feedback since rejection of ideas should not be perceived as punishment.

A simple form to fill in, time to submit ideas and perhaps also help with completing the form will reduce the threshold for ideators to submit their ideas. Employees are more likely to take an interest in an activity if they feel, not only competent enough, but also that their superiors believe they are able to do well.

Ideas tend to improve as they are exposed to cross-functional feedback from people with different experiences and knowledge, a process which stops as the idea is submitted to the database. Therefore it could be beneficial to instead of just having a traditional idea box add new functions in it and turn it into a more interactive idea management system. In an idea management system, the users are able to not only look at, but also comment and elaborate on ideas from individuals throughout the entire organisation.

Practical considerations around idea management systems include the IT tool used and the question of anonymity. The more often an IT tool is being used, the better the employee becomes in realising the full potential of the tool and when it can be helpful. Some ideators take pride in seeing their name on an idea whereas other would like to remain anonymous. Therefore, it is advisable to leave it to the individual to choose his or her preferred level of anonymity.

3.3.2 EVENTS FOR IDEA GENERATION

Event-based idea collection is generally carried out once or twice a year, where key individuals meet up for a day or two, online or in person, to present and discuss ideas. As already mentioned, solely working with innovation during infrequent events will not bring the company to a higher level of innovativeness. Events can however produce relevant ideas and be one part of a combination of idea collection approaches.

As always, the culture of the company will have an impact on the level of success for this type of idea collection events. Unless the culture promotes free exchange of ideas and employee participation, to successfully run this type of events will not be possible. Another issue with events is the difficulty to enable participation from all members of the organisation and get the participating ones to not be continuously “distracted” by everyday tasks. To counteract this it is important to include processes for giving feedback throughout the event and to update the ideator on the progress of the idea as means to motivate him or her to submit more ideas. Other success factors for idea collection events include a clear and exciting purpose, diversity among participants, facilitated collaboration, encouragement of new and exciting perspectives on the challenge, and finally a perceived sense of urgency can create additional enthusiasm.

Brainstorming is an event-based rather well-known tool for collecting ideas in various settings. Traditionally brainstorming sessions are conducted by a limited group of people, given a certain topic to focus their creativity on. But recently large-scale online brainstorming sessions have become more and more common, IBM’s innovation jams is perhaps one of the most well-known examples of this. With or without IT support, brainstorming session can be more or less formal, and arranged for and with basically any kind of stakeholders or other persons that could have information of interest and value to a firm.

3.3.3 IDEA COORDINATORS

IT has provided the pre-requisites for efficient collection of ideas, especially in large and geographically dispersed organisations. However, some people are less comfortable handing over their ideas to a system and prefer the interaction and immediate feedback possible in the face-to-face submission of ideas. This could be accomplished by the introduction of innovation coordinators; members of the organisation appointed to support the innovation process.

Although desirable, it can be practically difficult to enable face-to-face collection in large, global organisations. There are however examples of combined approaches consisting of innovation coordinators to whom one can send ideas and suggestions. Then, despite that fact that ideas are not always submitted face to face, there is still a clear recipient.

3.4 IDEA SELECTION

The main factor that decides whether a firm will recognise the potential of an idea or not is the dominant managerial logic, i.e. the collective viewpoint of the firm when it comes to which market it serves, the technologies to apply, whom to hire, who the competitors are, and so forth. The dominant managerial logic emerges as a firm develops as a means to simplify decision making and it can make the running of the firm more efficient. However, an idea that does not fit the dominant managerial logic has small chances of gaining the needed support no matter how excellent it is.

The early stages of a development process are often referred to as the front end of innovation, FEI or the fuzzy front end, FFE. The front end of innovation commences when an opportunity or idea is first deemed worthy of further consideration and ends with the launch of a development project. Compared to the development phase, this phase is intrinsically non-routine, dynamic, and vague.

There should be a structured process in the front end of innovation, preferably based on past experiences. However, the structure should still allow some flexibility to adjust to the characteristics of the idea. This planned flexibility will open up for more radical innovations since a rigid structure favour the more incremental ones.

Efforts made to conceptualise and describe the front end of innovation have resulted in a number of models and frameworks. This study will apply the conceptualisation by Hellström & Hellström (2002), as described below and in Figure 11.

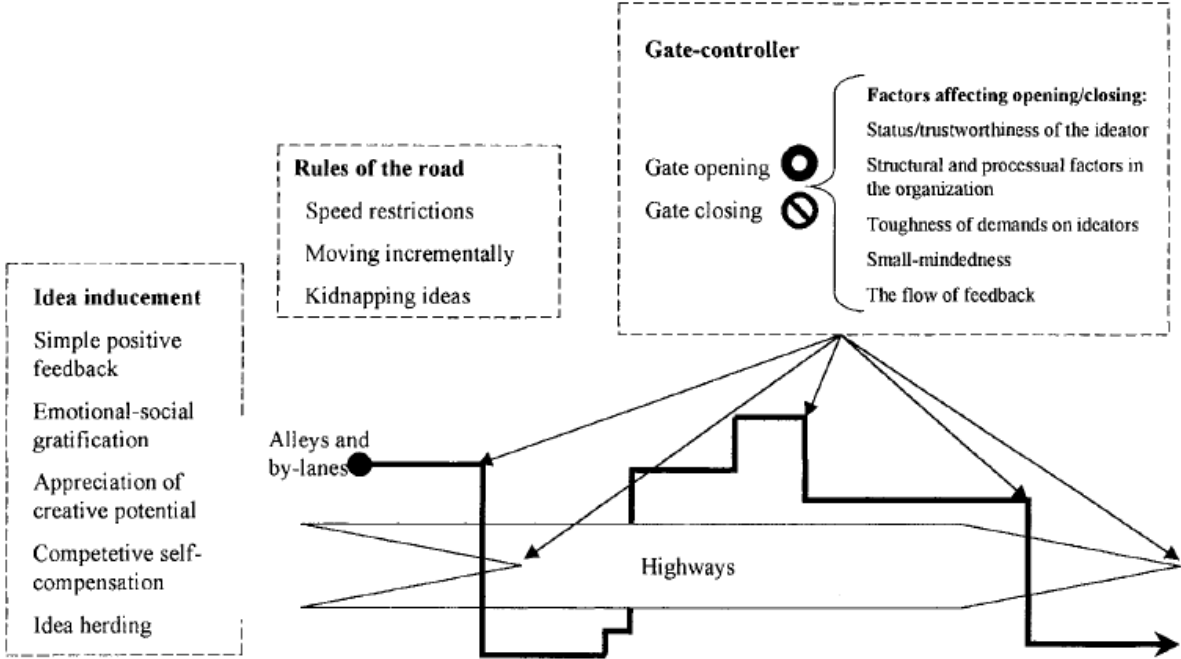


FIGURE 11: THE HIGHWAYS, ALLEYS AND BY-LANES IDENTIFIED BY HELLSTRÖM & HELLSTRÖM (2002)

This conceptualisation is based on the observation of several communication tracks in the FEI, so-called highways, and alleys and by-lanes. The “highways” are the formally established forums for communication around ideas and can be team meetings or R&D decision committees. These are excellent places for discussing ideas but are often perceived to be reserved for topics approved by top management and are therefore closed off for more radical new ideas. The alleys and by-lanes are more informal paths like the coffee room or the corridor. It can be quite efficient to get ideas through and formally endorsed through this way but it requires some knowledge to find and get into the right “routes”.

Irrespective which track an idea is following, but especially if it is the highway, gate-controllers will decide if the idea will be taken further. Most commonly the gate-controller is the ideator’s closest superior even though the ideator does not feel confident that he or she has the capacity to make an informed decision regarding novel ideas. Ideas can also be informally reviewed by peers and then collectively promoted or demoted by the team.

3.4.1 IDEA SCREENING

There are two different screening phases in the front end of innovation. The first phase determines whether or not the idea should even enter into the processes of the fuzzy front end. In the second phase it is decided whether or not the idea should leave the front end and turn into a development project.

Idea screening is a complex process with many difficult decisions to make. Simplifications are necessary and these tend to result in conservative and subjective decisions disconnected from reality. It is basically impossible to follow up on and judge this type of decisions; the process during which the decisions are made becomes the focal point instead. Thus, the more complex

the decision is, the more likely it is that it will be erroneous, and the more important it is to have appropriate evaluation criteria to follow in the decision process.

In addition to having a structured evaluation process it is important to make sure the concept development and selection process does not favour one kind of ideas more than others. Also a too rigid, conservative process will lead to the stopping or delay of promising projects. A weak evaluation process on the other hand will lead to an inefficient use of R&D resources through the failure of stopping fruitless projects.

Furthermore, a portfolio perspective should be applied to the evaluation process to make the most of the development funds. It should be possible to re-allocate resources allowing existing projects to be accelerated, killed, or down-prioritised based on the potential of new projects. The continuous reprioritisation provides a rationale for documenting not only ideas that are under development but also those that are temporarily, or permanently, abandoned. A change in the business climate can make abandoned ideas interesting later on. Moreover, documenting and evaluating the FEI process makes it possible to improve it and in the long run avoid missing out on promising opportunities.

3.4.1.1 SCREENING METHODS

There are several methods that could be used in the screening of ideas to facilitate the decision making process. The checklist is one common type of screening tool which can be expanded to a simplified scoring model or an Analytical Hierarchy Process.

A checklist is a list of criteria that are relevant to consider when evaluating an idea. Which type of criteria to include depends on the strategy of the organisation, i.e. what kind of development projects the firm wants. Drawbacks of this approach include the subjective character of the ratings assigned to each idea and the lack of support for resolving trade-off issues.

Simplified scoring models offers a way to prioritise among the different criteria by adding weights to the checklists. This is a relatively simple and powerful method, but can be misleading depending on the accuracy of the weighting. Also, a not uncommon mistake in designing scoring models is including similar criteria that measure the same aspect. If this happens and it is not compensated by the weighting of the criteria, the importance of that particular aspect will be doubled in comparison to other factors.

The *Analytical Hierarchy Process* is a four step process that can guide the construction and use of a weighted scoring model. First of all, a list of relevant criteria is compiled and thereafter weights are assigned to each of the criteria. When evaluating, the criteria are assessed and given numerical values. The final result is obtained by, summarising the products of each criteria and the corresponding weight.

3.4.1.2 EVALUATION CRITERIA

The screening methods contain a number of evaluation criteria, some of which can be in the shape of financial screening models that simplify the assessment of the estimated financial implications of an idea. Others are of a more qualitative nature, e.g. feasibility and compatibility.

It is advisable to use different evaluation criteria at the two different stages of the idea screening process. In the first screening process, where it is established if an idea should enter into the processes of the fuzzy front end, the decision criteria should favour ideas that could satisfy market needs and correspond to the firm's goals and capabilities. Sound criteria to consult at this stage can be complexity, feasibility, potential, and compatibility but most importantly it is to focus on market potential and company fit.

Using traditional, financial models to evaluate the idea at the early stage is very difficult due to lack of information. Moreover, such measurements discriminate against more radical ideas since these are more uncertain and difficult to compare to other projects. Furthermore, it is rarely so that the learning benefits and opportunity costs of radical ideas are taken into consideration.

For the second screening phase in the FEI where it is decided if a project should enter the development phase or not, the decision criteria should be more extensive than in the first phase. Important factors to consider at this stage include competitive reactions, resources, feasibility, and overall profitability.

Evaluation criteria can be generic, such as the ones previously mentioned but also business specific. The evaluation of IT business ideas in particular could include internally oriented criteria such as synergy, service quality evidence, quality of new service delivery, service expertise and standardisation. Relevant externally oriented business specific criteria for IT service development include dependency on software suppliers and partners, service innovativeness, legal issues and the potential to license the idea.

3.4.1.3 THE IMPACT OF INDIVIDUALS

The success of an idea is not just dependent on the evaluation criteria it faces. It is also affected by the behaviour and preferences of certain key people in the organisation, such as gate-keepers, champions, sponsors, innovators, ruminators and pre-study leaders.

Gate-keepers are found on the boundaries of the organisation, where they control the flow of information going in and out of the organisation and thereby select which ideas to import. There are also gate-keepers inside the organisation affecting the flow of information to and from projects. Individuals generally become gate-keepers because they either possess some sort of expert knowledge, which makes them influential sources of information on specific topics, or because they hold a management position.

Champions utilise political smartness, personal drive and to some extent also technical knowledge to promote ideas that they commit to. The champions use all available means to advocate an idea or project, sometimes taking considerable risks while doing so. Champions are not created or appointed; they emerge from within the organisation.

Sponsors are quite similar to champions, only less public in their support. Acting behind the scenes, sponsors are often found on senior management position, using their political influence to ensure organisational support and resource allocation to the idea.

The ideator and the champion, or sponsor, are rarely the same person, but occasionally so-called innovators do arise. The innovators are involved in the entire innovation process all the way through implementation. They are technology-focused, curious, creative and entrepreneurial, taking on whatever task is needed at the moment. They are keen on new technology, but see the need for a technology to bring business value to be of interest to the firm.

There are also more market-visioning versions of the technology-visioning innovators, so-called ruminators. Both ruminators and ideators are valuable to the firm, especially because of their drive and extensive knowledge of business situation, technology and market characteristics.

Pre-study leaders plan and execute the initial evaluation of ideas, compared to champions which are leaders in the sense that they communicate the vision and potential of an innovation. Pre-study leaders are often asked to provide management with a recommendation whether to pursue or abandon the idea. Furthermore, pre-studies are often driven by one single person making the characteristics of that person almost as important as the process itself. A good pre-

study leader is creative, knowledgeable and experienced in technology and markets. The most creative and productive pre-study leaders are often not the most well-thought-of employees because of their undisciplined thinking and difficulty to manage.

3.4.2 POLITICS AND SKUNKWORKS

The importance of individuals such as pre-study leaders and sponsors indicate that there are informal structures in place next to the formal evaluation processes. Politics are pervasive in modern corporations and project managers need to be aware of this and make the informal processes work in favour of their projects to succeed. In fact, this way of getting things done is probably the most common one in organisations. This is not necessarily very troublesome and can even be positive as, for instance, compensation for an inadequate or unrealistic innovation process.

There is however obvious problems associated with the informal approach. People with power will get their ideas through to a larger extent than the average person and the one who screams the loudest will be heard first. It will not matter that there is an excellent screening method in place if objectivity is not sought while using it. Furthermore, in organisations where informal processes are prevalent, ideators do not only have to come up with good ideas but also “sell” them to their colleagues and managers. It is not just about the facts and details but also about justifying the idea and getting it liked.

Skunkworks are projects run outside of the formal processes. Many successful innovations started as skunkworks because they lacked the required organisational support to go through the official screening process.

3.5 INNOVATION IN GLOBAL MATRIX ORGANISATIONS

The organisational structure has implications for the everyday work in the company and thereby also for the work around innovation and idea selection. To be effective in its innovative efforts a global firm should put the right people where the uncertainties are. To manage uncertainty, information needs to be collected and processed and this is most effectively done by being present and getting to know the environment.

A transnational strategy is appropriate for firms with both high technological and market information needs. This strategy implies a combination of local offices for gathering market insights and a global R&D facility. To successfully implement this strategy each division has to accept its dependency on the other divisions, and integration across the divisions through e.g. cross-division teams or rotational programs must be achieved.

The chosen degree of centralisation in decision making will also affect the innovativeness of the firm. By centralising its R&D activities in one department economies of scale are reached and the possibilities for division of labour and specialisation are maximised. The consistency of the firm’s new product development efforts will also be improved and the deployment of new technologies throughout the whole organisation is facilitated. However, a more decentralised structure enables the different divisions to faster develop new products and processes that fit them and their customers.

A matrix organisation simplifies and shortens the day-to-day decision making process since the project manager gets direct authority in his or her area. Pulling together highly skilled, specialised resources from different technical fields in projects tends to increase the technical and creative exchange. In a matrix organisation specialists are still collected under one

functional manager which helps them improve their skills in the common expertise. When these specialists then are assigned to different projects they have a widespread corporate expertise which prevents the same mistakes to be made in different projects

There is however shortcomings of matrix organisations, for instance, the division of power and authority, or power and accountability, in a matrix habitually lead to power struggles. Clear descriptions of lines of authority and defined expectations can to some extent help resolve such conflicts but there will always be gray areas that are open for interpretation and discussion. Furthermore, the matrix organisation can create ambiguity and confusion for the employee regarding whom she or he is reporting to and who will evaluate his or her performance.

3.6 SYNTHESIS OF ANALYTICAL FRAMEWORK

The analytical framework consists of five key component related to idea management; sources of ideas, idea generation, idea collection, idea selection, and the organisational context. Sources of ideas refer to the people, departments, firms, and institutions that provide ideas as well as the trends and activities that inspire new insights and ideas. Idea generation concerns the creative climate, and how the company culture and processes provide a breeding ground for new ideas. Idea collection then covers how firms gather ideas, but also includes some tools and methods for idea generation. How collected ideas are evaluated for further consideration for full-scale development projects is considered in the idea selection part which focuses on firm decision processes. Finally, the organisational context which in this case is a global matrix organisation can influence all parts of idea management.

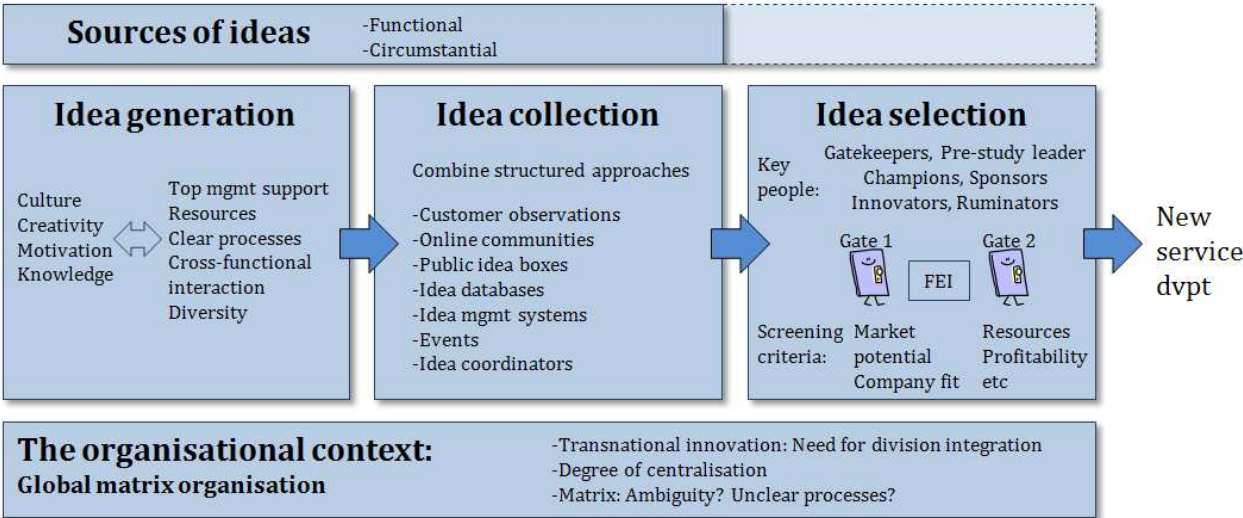


FIGURE 12: THE DETAILED ANALYTICAL FRAMEWORK

The analytical framework guides both data collection and data analysis. Even though Figure 12 gives a quite detailed overview of the framework it is still an overview and additional concepts presented in this chapter are also considered in the study.

4 METHODOLOGY

This chapter starts with an account of the selected research design followed by paragraphs presenting the triangulation of data through different research methods. A discussion on the aspects of validity and reliability as a result of the selected research design concludes the methodology chapter.

In order to fulfil the purpose of this thesis it was necessary to acquire in-depth, qualitative data on Volvo IT, its organisation, and processes. Furthermore, the conclusions of the study were not expected to be applicable outside of Volvo IT, making a case study the most suitable overall approach. During the study, primary data was collected through semi-structured interviews and secondary data in terms of process descriptions, policy documents and other relevant internal documentation was made available by Volvo IT through the Volvo Group intranet Violin. The next section contains a more detailed presentation of the design of the case study, including a schematic presentation of the work process.

4.1 RESEARCH DESIGN

In order to be able to plan and execute a suitable research design, a couple of weeks were initially set aside for unprejudiced and exploratory investigation of the Volvo IT organisation and the current service development processes. During this initial open investigation, semi-structured interviews were held with employees in positions with insights to, and influence over, new service development in the different Solutions Units of Volvo IT. Apart from providing a basic understanding of the organisation and its processes, the interviews also made it possible to identify further persons of interest to interview, so-called subject matter experts, i.e. individuals possessing specific information which could be of use to this study.

The exploratory investigations were accompanied by a review of literature on the subject of idea management and innovation. The interview data highlighted certain aspects and topics of interest which in turn guided the literature studies and subsequently helped to narrow down the area of relevant literature to construct an analytical framework for data analysis.

Literature studies and collection, as well as interpretation, of data were carried out repeatedly in an iterative and complementary manner. As data was collected it required additional explanation and support from previous research which then in turn revealed a need for more data and so on and so forth.

The initial interviews provided insights to the experiences and perceptions of a relatively small part of the organisation and, to a large extent, from individuals in various types of managerial positions. To get a better understanding of the creative climate in Volvo IT, what personnel throughout the organisation do with the ideas they come up with and in what way they would prefer to submit them, semi-structured interviews were conducted with a larger random sample of the organisation. Care was taken to ensure that the interviewees included representatives from all major departments and sites. More information on how the interviews were conducted will be presented in the section *4.3 Interviews* later in this chapter.

In an attempt to verify the feasibility and potential of the improvement suggestions, as well as validate the empirical findings, a list of improvement suggestions was discussed with previous interviewees during an open presentation. By testing the improvement suggestions, the risk of the suggestions only being of use to certain parts of the organisation will decrease. Taking overall feasibility and the feedback from the interviewees into consideration, the list of

improvement suggestions was narrowed down and the most promising options elaborated on. The research design, from the formulation of research questions to the design of final recommendations is graphically presented in Figure 13.

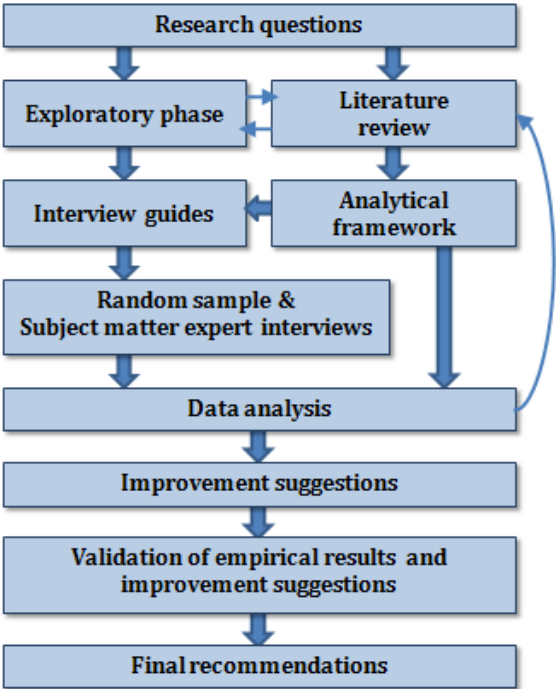


FIGURE 13: RESEARCH DESIGN

4.2 LITERATURE REVIEW

The literature review commenced during the initial exploratory phase and continued throughout the major part of the study as complementary theory was needed to analyse the data obtained. Key word searches in the catalogue of Chalmers library, containing both electronic and paper books, were the starting point of the literature search. The key words used were: idea management, fuzzy front end, front end of innovation, but also the truncation idea**. The same key word searches were also applied to electronic databases containing articles published in a wide variety of scientific journals. The databases searched consist of ProQuest, Wiley Interscience, Science Direct and Emerald Library. Apart from these searches, previous research studied also included literature from past courses and recommendations from researchers and the supervisor at Chalmers.

4.3 INTERVIEWS

As described in the section on research design, data was primarily gathered through semi-structured interviews with personnel at Volvo IT. The majority of the interviews were held in a semi-structured manner since this allows for a flexible interview process where the interviewer is able to follow up on interesting or unexpected answers.

Furthermore, using a semi-structured approach when interviewing reduces the risk of the interviewer’s presuppositions biasing the data collected (Bryman & Bell, 2007). Since the quality of the outcome of the study is directly related to the acquired level of understanding of the organisation and its members, avoiding biased and premature conclusions is important. Albeit that an unstructured approach is the least biased one, since data was collected by more than one

person, a semi-structured approach was necessary in order to ensure a certain level of comparability of interview styles (Bryman & Bell, 2007).

A master interview guide was constructed based on the research questions and the contents of the analytical framework. First of all, the research questions were broken down into interview questions that individuals within Volvo IT were expected to be able to answer. Thereafter, these interview questions were compared to the analytical framework to ensure that it would be possible to analyse underlying causes and effects with the data gathered. This resulted in a master interview guide, containing a list of interview questions that would make it possible to answer the research questions and analyse the data with the analytical framework.

The master interview guide was the starting-point from which to construct other interview guides; one for the random sample interviews and several different guides for interview objects chosen as subject matter experts because of their particular competence and position. The interview guides were not tested on a specific test sample but adjusted to feedback gotten during the first interviews. An advantage of in-person, semi-structured interviews is that if a question is not completely understood by the interviewee there is a possibility to clarify it already during the interview. The master interview guide and the interview guide used in the random sample interviews are available in Appendix I.

Each interview commenced with a brief presentation of the interviewers and the overriding purpose of the thesis for which the data provided by the interviewee would be utilised. Thereafter, the interviewee was asked to present herself/himself and her/his role at Volvo IT. The third section of the interview contained a number of questions, each with the purpose of extracting data relevant to one, or several, research questions. The final part of the interviews consisted of a brief wrap-up where the interviewers asked for permission to contact the interviewee in case additional questions would arise. The interviewee was also given an opportunity to ask questions.

Interviews conducted with subject matter experts started the same way as the random sample ones, but the third part of these interviews varied greatly depending on the subject in question. Since each of these interviews was unique, no particular guide for them is attached to this report. There are no interview guides available for the interviews held in the exploratory phase either since these were held prior to the construction of the master interview guide. The exploratory interviews started out semi-structured with some initial guidance from the research questions and the position of the interviewee in question. However, given the exploratory nature of that phase of the study, the majority of the questions asked were follow-up questions that surfaced as a result of previous answers.

The interviews were not recorded but documented by taking notes during the interview. Both researchers were present at all interviews and shared responsibility in leading the interview and taking notes. Even though both researchers were expected to ask follow-up questions and take notes, it was decided beforehand who had the main responsibility for taking notes while the other focused on guiding the interview. Not using recording devices keeps the interview less formal which can help make the interviewee feel more comfortable and open when responding. The downside with only taking notes is that details could be lost in the process, but the advantages of having a relaxed and safe atmosphere was considered more important.

Not recording the interviews also made it difficult to utilise quotes when presenting the empirical results. However, since the interviews were mainly held to get an understanding of current practices and processes rather than the opinions and attitudes of the interviewees, quotes would not have been a vital part of the empirical results, nor the analysis, even if they had been readily available.

4.4 SAMPLING

The initial set of interviewees was identified in cooperation with the Volvo IT supervisors and consisted of Solution Office Managers from the Solution Units. However, the sample of interviewees was expanded over time as past interview subjects highlighted other members of the organisation, as relevant sources of information. This snowballing type of sample selection was used throughout the entire study but more strategic selection of interviewees was also conducted, based on their current and past positions within the organisation.

For the larger random sample of Volvo IT employees a probability sample was used. Based on size of departments and sites, a number of individuals from each category were randomly selected for interviews. Only five of the selected interviewees refused to participate, but for those who did, a new person in the same category was randomly selected and contacted. A list of all interviews can be found in Appendix II.

4.5 DATA ANALYSIS

The data was analysed based on knowledge gathered through the literature review with the analytical framework as the main point of reference. Data was continuously analysed as it was gathered and findings were also continuously discussed with Volvo IT and Chalmers supervisors.

The analytical framework was compiled especially for this study which means that there has been a subjective selection on which previous research is most relevant and useful for this particular case study. There is of course a risk that this selection could have been done in another and perhaps better way, for instance, articles can have been misinterpreted or even missed. However, the combination of a broad and thorough literature search with the fact that the authors of this report have several years experience from reading and interpreting management literature should help ensure an appropriate analytical framework.

The responses of employees were interpreted in relation to which position the interviewee had, to which department he or she belonged and at which site he or she was located. The purpose of this was to be able to discern differences in perception of the situation depending on where in the organisation a person was located. There are other personal characteristics that could be used to interpret the data, e.g. nationality, educational background, and years of employment. However, since the focus of this report is on the processes, practices, and organisational characteristics of Volvo IT and the interviewees have been selected based on their position, these factors are considered most relevant.

Even though the analytical framework has an additional fifth part, both the analytical framework and the empirical findings are divided into four main topics; sources of ideas, idea generation, idea collection, and idea selection. For each and every main topic the data was first analysed based on corresponding analytical framework parts. Since all areas are closely connected there was also a need for cross-referencing data and theory from the different parts to get a more complete and accurate picture. The analysis revealed areas of improvement for which potential improvement suggestions were designed based on success factors presented in the analytical framework. The suggestions were then elaborated on and adjusted to fit the conditions of Volvo IT based on the personal experiences of the authors of this report.

4.6 RELIABILITY AND VALIDITY

Opinions differ among researchers on how to address the criteria of validity, reliability and replicability when it comes to case studies since the uniqueness of a case automatically has a detrimental impact on some of these factors (Bryman & Bell, 2007). However, bearing in mind the characteristics of a case study, this section addresses further implications of the chosen research design on these criteria.

This case study is of an inductive nature in so far that it is mainly based on qualitative data and builds theory in terms of improvement suggestions for Volvo IT. However, these theories on potential improvements originate from the analysis of empirical data using existing theory and are not designed to be general and applicable to other organisations. Still, although this idiographic approach will be used, there is all the while a possibility for the case study to be of a representative, or typical, nature. Given that it is difficult for firms to excel in all areas of innovation and idea management, one cannot exclude the existence of similar firms for which the improvements suggestions also could be valid. However, it does not lie within the scope of this thesis to generalise the conclusions across different organisations. This would imply that the external validity, which addresses "...whether the results of a study can be generalised beyond the specific research context." (Bryman & Bell, 2007, p 42) is relatively low but, at the same time, that does not constitute a problem given the purpose of the study.

Whereas the external validity is of less importance, striving for a high ecological validity is crucial in order for the improvement suggestions to have the desired effect. Low ecological validity means that the findings, although perhaps technically valid, are influenced to such a large extent by the interference of the research in itself, that they are not applicable to the everyday life of the organisation (Bryman & Bell, 2007). In this study, the interview questions do not cover a delicate topic and therefore interviewees are not expected to purposely give answers that misrepresent the current state of affairs or their perspective on the situation. Another measure taken to ensure high ecological validity includes taking notes as opposed to recording interviews, thereby reducing the risk of the interviewee feeling uncomfortable and therefore less inclined to express personal thoughts and opinions. In addition to that, interviewees of the large sample of Volvo IT employees were reassured that their responses would only be reported on an aggregated level.

An adequate ecological validity is a promising foundation to build on to ensure that the causal relationships, upon which conclusions drawn later on, are real. This question of internal validity (Bryman & Bell, 2007) is not only based on the quality of the collected data but also on the tools and models used to analyse this data. Utilising established and reputable theories when conducting the analysis should help securing internal validity. Furthermore, the verification of findings and potential improvement suggestions during open presentations also helped ensure that the conclusions drawn were valid.

Satisfactory internal and ecological validity does however not automatically mean that the internal reliability, or replicability, will be acceptable as well. To ensure the replicability of the study interview guides are included in an Appendix I of this report, alongside with a list of interviews in Appendix II. An alternative interpretation of internal validity, in the context of qualitative research, is whether or not all members of the research team agree on the content of the data collected (Bryman & Bell, 2007). For this study in particular, this is obtained through joint data collection and analysis by both researchers.

5 EMPIRICAL RESULTS

The structure of this chapter generally corresponds to that of the theoretical framework. Thus, the empirical results chapter starts out with an account of the sources of ideas for Volvo IT, followed by a review of the firm's idea generation and collection practices. Thereafter, the manner in which ideas are evaluated will be presented and lastly a section on Innovation in Volvo Technology concludes the chapter.

The information presented in the empirical results chapter comes, unless otherwise stated, from 56 semi-structured interviews held with Volvo IT employees. The section on Innovation in Volvo Technology is mainly based on two additional interviews conducted with persons from the Volvo IT sister company, Volvo Technology. Interview templates and a complete list of interviews are available in Appendix I and II however, out of respect to the interview objects there will generally be no direct references made to individual statements.

5.1 SOURCES OF IDEAS AT VOLVO IT

The variety of sources from which ideas for new customer offers originate are for the sake of clarity grouped, according to the theoretical framework, into functional and circumstantial sources. The distinction between what is a functional and circumstantial source is not clear cut, since functional sources, e.g. internal departments, often turn to circumstantial sources, e.g. planned activities and technology trends, for inspiration. However, applying this division will create a clear structure and hopefully facilitate for the reader.

On an aggregated level, the five Solution Units are the primary sources of ideas since they are the departments responsible for the development of new services and solutions at Volvo IT. Ultimately, all ideas for new customer offers are sooner or later steered in the direction of the Solution Units. However, some of the ideas that surface in the Solution Units originate from other functional sources both from within the internal value chain of Volvo IT as well as the external one. All functional sources, including the Solution Units, have in turn been influenced and inspired by various circumstantial sources of ideas, e.g. technology trends.

The section on sources of ideas will continue with a more elaborate description of functional sources of ideas, starting with the Solution Units and followed by paragraphs presenting the empirical results for each of the other functional sources respectively. Finally, there will be a section on the surrounding circumstantial sources of ideas that influence practically all of the functional sources to some extent.

5.1.1 FUNCTIONAL SOURCES OF IDEAS

The functional sources of new ideas that the Solution Units are exposed to can be divided into several different categories starting with the other internal departments of Volvo IT, including the Tech Watch & Business Innovation unit. This relatively small unit is, from an organisational perspective, a part of the General Solutions Solution Unit, but due to its particular importance as a source of new idea, it will be treated separately. The other functional sources of ideas are suppliers, competitors and customers; both the customers within the Volvo Group, i.e. the sister companies of Volvo IT, and the external customers. Although the ideas are eventually directed towards the Solution Units, there is a flow of ideas and inspiration present in between the other functional sources and circumstantial sources as well.

5.1.1.1 THE SOLUTION UNITS

Four of the five Solution Units are organised based on the value chain of the customers, starting with Product Development, Sales to Order, Order to Delivery and finally Delivery to Repurchase. The fifth unit, General Solutions, supports the more common and organisation-wide IT functions such as knowledge management, business administration, email, security, real-time communication etc. (Volvo Group Intranet Violin, 2010A)

The ideas that surface within each unit are usually related to the area of expertise of that particular Solution Unit. However, it does happen that representatives from one Solution Unit, for instance when visiting customers, come across ideas or opportunities either on the border of two Solution Units, or ideas that should be pursued by another unit entirely.

5.1.1.2 TECH WATCH & BUSINESS INNOVATION

The Tech Watch & Business Innovation (TWBI) unit is the centre for monitoring and detecting trends in general, and especially with respect to future IT. The unit, and its purpose, is well-known throughout Volvo IT and it is often referred to when employees are asked to motivate why they feel that Volvo IT value innovative work.

There are some technology watch activities performed across Volvo IT but the TWBI unit has a responsibility to not only conduct such activities regularly but also communicate the results to the rest of the organisation. The unit consists of seven people, five based in Gothenburg, Sweden and the remaining two in Lyon, France.

The unit in itself is also a source of ideas for new customer offers through their work with so-called business innovation prototypes. These prototypes are small-scale experimental evaluations of concept, which if successful, might be the basis for some sort of new customer offer. The projects are to 50 percent co-founded by customers and the underlying ideas behind the prototypes come from a combination of technology trends and potential business challenges. Tech watch project managers emphasises that there has to be a business value associated with new technology in order for it to qualify for a prototype. In its early days, TWBI always approached the customer in question with an idea for a prototype, but today it is just as common that a customer takes the first step.

An account of how TWBI collects and distributes information on IT trends, i.e. circumstantial sources of information, can be found later in the chapter, under the heading *Circumstantial sources of ideas*.

5.1.1.3 OTHER DEPARTMENTS WITHIN VOLVO IT

Apart from the Solution Units, the Volvo IT organisation also consists of Customer Relations & Sales (CR&S), Application Delivery (AD) and Infrastructure & Operations (I&O). Of these three departments, the last two are generally not expected to work with finding ideas for new customers offers, not in comparison to the Solution Units. There appears to be few formal initiatives in place to tap into AD and I&O as potential sources of ideas. However, that does not mean that these units do not contribute at all with ideas, just not on a regular and structured basis. The CR&S unit on the other hand has a great deal of interaction with the customers, collecting customer requests and acquiring insights to more or less unarticulated needs.

5.1.1.4 CUSTOMERS – INSIDE THE VOLVO GROUP

The vast part of the Volvo IT business comes from customers within the Volvo Group, the sister companies of Volvo IT, such as Volvo Trucks, Volvo Powertrain, Volvo Parts, Volvo Penta etc. Volvo IT staff, e.g. the Solution Unit business consultants and analysts, spends a considerable

time at the customer's locations. In fact, some positions, such as Global Account Managers within the CR&S unit, can even have their regular work place at one of the customer's site. Volvo IT representatives are in many ways integrated in the customers business, for instance, they take part in internal meetings held at the customer's site. However, there are also parts of the organisation with limited customer interaction, such as I&O.

The close customer contact provides insight to the customers' strategic goals, business climate as well as their every day operations. These insights on customers' challenges and needs are then sometimes transformed, by the individual or team, into one or several ideas for new customer offers. The insights can originate from a direct inquiry from a customer or through the perception of more unarticulated needs.

5.1.1.5 CUSTOMERS – OUTSIDE THE VOLVO GROUP

One of the main reasons why Volvo IT has extended their business and approached customers outside of the Volvo Group is to be able to enjoy economies of scale when it comes to e.g. storage facilities and servers. Apart from the economies of scale, Volvo IT also offers existing services to external customers, e.g. a voice-picking solution for Saab, but one does not look to the external customers for ideas for new customer offers. The external customers are there to reduce risk, improve the overall profitability and lower the IT costs for the entire Volvo Group. Developing or modifying a solution to create a new customer offer, effectively reduces the scalability which is not in line with Volvo IT strategy.

5.1.1.6 SUPPLIERS AND COMPETITORS

For Volvo IT the line between suppliers and competitors is not set in stone, some stakeholders can be classified as a bit of both. Volvo IT buys a large part of the software they offer their customers, but there are some solutions and services that have been created or modified in-house. Therefore, although e.g. Microsoft is a supplier to Volvo IT, such a firm could also be categorised as competitor depending on what type of software or service one has in mind.

Because of the special relationship between Volvo IT and a large part of their customers, i.e. the Volvo Group, there is limited real exposure to competition when it comes to the internal customers. It appears to be highly unlikely that firms within the Volvo Group would turn to an external actor for the IT services today purchased from Volvo IT.

The external customers however, they have the ability to pick and choose between different suppliers of e.g. communication tools, knowledge management and business administration. There are those claiming that Volvo IT should improve the flow of ideas and inspiration from competitors. One could also expand the benchmarking to include not only the competitors but also the competitors customers.

Suppliers, both of hardware and software, do introduce circumstantial sources of ideas when they present what new products they have to offer. Additional or improved functionality can inspire to new services and solution of value to Volvo IT customers.

5.1.2 CIRCUMSTANTIAL SOURCES OF IDEAS

All functional sources of ideas are bound to tap into circumstantial sources of ideas in terms of unexpected events, perceived trends and changes in the environment. In addition to this, the Tech Watch & Business Innovation unit works to inject insights on circumstantial sources into the rest of the Volvo IT organisation. Representatives from the TWBI team takes part in workshops and seminars throughout the organisation where they, for instance, provide inspirational material and starting points for brainstorming sessions and other discussions.

Anyone in the organisation can get in touch with TWBI and ask for a free IT trend presentation. (Volvo Group Intranet Violin, 2010B)

Apart from taking part in different types of events, the TWBI unit also publishes information and thoughts on IT trends via e.g. blogs, newsletters and web TV with, for instance, clips from inspirational lectures. They also compile technology outlooks presented quarterly at the Volvo IT board meetings and part-take in a Tech Watch Network in place to stimulate a global sharing of knowledge and information on trends through Volvo IT. The network currently consists of 14 people, who are divided into two sub-groups, one for North America / Europe and one for Asia. (Volvo Group Intranet Violin, 2010C)

Volvo IT in general, and TWBI in particular, gather a great deal of their information on trends from the international IT research and advisory firm Gartner Inc. Apart from access to assorted parts of the Gartner research, the Volvo IT deal also includes the possibility to part-take in webinars, teleconferences and symposiums. (Volvo Group Intranet Violin, 2010D) Other sources of input include the members' personal network, daily news feeds, cooperation with academia and serendipitous everyday incidents.

5.1.3 SUMMARY

The five SUs are the primary sources of ideas since they are the departments responsible for the development of new services and solutions at Volvo IT. The ideas that surface within each unit are usually related to the area of expertise of that particular unit. However, some of the ideas that surface in the SUs originate from other functional sources both from within the internal value chain of Volvo IT as well as the external one.

There are some technology watch activities performed across Volvo IT but the TWBI group has the formal responsibility conduct such activities regularly and communicate the results to the rest of the organisation. Volvo IT in general, and TWBI in particular, gathers a great deal of their information on trends from the international IT research and advisory firms such as Gartner Inc. Regarding other departments in Volvo IT there appears to be few formal initiatives in place to tap into AD and I&O as potential sources of idea while ideas from CR&S are commonly collected.

The close customer contact with customers in the Volvo Group provides insight to the customers' strategic goals, business climate as well as their every day operations. The relationship with external customers is not the same however and these customers are not really considered potential sources of ideas. Suppliers, both of hardware and software, do introduce circumstantial sources of ideas through their new products and additional or improved functionality.

5.2 IDEA GENERATION AT VOLVO IT

Idea generation depends on the general corporate culture and work processes, as well as more specific initiatives aimed at increasing creativity and solving particular problems. To get a reasonably complete picture of idea generation at Volvo IT widely varying factors such as the creative climate and corporate culture, top management support and communication, cross-functional and external interaction needs to be considered as well as the role of the Tech Watch & Business Innovation team.

Creativity is closely connected to idea generation and an internal survey performed in 2007 revealed that there perhaps were more factors acting against creativity than for it in the organisation. Diversity in the workplace and closeness to customers, partners, and universities

was the main strength while weaknesses included lack of time, rewards, and skills to be creative, rigidity and resistance to change, long lead times, and the need for a more open mindset that accepts mistakes. Additionally, the study identified some threats consisting of competitors being more creative and better at managing creativity than Volvo IT.

5.2.1 CREATIVE CLIMATE

During the interviews performed at Volvo IT, it became evident that the organisation has an open atmosphere with a lot of informal communication. Even though the interviewees were randomly selected and had not previously heard of the study they were generally positive towards taking the time to answer questions and were very open with their thoughts on what is working well and what is not.

A common opinion seems to be that the creative climate is quite good since a lot of Volvo IT employees have good customer insights and are creative. The main issue is then identified as getting the ideas to development projects. This is further supported by the view that changes in IT services and solutions progress very slowly because of the numerous IT systems in place in the Volvo Group. What is currently being developed and implemented have often already been discussed for 4-5 years. An example of this is the spare parts online shop that is now implemented in Penta. The need for it was identified more than five years ago but Penta did not have the funds to develop the IT solution. Therefore it took five years to get enough supporters of the idea and investigating the idea further as a bit of a skunkworks before the service could be developed through Volvo IT's R&D budget.

The creative climate is affected by an almost interminable list of factors. The corporate culture is perhaps the foremost factor and something that Volvo IT is actively working on. Factors such as the new, more centralised organisation, the lack of time for innovation, and the lack of formal rewards, trainings, and discussion forums for new ideas could however counteract innovation.

5.2.1.1 CORPORATE CULTURE

Corporate culture is one chapter in Volvo IT's strategic document and covers which corporate values the company should have and how to implement them. Volvo IT has a culture manager that is responsible for this and reports directly to the management team. His area of responsibility include the corporate culture and behavioural issues, and he works on making sure the culture supports the strategic objectives as well as attracts and retains employees. He does this by putting words on how the current culture is and how it should be, and thereby making it more concrete and manageable to make needed changes.

The culture manager looks at what is "under the surface" in the organisation which affects how people behave and enjoy being at work. There are lots of underlying values and other factors that determine how individuals act. Therefore, he wants the organisation to have a clear, common vision, a common value base, and a climate with trust where mistakes are allowed. There should also be a low level of fear and other limiting collective values because such values lead to negative behaviour. For instance the feeling of not being good enough can lead to constantly working long hours, or the feeling of not belonging in the group can lead to trash talk of others.

To ensure an appropriate culture on departmental level, the culture manager measures the values of the individuals, the values of the department, and what values the individuals would like the department to have. If there are major differences between how it is and what the employees would like to have, an action plan is constructed together with the employees to improve the situation.

Practically the culture manager has also created a common value base for Volvo IT which have now been printed and distributed in the company. Because culture is connected to, and can be changed through, dialogues and the stories told in an organisation he has gotten some help to diffuse these values throughout Volvo IT. This is done with a large number of culture ambassadors that he has appointed and trained to spread these values through dialogues.

The more than 300 culture ambassadors are spread out on all levels in the organisation. Being a culture ambassador means taking on an extra role besides the normal daily work that encompasses being a role model, acting as a soundboard on cultural issues, facilitate cultural transformation, and observing how the corporate culture develops.

5.2.1.2 TIME FOR INNOVATION

People throughout the organisation report that they do not generally have any time to spend on own, yet work-related, projects since they are so busy with their ordinary tasks. This is further supported by the fact that a lot of employees have 90% chargeability, which means that they should be able to charge customers for 90% of their time. A large part of the remaining time needs to be spent on group or department meetings and trainings which give them very little time for investigating own ideas or being creative.

Apart from a few exceptions interviewees that do not wish to have the possibility to take a few hours on their own to look into an interesting idea, many interviewees would appreciate that opportunity. They see a potential for assessing and improving their work situation as well as generating ideas related to customer value.

One set of departments where most employees actually do have the possibility to investigate ideas a little bit before taking them further is the Solution Units. Before launching a full-scale development project, the Solution Units are able to conduct pre-studies. Even though some evaluation and acceptance from the organisation is needed for this, this means that ideas can be further investigated without going through more rigorous assessments and resource allocation.

Within the Solution Units they have also stopped only measuring “chargeability” and now follow up on “usability” as well. While chargeability only refers to time spent on customer projects, usability also include time spent on R&D projects financed by Volvo IT’s R&D budget. The implication is that customer projects are not valued higher and constantly prioritised over R&D projects anymore. This, in turn, results in a change in the mindset in favour of pre-studies for new innovative ideas.

5.2.1.3 REWARDS, TRAININGS, AND DISCUSSION FORUMS

In Volvo IT there are no formal processes in place for rewarding innovation, developing creative skills, or discussing innovative ideas. This does not denote that innovative behaviour is not rewarded at all, or that ideas are not discussed among colleagues though.

There are no reward systems for individuals that come up with ideas e.g. for new customer offers. Ideators do, however, usually get some informal appreciation and feedback on good ideas anyway. A few individuals, from different departments and sites, expressed that they wished they could say that Volvo IT is a company where new ideas are appreciated but unfortunately could not. Even so, the majority of the interviewees do perceive Volvo IT as being positive towards new ideas.

Volvo IT’s culture manager wants to create a culture that supports the strategic goals including innovation but does not think individual ideators should be rewarded, especially not with large monetary sums. He does not promote monetary or other types of individual rewards because

they will not really make anyone happier and can create competitive behaviour. The main reason for acting in a certain way, e.g. being innovative and coming up with ideas for new services, should rather be connected to a feeling of doing something good for the organisation.

Volvo IT employees generally do not know of any training in creative problem solving, or similar topics, but most of the interviewees report that they get that kind of training on-the-job in their everyday situations and project deliveries. A lot of the interviewees expressed an interest in such trainings though and could see it as a way of better serving customers and delivering in projects. But if there is a training opportunity, it is important that there are possibilities for applying the new knowledge, otherwise it will just be a disappointment afterwards when the learning cannot be applied.

People throughout Volvo IT state they do not have any formal discussion forum for new ideas but many do discuss related topics with their colleagues during coffee breaks or lunches. There are widely varying opinions on whether a more formal forum would be beneficial for this where some see the added value while some do not think they would even use it.

5.2.1.4 CENTRALISED INNOVATION PROCESSES

With the recent re-organisation Volvo IT has gone from having local sites with some independence to a truly global, more centralised organisation. This means global processes and more centralised decision-making when it comes to idea selection and service development.

A view that some interviewees communicated was that the process is perceived as more important than the actual ideas. The assessment templates, financial estimates and following the process would then be more important than the potential of the idea. Interviewees with extensive customer contact report that this leads to robust, rigid services and solution that fit the process and all geographical markets, but is very different from what the customer originally requested.

A more centralised decision-making in Volvo IT has resulted in a more Gothenburg-centric innovation process where employees at other sites feel left out. Most of the resources for idea management and service development are based in Gothenburg. Many individuals at sites around the world do not know how to get ideas to the global arena and how R&D resources are allocated. Among those who do know how to access the service development process, many feel that their ideas are not understood by decision-makers in Gothenburg. This leads to stifled innovativeness or ideas being investigated and implemented as skunkworks.

As an example, the technicians in USA used to come up with a lot of ideas and before they could access some local funds for pre-studies and even for launching implementation projects. Now they are not able to channel their input and ideas which could have a negative impact on their overall motivation. Another example is how this has affected the work at other sites is the situation in India that is under way of being fully integrated as a part of the APAC initiative and a strategic focus area for Volvo IT to grow in. Local personnel know the Indian market and see problems with bringing the “European” solution there because customer preferences are so different, mainly due to the higher level of price sensitivity. Because of the lack of understanding regarding this in the Gothenburg offices, ideas from APAC are not prioritised for development. The implication is that local employees see the need to develop geographic solutions and if they do not get any support from the global organisation they will probably start develop ideas locally as skunkworks.

5.2.2 TOP MANAGEMENT SUPPORT AND COMMUNICATION

Top management support for innovation is a success factor, and so is the communication around the topic. Volvo IT top management have emphasised innovation by including it in the strategic objectives for the upcoming years, and these goals have been extensively communicated to the whole organisation. Due to the recent economic recession a lot of communication from top management has revolved, and still do, around cost efficiency. Combining these focus areas have resulted in a view that innovation should not cost anything and preferably result in further cost savings.

Interviewees that recognise that innovation is valued in Volvo IT often refer to the creation of the TBWI group. By supporting this group and the work they do top management are, by some, seen as “walking the talk” when it comes to innovation.

5.2.2.1 THE STRATEGIC OBJECTIVES

Volvo IT’s strategic objectives for the upcoming years can be considered well communicated since all interviewees are aware of them, but no one seems to really know what the innovation part of them mean for their daily work.

People throughout Volvo IT are well aware of the strategic objectives and generally happy with the communication around them. The main source of information when it comes to these goals are department, section, or group meetings in which a manager has broken down and translated the objectives to the relevant unit to some degree. Other ways of receiving this information includes newsletters, webcasts at the intranet, and in some cases town hall meetings. Interviewees expressed that there is absolutely no shortage of information regarding this but some individuals requested a more practical focus in the communication that relates more to their work.

Even though the strategic objectives are often broken down to the unit and linked to individuals’ personal development plans, practically no one reported that innovation as a new focus area had affected them in any way. Also, everyone seemed to have a different view of what innovation at Volvo IT is and how to interpret this strategic objective. An aired opinion is that innovation is not a natural part of top management’s culture and that they have put it in writing but not really allocated any resources or done anything concrete to improve innovativeness.

5.2.2.2 COST EFFICIENCY

Probably due to the recent financial downturn, one of the most recurring topics in communication from top management is cost efficiency. This is also true for communication around innovation, which conveys that innovation is not expected, or allowed, to cost anything but rather to lead to cost savings.

According to communication from top management innovation should be built into the everyday running of Volvo IT, but interviewees think that this sounds easier to talk about than actually put into practice. This is further complicated by the discussions on innovation where it is mainly looked at through the technological breakthrough perspective and not as “smaller” ideas that can be implemented right away. An interviewee pointed out that less complicated innovations also can make money by making services more cost efficient, faster, or more reliable, for instance by using available technology from Google or other service providers.

5.2.3 CROSS-FUNCTIONAL AND EXTERNAL INTERACTION

The amount of cross-functional and external interaction an individual has on a daily basis depends on which role he or she has, and where is the organisation that is. Generally, CR&S, SU's and to some extent I&O have much contact with customers. I&O also have considerable contact with suppliers. The most "isolated" individuals in terms of having both limited external and cross-functional interaction are found in AD which is the back-office.

Cross-functional and external interaction in Volvo IT is closely related to the used sources of ideas. To avoid repetitions, empirical findings on sources of ideas and points of interaction are mainly covered in the *Sources of ideas* chapter. For instance the subject of interaction with external actors is covered there and will therefore not be gone through here as well. Since Volvo IT primarily exists to support the Volvo Group most interaction and input for new ideas happens within the corporate group. Volvo IT does however have some external customers in addition to external suppliers like Microsoft, and external sources of information such as Gartner are frequently consulted.

5.2.3.1 CROSS-FUNCTIONAL INTERACTION

Depending on the role and current project a Volvo IT employee is working in, there can be a lot of cross-functional interaction in his or her daily work. In general, individuals belonging to the Solution Units, I&O, or CR&S have some cross-functional interaction in their daily work while there are a lot of more isolated people in AD. Also, at smaller sites it is not uncommon for individuals to have several areas of responsibility and more cross-functional interaction.

There are certainly different levels of cross-functional contact within a department but the average level of interaction varies somewhat between the internal departments. Solution Unit Business consultants for instance does not just interact a lot with customers but also with other Volvo IT employees from different departments. Another example of well-connected employees is Account Managers in CR&S who are often part of so called customer team with participants from various departments. In AD, on the other hand, there are software developers that mainly interact with the project manager and thereby not really with anyone outside the own department.

There can be more interaction between departments at smaller sites since they work and sit closer together and due to wider areas of responsibility. At a small site it is possible to have a local manager from another department than some of his or her team members. Also, at smaller sites one single person can have several roles and thereby also more points of interaction with others.

The connections between different departments are usually confined to the areas of responsibility and common projects. Regarding additional knowledge and understanding of what is going on at other departments in Volvo IT, it will depend on the personal network and what information is available on the intranet. There are some useful facts on new service or solution projects on the intranet but a number of interviewees would like to have more details. Currently, mostly successful, almost finalised projects are broadcasted while employees would like to have earlier information on what is being developed.

5.2.3.2 CUSTOMER INSIGHT

As already mentioned, Volvo IT has close contact with its customers, especially the ones in the Volvo Group. There are people working in close collaboration with customers in all departments but the Solution Units and CR&S have the most well-connected.

The shape of the contact with customers within different Solution Units differs but often include being located in the customer's office and partaking in customers' internal IT meetings. Business consultants often have a desk in the customer's office and work from there to get a deeper understanding of the customer's business situation and how Volvo IT could improve it. In SU StO the business consultants even spend some time at the truck dealers to really get to know the customer and the end users. Additionally, it is not uncommon for Solution Unit employees to previously have worked at their customers' which gives them unique insights.

CR&S are formally the customer's voice in Volvo IT. Account Managers often work more with the customer's strategic objectives than Volvo IT's and sometimes even sit next to the customer CIO. To get a good view of the business opportunities and how to best offer the customer IT services, CR&S work with "customer plans". Such a plan includes customer strategy, key projects, and business opportunities for Volvo IT. The work with these customer plans is driven in the "customer teams".

A customer team is a functional team chaired by the Global Account Manager (GAM) that extends out across the entire organisation. Core team members include representatives for Volvo IT top management, CR&S, Finance, SU, AD, and I&O. The mission of the customer teams is to ensure that customer requirements drive the development of Volvo IT's delivering and offerings, and secure that the agendas of the representatives' units are aligned with the customer plan.

Innovation at the customers can be driven by Volvo IT through the customer teams. An example of this is Volvo Parts that each year gives Volvo IT a number of challenges and presently one of them is innovation. This means that Volvo Parts wants Volvo IT to be innovative in a way that helps them become more innovative, and not just in terms of new services but also in everyday work in existing system. For instance could this result in the use of an already existing and commonly used search engine in a service system that allows the user to search for components or using Google maps to help truck drivers to find hotel rooms, restaurants, etc. when their truck is at a workshop.

5.2.3.3 TECH WATCH AND BUSINESS INNOVATION

By both looking outside the Volvo Group for technology and market trends as well as being well connected with the different BA/BU's in the group, TWBI have good insight into what is currently going on and what can be interesting for Volvo IT to further look into. They have a blog and record webcasts from time to time to communicate around their work and generally interesting technological developments. TWBI are also often invited as inspirational speakers at innovation workshops and seminars. Moreover, they are in a good position to identify and bring together similar projects in different parts of the Volvo Group to increase synergies and cross-functional interaction.

The prototypes are not just hands-on tests of the application of a new technology but also serve as inspiration for what can be done. Sometimes prototypes are also used as political tools to initiate change. A small test project does not feel very threatening to most people but can be a powerful tool against negative comments claiming that something is not feasible for instance.

TWBI has gotten both internal and external attention which has resulted in a wide awareness of their work and a high level of demand for cooperation in prototypes. Interviewees throughout Volvo IT refer to TWBI as a great source of inspiration and a sign that the company is actually investing in innovation. There is however those that see TWBI as a bit disconnected from Volvo IT and see difficulties in transferring ideas from prototypes to the ordinary service development.

5.2.4 SUMMARY

Volvo IT's organisation has an open atmosphere with a lot of informal communication. The corporate culture is perhaps the foremost factor for nurturing a creative climate and something that Volvo IT is actively working on. This work is led by the culture manager and the large number of culture ambassadors and they want the organisation to have a clear, common vision, a common value base, and a climate with trust where mistakes are allowed.

There are however some factors that could counteract innovativeness and creativity such as the new, more centralised organisation, the lack of time for innovation, and the lack of formal rewards, trainings, and discussion forums for new ideas. The recent re-organisation has resulted in a more centralised decision-making in Volvo IT with a more Gothenburg-centric innovation process where employees at other sites feel left out. A lot of employees report that they do not have any time to spend on own, yet work-related, projects. Even though there are no formal reward systems for individuals that come up with ideas, ideators do often get some informal appreciation and feedback on good ideas.

Volvo IT top management communicates their support for innovation by including it in the strategic objectives. This communication is done efficiently but perhaps not very effectively since employees have not understood what is expected from them in terms of innovativeness. The most recurring topic in top management's communication is cost efficiency and for work around innovations this is interpreted as an indication that innovation is not expected, or allowed, to cost anything but rather to lead to cost savings.

The amount of cross-functional interaction members of the organisation have depend on their roles but generally it is quite a lot in projects but not as extensive outside of their areas of responsibility. Regarding interaction with external actors, Volvo IT has close contact with its customers, especially the ones in the Volvo Group. TWBI is in contact with many outside companies, especially in the Volvo Group, and a big source of inspiration for many Volvo IT employees and a sign that the company is actually investing in innovation.

5.3 IDEA COLLECTION AT VOLVO IT

Idea collection at Volvo IT is primarily done through personal networks. There are no formal idea collection tools or methods currently in place and practically all interviewees stated that if they have an idea they would talk to their closest manager, Account Manager or SU contact. Some interviewees think that the new organisation has improved idea management though, since now you can go to the Solution Units with your ideas.

When asked what they would do if they came up with an idea, an overwhelmingly large majority of the interviewees responded that they would bring it to their line manager, or to an Account Manager or SU contact if they knew one. Also, some reported that they would talk directly to the customer. Before bringing an idea up officially it is not uncommon to discuss it with colleagues to get some additional views, improvement suggestions and confirmation of its value. There are no formal rewards or feedback channels for ideators but the advantage of bringing an idea to a close manager is that he or she can give some initial feedback and informal appreciation.

There are persons who are satisfied with the current idea collection practices and but there are also those who expressed a wish for some kind of easily accessible idea collection system. Amongst the interviewees that are content with the situation and do not see the benefit of having a formal system, the majority are based in Gothenburg. Many sites outside of Sweden used to have some practices around new ideas and projects which were terminated with the

implementation of the new organisation and have not really been replaced with something global that they can “see”. Therefore they would like to have some sort of idea submission tool that is visible on the intranet.

5.3.1 THE SUGGESTION BOX

There used to be a suggestion box in place in Sweden that was terminated last year. This was in connection to the roll-out of the new global organisation and the given reason is that it is unsuitable for a global organisation to have a local suggestion system. Before the termination it had been up and running for many years and was exceptionally well-known (in Sweden). The submitted ideas mainly focused on internal process improvements and other topics related to operational excellence, rather than being ideas for new customer offers.

The suggestion box consisted of an online portal as well as a physical mailbox for ideas written on paper notes. When someone posted a suggestion it was directed to a topic expert for evaluation. All ideas were responded to with feedback on why they would, or would not, be further considered for implementation. Everyone who submitted an idea got a small reward, like a mug, and ideas that was actually implemented yielded monetary rewards.

Assessing and responding to all submitted ideas, and in later stages deciding a reasonable level of reward, were quite time consuming for the appointed topic experts. Even though some good ideas was submitted and, later implemented, an estimated 95% of all ideas were more or less completely useless and still required considerable resources for handling.

Because of the individual monetary rewards, which could amount to considerable sums, it is reported that some individuals sent in ideas within their own line of work instead of implementing them themselves. This was frowned upon by the many in the organisation as they were perceived as getting additional payments for just doing their job.

The suggestion system was however good for those that had problems getting people to listen to their ideas. When ideas were sent to the suggestion box they always got a response and it was difficult for the organisation to ignore someone’s opinion or idea. The fact that the suggestion box was widely known and talked about was another large advantage. Having the suggestion box and rewarding all ideators showed that innovativeness was valued and recognised.

When the suggestion system was terminated last year the plan was to launch a global updated version of it around the same time. The launch was however postponed due to the financial situation at the time. To have a working suggestion system there need to be a person that is responsible for checking the box daily and a discussion forum where for cases that perhaps meet once a week. It is also important to make sure that good ideas are implemented and to follow up on that. Therefore, top management felt that launching an idea management system at a time when no idea could be implemented because of lack of resources would just send the wrong signals to the organisation. The new suggestion system is in the business plan for this year though and is therefore still planned to be launched soon in a new format.

The design of the new idea system is not finalised yet but there are some aspects of the old version that are likely to be changed. Submitting ideas will be encouraged in some way but probably not via individual, monetary rewards. There is also an idea on having a problem suggestion box instead, thereby focusing on finding the best possible solution to the underlying problem instead of assuming that the submitted idea already is the best solution. Whether this will be considered in the design of the new idea management system is unclear but there will probably be one common interface for people throughout Volvo IT where they can submit any kind of ideas no matter if they are related to customer offers or operational issues.

5.3.2 KEEP THE DIALOGUE GOING

Keep the dialogue going (KTDG) is currently a forum for discussing sourcing with Volvo IT's CEO, but when it was first started 18 months ago it was dedicated to cost savings discussions and ideas. It is an online forum that can be found on the intranet start page and that top management has given considerable attention in their internal, public communication. Faced with the economic recession Magnus Carlander, the CEO, challenged all Volvo IT employees to come up with cost saving ideas that could ultimately save jobs.

About 300 unfairness complaints, questions, creative ideas, and comments on others' posts were submitted during the first month the forum was open. The complaints about unfairness mainly concerned inequality in salaries, for instance the difference in salaries between American and Swedish employees. There were also harsh suggestions for top management to lower their own salaries and bonuses. A lot of people had difficulties understanding how their jobs could be threatened while Volvo IT still showed great financial results and top management received bonuses accordingly and asked about that. In addition to these negative comments and questions a lot of creative and useful ideas were posted, for instance how Volvo IT could save on license costs, consolidate on more economical platforms, and increase online collaboration to save on travel expenses.

All posts were responded to but not always on a one-to-one basis. If there were a lot of similar comments they could be grouped and responded to in more general terms. Some posts were responded to by other Volvo IT employees and the CEO, with the help of the corporate communication department, made sure that all posts got answers or feedback in some way.

KTDG was an appreciated initiative with a lot of people following the blog and being interested in implementing the good ideas. The posted ideas were grouped by the communications department and sent to relevant Solution Area Managers in the Solution Units. No follow-up study was made over how many ideas that were actually implemented but the recipients were reported to be very thankful for the suggestions they got.

5.3.3 LOCAL/DEPARTMENTAL IDEA COLLECTION INITIATIVES

Even though there is no formal idea collection methods for all Volvo IT employees there are some local or departmental initiatives in place. These initiatives include both different kinds of workshops and systems.

5.3.3.1 INNOVATION WORKSHOPS

Innovation workshops aimed at generating and collecting ideas on how to improve the customer offers are done in various groups but mostly within the Solutions Units or more closely to the customers in, for instance, customer teams. The setup varies but often a few hours are dedicated to the activity, which includes inspirational presentations from TWBI and group brainstorming sessions. Other inspirational material that can be included are Gartner reports and customer personas. Occasionally customers or strategic suppliers are also invited to these kinds of workshops.

The Solution Units often have innovation workshops in connection to the budget planning process to generate ideas to include in the R&D budget for the upcoming year. The sought output is a list of interesting projects and a prioritisation between them if all do not fit into the budget.

Customer teams mainly focus on the demands and challenges they have gotten from the customer and try to find interesting solutions to them in their innovation workshops. The

workshop can also be centred on a specific problem in need of innovative solutions. If ideas on how to improve the service portfolio surface, they are handed to the Solution Units for further consideration.

5.3.3.2 IDEA COLLECTION SYSTEMS

The available idea collection systems are IT solutions that a limited number of people have access to and can post ideas in. The systems are not the main part of the innovation process either but rather a complement to bringing up new ideas at meetings or in other forums.

An example of such a system used by one Solution Unit is one group's Teamplace where ideas can be posted. A lot of documents and information is shared there in addition to the category "Request for new services". It is a basic system where ideas are shortly written down and then discussed in the upcoming group meeting. Even though it says "Request for new services", not just ideas for new services are submitted but also ideas for internal issues such as coffee machine improvements. The first time an idea is discussed someone gets the responsibility for it and to investigate it further and present it on the next meeting. This quite seldom happens though because most ideas are either already in the roadmap, not feasible, or only small scale local adaptations.

CR&S have a CRM system which is a SAP tool where leads and identified business opportunities can be documented. This system is open to a quite large, but still limited audience that for instance includes Solution Unit members in addition to CR&S personnel. As an idea management system it is basic since ideas can be put in, saved and followed up but all the work around them is mostly done in live meetings. Interviewees state that the system does not help them becoming more innovative and that it is in discussions with other departments that ideas are generated and taken further. One of the main drawbacks of the system, and reason for its limited perceived value, is that it is difficult to use. For instance, there is no easy way of navigating and searching for ideas in the CRM system.

5.3.4 OPINIONS ON POSSIBLE IDEA COLLECTION INITIATIVES

A number of the interviewees had suggestions on how the idea management practices at Volvo IT can be improved. These ideas mainly concerned innovation blogs, innovation jams, idea boxes, and innovation leaders. Common for all suggestions is that idea collection interfaces should be easily accessible.

To increase innovativeness in Volvo IT some interviewees think that a visible innovation blog would be beneficial. The intranet start page is already full of information and the space there is very limited. The blog could be something similar to *Keep the dialogue going*, which top management showed they were engaged in and willing to fully support.

Regarding the suggestion to have an innovation jam, similar to that of Volvo Technology (VTEC LIVE), in Volvo IT, interviewees expressed that it seems like a good way to cut across the ordinary ways of communication and directly reach people throughout the organisation. Otherwise information can often be "translated", screened and perhaps even distorted as it is spread in the hierarchy. Moreover, the same individuals are usually invited to and attend this sort of idea collection events and inviting all Volvo IT employees could bring some new perspectives.

Interviewees were generally positive towards launching a new idea box. To have a place for submitting creative ideas and getting them documented was appreciated when the old suggestion box was active. Recipients of the ideas also valued the suggestions they got from the

old suggestion box and report that they at least got some interesting ideas. Interviewees in the Solution Units also see an idea box as a possibility to collect ideas during the year to bring out when it is time for the R&D budget planning process.

A new idea box could have other additional features than being open for all Volvo IT employees, as opposed the idea collection systems currently available. Some interviewees would like it to be better in the way submitted ideas are formulated with a clear ownership and a more detailed description. Perhaps ideators can be obliged to fill out certain information about their idea to ensure that others are able understand what it is about.

Another view is that having an idea box is beneficial but what would really be needed for each geographical area is an innovation leader. This person could be responsible for promoting innovation and be measured on number of collected ideas from the region. The individual assigned this task would need to be a people-centric person that are able to energise people around him or her.

5.3.5 SUMMARY

There are no global, formal idea collection tools or methods currently in place and practically all interviewees stated that if they have an idea they would talk to their closest manager, AM or SU contact. It is recognised that these informal idea management practices implies that the success of an idea depends to a large extent on the ideator's personal network.

There used to be a suggestion box in place in Sweden that is planned to be re-launched in a new global format shortly. Before the termination it was exceptionally well-known in Sweden and helpful for those that had problems getting people to listen to their ideas. The submitted ideas mainly focused on internal process improvements however rather than on new or improved customer offers. Assessing and responding to all submitted ideas as well as deciding reasonable levels of rewards were important work but considered quite time consuming by the topic experts. The new format is not yet finalised but the individual, monetary rewards will be avoided even though idea submission will be encouraged in some way.

Keep the dialogue going (KTDG) was a forum for discussing cost saving ideas with Volvo IT's CEO, who challenged all members of the organisation to come up with cost saving ideas that could ultimately save jobs in the recession. KTDG was an appreciated initiative with a lot of people following the blog and being interested in implementing the good ideas.

There are some local or departmental idea collection methods in place including both different kinds of workshops and systems. Innovation workshops aimed at generating and collecting ideas on how to improve the customer offer are frequently conducted within the SUs and in customer teams. The current idea collection systems are IT solutions that a limited number of people have access to and can post ideas in even though they are usually only a complement to bringing up new ideas in other forums.

The interviewees provided some suggestions on how the idea management practices at Volvo IT could be improved. All of them stressed that idea collection points should be easily accessible no matter if the approach consists of innovation blogs, innovation jams, idea boxes, or innovation leaders. Many sites outside of Sweden used to have some practices around new ideas and projects which were terminated with the implementation of the new organisation. Individuals at these sites more commonly than others expressed a wish for some sort of idea submission tool available for the whole organisation.

5.4 IDEA SELECTION AT VOLVO IT

Volvo IT has a structured and defined stage-gate process for how to manage service development projects, but the manner in which ideas come to enter that process is less clear. Once an idea has been collected there are different ways to fund further development. The characteristics of the idea, its scope and stakeholders, will have an impact on which possible sources of funding that could come into play.

On the level of the Volvo Group there is an IT budget, part of which is divided among different BA/BU for their IT costs. Another part is devoted to IT matters on the group level, such as group-spanning initiatives that will affect all BA/BU. These funds are managed by a number of Group Issue Board (GIB) all of which have a particular area of interest in mind. The third and last part is the Volvo IT R&D budget, which is managed by the Volvo IT Service Development Council (SDC).

This section of the empirical results chapter is structured around these three different sources of funding; the BA/BU, i.e. the customers, the GIB structure and the Volvo IT service development funds. Since this thesis focuses on the practices of Volvo IT the emphasis is on the firm's internal service development resources and on what basis these funds are distributed among ideas.

Apart from these three main sources of funding for the development of new and improved services, there is also a possibility to finance updates and improvements of an existing service with parts of the profit generated by the service in question. Each service has an estimated profitability and if the actual profit exceeds the expected outcome, the excess can be re-invested to improve the service or perhaps to approach new customers.

Finally, some interviewees mention the IT Governance structure, the common funding, of the Volvo Group as an additional source of funding. However, the resources allocated by IT Governance are only spent on projects that span the entire Volvo Group. It may very well be so that the projects will be managed and also financed by Volvo IT, however the projects themselves are more likely to consist of large updates of applications or infrastructure rather than new service development projects. (Volvo Group Intranet Violin, 2010F)

5.4.1 VOLVO GROUP ISSUE BOARD FUNDING

The purpose of the Group Issue Board structure is to make the most of the synergies that exist between the different companies in the Volvo Group and to drive the pace of changes throughout the group. The Group Executive Committee, GEC, is at the top of the GIB structure, chairing the different GIBs and deciding which representatives from BA/BU should participate in each board. There are nine different GIBs, e.g. GIB Finance and Strategy, GIB Legal, GIB Human Resources and GIB Technology. (Volvo Group Intranet Violin, 2010G)

Since the customers of Volvo IT are spread across the entire Volvo Group, a majority of the different GIBs could be relevant as a co-funder of a development project that would benefit a large part of the organisation. The PD SU would mainly turn to the GIB Technology with sub-councils addressing, among other things, various process technologies. The OtD SU on the other hand is related to the GIB Supply Chain etc. OtD works almost exclusively with customer-owned applications. Therefore, it is in fact more likely for OtD to turn to the GIB structure for funding rather than the Volvo R&D budget since it is to be spent on Volvo IT-owned services. Thus, the GIB structure constitutes a potential source of funding both for the development of ideas that can benefit several parts of the Volvo Group as well as ideas that might result in a customer-owned application.

There are no formalised selection criteria of the GIB structure. The boards will base their decisions on the overall strategy of the Volvo Group and a priority list compiled by the Group Executive Council.

5.4.2 BA/BU - CUSTOMER FUNDED DEVELOPMENT

Volvo IT strives to generalise IT solutions across the Volvo Group to reduce the overall cost of IT for all BA/BU. The R&D-budget of Volvo IT is not to be spent on developing customer-specific solutions that are unlikely to be generaliseable to appeal to other customers. Thus, when there is a need for such unique solutions, then the customer in question will have to bear the cost of the development project. However, it can be difficult to say with all certainty that a solution, under no circumstances, can be generalised. Therefore, there is also the possibility negotiate a sharing of the total development costs between the customer and Volvo IT.

The degree to which development projects are customer funded varies greatly among the different Solution Units. One Solution Unit that almost exclusively works with customer-owned applications is OtD. The StO unit on the other hand often launch projects that are 50-50 funded by the customer and Volvo IT respectively. If a potentially innovative idea surfaces within that unit, then one has to make an effort to sell the idea to the relevant customer. This can be done in a variety of ways, for instance by bringing in outside speakers, hosting workshops and other events to convey the value associated with the investment.

If the customer's resources are tied up, and there is no chance of getting funding from either the GIB-structure or the Volvo IT R&D funds then one has to wait for next year's budget. There is perhaps a possibility to try and convince the customer to re-prioritise its budget, but such efforts can be quite time-consuming. The basis on which the customers choose to allocate their IT budgets depends, among other things, on the unique strategic challenges of each customer.

When the customer is opposed to funding a development project it could be because the customer does not feel that the advantages of the system will outweigh the development costs. It is very difficult to prove the advantages of a new system without developing it, but since it cannot be developed without customer commitment the situations turns into something of catch-22. One solution to this problem has been to start the development as skunkworks and getting the customer buy-in later down the line. However, there is an impression that the number of skunkworks have declined over time.

5.4.3 THE VOLVO IT R&D BUDGET

The Service Development Council (SDC) is responsible for Volvo IT's R&D budget and decides on how to allocate the funds available for service development. The council is global and consists of representatives from throughout Volvo IT and has interfaces to all departments of the organisation. The council contains selected managers, members from Volvo IT top management team, the Executive Management Team (EMT), expertise from the line organisation and a coordinator from Market Development & Support. SDC is chaired by the executive vice president of Volvo IT. (Volvo Group Intranet Violin, 2010H)

As can be understood by its name, the council is in charge of the service development activities in Volvo IT and has the power to distribute R&D funding on service development activities and the responsibility to follow up on investments made. The SDC should apply a portfolio perspective on the services of Volvo IT and manage this portfolio in accordance with strategy. The council meets once every two months and reports directly to EMT. (Volvo Group Intranet Violin, 2010H)

The SDC has a sub-council, the R&D-team, which supports the SDC in finding and recommending promising areas for research and service development. The R&D-team meets every six weeks and consists of representatives from all parts of Volvo IT. (Volvo Group Intranet Violin, 2010I)

Apart from supporting SDC in the budget planning process, the R&D-team is also a forum for exchanging information on what development projects are being carried out throughout the Solution Units. The projects are presented in the shape of power point presentations including background, expected benefits etc. Included in the presentation is usually a version of the business case template of a service development project, which is also used when requesting funds from the SDC. However, in the case of the R&D-team presentations, depending on the characteristics of the project in question, detailed information on project financials are not always included. The template in question will be presented in detail later in this report.

5.4.3.1 COLLECTING BUDGET INPUT

In order to be able to make an estimate on how to spend the R&D funds for the coming year, the SDC sends out a request for budget input to the Solution Units. Each year, in the beginning of the fall, the Solution Units are asked for ideas on service development projects, including pre-studies, for Volvo IT to undertake the coming year. Each Solution Unit is then responsible for collecting ideas from the entire unit, i.e. from all of its Solution Areas. All Solution Units manages this assignment in their own way. One approach is to arrange workshop to brainstorm on ideas but there is also less formal ways to go about it, for instance, merely forwarding the request from SDC to the members of the units.

The rationale behind turning to the Solution Units for budget input is that they are in the centre of the organisation and interact with both CR&S as well as the production part of the organisation, AD and I&O. However, there is little to no formal interaction between the Solution Units and the production departments when it comes to collecting ideas for the R&D budget process.

In general, it is the Solution Office Manager of each Solution Unit that is responsible for coordinating the R&D budget activities within each Solution Unit respectively. He or she collects the ideas and, if necessary, asks for clarifications and elaboration on the ideas that surface. The SDC requests that the ideas are presented in the shape of a business case and each Solution Office Manager makes sure that there is enough information available to complete a template of such a business case.

Based on previous experiences, each Solution Unit has an estimate on the number of projects and amount of funding they might be able to get. If the number of ideas far exceeds the expected outcome of the budget process, each unit has to make a prioritisation on which ideas to put forward. There are no formalised criteria upon which this evaluation and prioritisation is based. The management team of each Solution Unit discusses the business potential of the ideas and its alignment with Volvo IT strategy.

Once each unit has compiled a list of ideas for new service development projects and pre-studies for the coming year, another prioritisation procedure starts. Representatives from all five Solution Units meet up in the R&D-team, which will be presented later to discuss all ideas and compile a joint list of suggestions for the Service Development Council. As with the previous prioritisation round, there are no formalised, written evaluation criteria in place for this process. Since the different Solution Units compete for the same budget resources, there are elements of tactical negotiation present in these sessions.

When the R&D-team has united on a proposition for an R&D budget it is presented to the Service Development Council. The SDC sets the budget based on the information provided in the

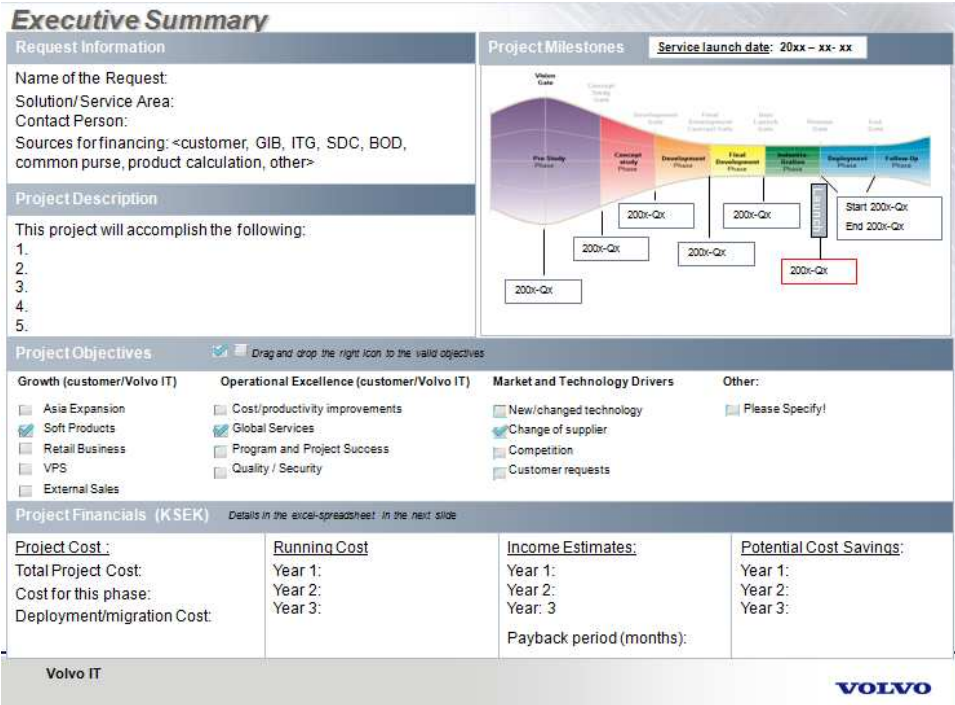
business case templates, the benefits of the projects and their associated costs. For the time being, when reviewing the business cases, short pay-back time is a top priority. The reason for this parameter taking precedence is the current economic recession, however there are those finding this a very limiting prerequisite for coming up with innovative services.

Although included in the budget, in order to get actual access to the funding, each development project has to approach SDC for an assessment later on. The SDC does not grant the entire funding of a project right from the start. Instead, based on the stage-gate model in place at Volvo IT, the projects are assessed by SDC on a regular basis and funds are then granted up to the next gate. There is some room for flexibility here, the SDC can choose to distribute funds for several gates in between each assessment. If a project does not pass through a gate, it does not mean that it will be shut-down, rather be forced to review the previous stage before being allowed to proceed. When presenting to the SDC one has a great deal to gain from being well prepared, although the presenter has some control over the agenda, the project will be thoroughly evaluated by the council.

Although the business case template is available to the entire organisation, there is in general little knowledge throughout the organisation on what the SDC is looking for in new development projects. Many employees have very little insight to the earliest stages of service development and what projects are being considered for further evaluation. However, at the same time this does not appear to be perceived as a problem, people are fairly sure that if they would ask or search for this type of information, it would be made available to them.

5.4.3.2 THE BUSINESS CASE TEMPLATE

The business case template (Volvo Group Intranet Violin, 2010J) used to evaluate and present ideas for service development project is divided into five areas, see Figure 14. The first area is the general request information followed by project description, objectives, financials and finally a mapping of the project milestones in relation to the ISGDP-4IT stage gate model used at Volvo IT.



FIGUR 14: SERVICE DEVELOPMENT BUSINESS CASE TEMPLATE

The request information and the project description, i.e. what will be accomplished, are to be typed in. The project objectives however, they are to be filled out through ticking boxes, classifying the objectives mainly based on different types of growth, operational excellence and market and technology drivers that are relevant for this particular request. The categories and their content do to some extent reflect areas of strategic importance for Volvo IT, e.g. the growth area soft products and the launch of global services as listed under operational excellence. The project financials required are project cost and running cost, income estimates and cost savings for the first three years. The expected pay-back time, in months, should also be included.

There are no weights included in the template, no guide as to which of the factors included that are of the greatest importance. Neither does it include any listed recommendations on what is considered to be acceptable or perhaps desirable levels of the different financial parameters. Interviews have revealed a desire for some type of parameter taking opportunity cost into consideration since that would enable a more fair assessment of development projects related to updates of existing services.

The evaluation criteria applied are quite focused on financial measurements, and interviews show that some perceive the process in itself to be at the centre of it all, instead of the ideas passing through it. The financial requirements push the development towards ideas that fit several different markets, customers and countries. However, there is a feeling that the desire to develop for all markets at once can leave the original customers feeling a bit disappointed over the end results.

5.4.3.3 REJECTED IDEAS

During the two prioritisation rounds, and the SDC review of the proposed budget, some ideas for development projects are bound to be rejected. There are few systematic approaches in place to secure some form of preservation of these ideas. It is not unheard of that rejected ideas are put forwards the consecutive year, but storing and remembering ideas is left to the discretion of each Solution Units and the individuals working there.

5.4.3.4 IDEAS OUTSIDE OF THE BUDGET PROCESS

There are different opinions on to what extent it is possible to fund development projects that surface once the service development budget is set. Some say that the actual allocation of funds is quite flexible, after all, the budget is simply a mere estimate of the development activities expected throughout the year. If a new project appears more promising than one that was included in the budget, one can, without considerable difficulty, replace the “old” project with the “new” one. It all becomes a matter of prioritisation. On the other hand, some express that ideas that surface outside the budget process are easily forgotten, especially since there is no structured way of storing and evaluating ideas outside the actual budget process.

5.4.3.5 PRE-STUDIES AND TWBI PROTOTYPES

Although the business case template used in the service development budget process requires a great deal of detailed information, there is still an opportunity to get funding for R&D projects that are perhaps not yet mature enough for a business case. The Solution Units are able to grant funding, up to 300 KSEK per project, for exploratory pre-studies, with the purpose of acquiring enough information to build a promising business cases later on. The pre-study funds have to be covered in the ordinary budget of the Solution Unit. Therefore, when making the requests for the service development projects of the coming year, the Solution Units also make an estimate on the amount they would like to spend on pre-studies. There is also a possibility that a planned project is cancelled, creating space in the Solution Unit budget to conduct another pre-study.

Another type of small exploratory projects is the prototypes managed by TWBI. The funding for these projects is granted by the R&D-team. When making the request, a member of the TWBI team presents the background and general idea of the prototype, what resources are required and the expected outcome of the prototype. There are no formal, written decision or evaluation criteria upon which the decisions of the R&D-team are based. The general practice is to make a judgment based on the potential value added by the project and to what extent the project is aligned with the service development strategy and overall strategy of Volvo IT.

5.4.3.6 OPINIONS ON THE VOLVO IT IDEA SELECTION PROCESSES

The overall idea management practices are perceived as quite Gothenburg centric today, since that is where the development funds are more or less allocated from. There are very few R&D initiatives that target the Asian markets and there is a perceived low priority given to ideas from the APAC region in the evaluation processes. Instead, ideas that surface near the Asian markets are generally developed as skunkworks at the local sites.

Some interviewees say that in order to grow in the Asia Pacific region, it is necessary for Volvo IT to devote resources to develop services that appeal to these markets. One cannot expect to export a European solution and expect it to work in a completely different setting. Gothenburg is not exposed enough to the market situation in Asia, apart from radical low-cost projects, the input from these, in relation to Gothenburg, remote markets are not prioritised.

The SDC is perceived to focus more on the development of new services rather than research in terms of more exploratory and uncertain research activities when distributing the R&D budget. This focus on development rather than research does not encourage overall creativity. Furthermore, there is too little R&D and service development carried out on the level of the customer, instead funds are spent on general services that can attract a broad spectra of customers.

At the same time, some are quite satisfied with the current practice with the R&D budget process and the regular assessments of SDC. There is an official and fairly transparent roadmap for the coming 6-12 months and a joint priority on what to work with.

Volvo IT employees have good customer insights and are creative which means that the main issue is getting the ideas to development projects. Customers become frustrated and wonder what happened to all the good ideas Volvo IT had about improving their business, and on the other end of the process, Volvo IT is waiting for a customer order before initialising service development.

Sometimes the greatest opportunities for improvements are hidden in the process which the IT-systems are designed to support. There is an attitude that innovation should not require any additional resources, but changing the perspective and devoting time and resources on the underlying processes rather than the technical solutions could be of great value. One tends to forget that innovations can come from new combinations of old systems and that innovation could be about saving money, not implementing new technical solutions.

5.4.4 SUMMARY

Volvo IT has a structured and defined stage-gate process for how to manage service development projects, but it is not very clear how ideas enter that process. The characteristics of the idea, its scope and stakeholders, will have an impact on which possible sources of funding that could come into play. There are three main sources of funding for the development of new and improved services in addition to informal available funds such as parts of the profit

generated by a certain service, which is supposed to be used for financing updates and improvements of that particular service.

On the Volvo Group level there is an IT budget which is partly divided among the different BA/BU. This source of funding is used for IT solutions specific to one organisation, in which cases Volvo IT's customer in question will have to bear the cost of the development project. The degree to which development projects are customer funded varies among the different Solution Units depending on their customers' history but can be up to almost 100%.

Another part of the total Volvo Group IT budget is devoted to group-spanning initiatives that will affect several BA/BU. These funds are managed by a number of Group Issue Board (GIB) all of which have a particular area of interest in mind. Since the customers of Volvo IT are spread across the entire Volvo Group, a majority of the different GIBs could be relevant as funders of development projects.

The last part of the total IT budget is Volvo IT's R&D budget, which is managed by the SDC. Each year the SUs are asked for ideas on service development projects, including pre-studies, for Volvo IT to undertake the coming year in this budget. How to manage this assignment is up to the various units and some arrange brainstorming workshops while others merely forward the request from SDC to the members of the units.

There are different opinions on to what extent it is possible to fund development projects that surface once the service development budget is set. Some perceive the process as flexible while some think that ideas for projects arising throughout the year have to wait to the next budget is set.

Although included in Volvo IT's yearly R&D budget, in order to actually get funding for a development project it has to be assessed in more detail by SDC. The SDC does not grant the entire funding of a project right from the start but rather up to the next relevant gate according to the used stage-gate model. The business case template used to evaluate and present ideas for service development projects include project description, objectives, financials and finally a mapping of the project milestones. There are no weights or other guidance as to which of the factors are of greatest importance but in general the applied evaluation criteria are quite focused on financial measurements.

Although the business case template used in the service development budget process requires a great deal of detailed information, there are opportunities to get funding for R&D projects that are not yet mature enough for a business case. The SUs are able to grant funding for exploratory pre-studies with the purpose of acquiring enough information to be able to build a business case later on. Another type of small exploratory projects is the prototypes driven by TWBI.

5.5 INNOVATION AND IDEA MANAGEMENT AT VOLVO TECHNOLOGY

Volvo Technology is a tenth the size of Volvo IT and have a different purpose in the Volvo Group but is still relevant as a source of inspiration. Since Volvo Technology is the assigned innovation leader in the Volvo Group they are working actively with innovation and have an innovation manager. The innovation manager has appointed a number of innovation coaches to aid him in the work to create an open atmosphere with different fora where employees can freely discuss relevant topics.

At Volvo Technology idea management and innovation is driven through regular innovation jams called VTEC LIVE. Ideas are not really collected between these events since they do not have the resources to take care of and develop ideas that surface between events. Therefore,

these events serve as the main channel for idea generation, collection and selection of innovative ideas. One benefit of having these time limited events is that there is a set plan for evaluation, project launch, etc. which creates transparency.

5.5.1 INNOVATION COACHES

In Volvo Technology each department has an innovation coach that promotes an innovative culture and works with idea management. This is a part-time assignment that takes about 20% of the coaches' work week.

If someone in the organisation comes up with an idea and do not know what to make of it, he or she can turn to an innovation coach for help. The innovation coach can then council the ideator regarding where he or she can turn with the idea, if there is a relevant innovation jam coming up, or if there are apparent patent possibilities, etc. If the ideator does not want to further pursue the idea, the innovation coach can also do it instead.

The innovation coaches also conduct innovativeness measurements on their departments. These measurements concern the ten identified Volvo Group challenges and are used as discussion material around these challenges. The tool tests how good the department is at each challenge and how important people generally think the various challenges are.

The innovation coaches were selected by the innovation manager to ensure that they have the right mindset for the task. Since the selected individuals already had relevant experience and the mindset, there was no immediate need for any innovation coach training. But even though the current innovation coaches have not gotten any training there is a possibility that there will be some training for new innovation coaches (replacing individuals that have quit for some reason) to support them in the coaching activities. To share experiences and good ideas, and align the efforts the innovation coaches meet every week, which also helps them improve in their work.

5.5.2 INNOVATION JAMS / VTEC LIVE

For innovations to arise it is important with an open climate where ideas are shared, and combining different competences and perspectives. This is achieved in innovation jams. At Volvo Technology innovation jams are performed a few times every year and it is the main way of driving innovation. The events draws a lot of inspiration from IBM's InnovationJam but since IBM had trademark protected that name Volvo Technology chose to call their event VTEC LIVE as an abbreviation for Volvo Technology Leading Innovation in a Virtual Environment.

VTEC LIVE events are concentrated two day online events that are arranged about three times a year. There is always a specific theme of the event, as an example the very first event had soft offer as theme. The themes are chosen based on the current strategic challenges. Before each event inspiration material, like articles, short videos, presentations, etc., is posted around the theme to generate thoughts and ideas.

All Volvo Technology employees are invited to the events, and recently a limited number of other Volvo Group employees have also been invited to participate. Participation is voluntarily and employees are not given any free time to attend the events but have to find the time themselves during the workday, or afterwards. For the first VTEC LIVE about half of all Volvo Technology employees entered the event at some point and of them a third actually participated by posting something. In the future it is possible that a wider audience will be invited to the events but then other issues such as intellectual property rights need to be addressed on beforehand.

The events are held online on a rather simple webpage that all Volvo Technology employees recognise from the so-called Teamplaces on their intranet. The innovation manager says that physical, live innovation jams could be constructive as well, but emphasises the global aspects of online events. It was a conscious choice to use a modified Teamplace as the IT solution since all participants were already acquainted with it and knew how to navigate in it.

During the two days of the actual event, a lot of ideas are posted and commented on by others in different categories related to the main theme. After the two days it is not possible to post any ideas or comments but ideas that are not fully explained can still need some clarification. Therefore ideators are often asked to write a couple of pages to explain their ideas in more detail before the selection process is started.

There is an assigned budget for implementing good ideas that surface during VTEC LIVE events. Ideas are selected for development projects based on innovation height, business potential, and feasibility. There is also a portfolio management perspective in the selection in the sense that they seek a mixture of project lengths, technology focus, and business focus in the chosen ideas. A number of experts are brought in to comment and rate the ideas in selection process. Idea selection takes a significant amount of time and resources since VTEC LIVE generates 150-200 ideas per event of which 10-15 ideas are chosen.

All ideators get feedback, which is especially important for rejected ideas, through the innovation coaches. The innovation coaches are also involved in the development projects for the selected ideas by being a soundboard for the project leader.

One of the incentives to participate is the possibility given to ideators to be involved in the implementation of their idea if it has been selected for development. For about half of the development projects, the ideator is part of the project team. Another incitement for ideators with selected ideas is the roadshow where developed ideas are showcased for all Volvo Technology employees. Apart from giving the ideators some public recognition, the roadshow is also a continuation of the discussion around some of the ideas.

During the first VTEC LIVE most contributors posted one or two ideas or comments but there were 18 employees that contributed with five or more postings. Out of these 18 employees nine were assigned, hand-picked moderators of the event but the remaining nine were not assigned any specific role prior to the event.

5.5.3 SUMMARY

Volvo Technology is actively working with innovation and is relevant for this study as a source of inspiration for the improvement suggestions. At Volvo Technology idea management and innovation is driven through regular innovation jams called VTEC LIVE and innovation coaches.

VTEC LIVE events are themed, concentrated 2 day online events that are arranged a few times every year. The themes are chosen based on current strategic challenges and inspiration material is posted before each event. All of Volvo Technology employees are invited to the events and an incentive to participate is the possibility given to ideators to be involved in the implementation of their idea if it has been selected for development.

In Volvo Technology each department has an innovation coach that promotes an innovative culture and works with idea management. These people were selected by the innovation manager to ensure that they have the right mindset for the task. Among other things innovation coaches can council ideators regarding where to turn with an idea that is not generated during one of the events.

6 ANALYSIS

The overall structure of the analysis chapter is recognisable from the structure of the analytical framework and the empirical results chapter. The first part analyses current and untapped sources of ideas. The ensuing section analyses the manner in which the current mode of operations of Volvo IT stimulates idea generation and how this could be improved. Thereafter, the present and potential idea collection practices will be analysed followed by the last section containing the analysis of the current idea selection processes.

Volvo IT has a rather centralised approach to innovation and idea management with joint R&D efforts and resources for the entire organisation. Centralising R&D enables consistency of the development efforts but at the same time different sites are not able to develop solutions that fit their specific customers. In order to get the benefits of centralised technology development but still obtain local market and customer insight, Volvo IT employs a transnational strategy to innovation and idea management. Such a strategy is based on local sources of market insight supported by a global R&D organisation. The local divisions must be well integrated and accept that they depend on each other for success and the empirical results show that this integration can be improved at Volvo IT.

Another organisational challenge when managing ideas and innovation is that getting both incremental and radical innovation to thrive in one and the same organisation is quite difficult. Volvo IT manages this challenge by letting the TWBI unit manage the more radical ideas while the company-wide processes in place for generating, collecting and evaluating ideas favour incremental ideas over the more radical ones.

6.1 SOURCES OF IDEAS AT VOLVO IT

Volvo IT taps into a variety of sources for ideas, both functional and circumstantial ones. The most widely used functional sources of ideas are, in the external value chain, the Volvo Group customers and, in the internal value chain, the Solution Units in combination with TWBI.

The TWBI group can be seen as consisting of a set of boundary spanners since they spend considerable time bringing information and ideas from circumstantial and functional sources into the organisation. However, there are other boundary spanners as well as functional and circumstantial sources that could be better utilised, e.g. external customers, other departments, suppliers and competitors.

It is difficult to suggest ways to better tap into circumstantial sources of ideas since one never knows where such sources will spring from. However, one could assume that by increasing the basis of functional sources, one will also be exposed to a greater variety of sources for circumstantial innovation.

6.1.1 VOLVO GROUP AND EXTERNAL CUSTOMERS

The frequent formal and informal interaction makes the Volvo Group customers important and influential sources of inspiration. The close contact with these customers increases the change of picking up on circumstantial sources of innovation in the customers' business environment.

The external customers on the other hand, could perhaps be described as an under-utilised source of ideas. Although Volvo IT strategy is to not develop services specifically for external customers, all members of the external value chain possess information and knowledge that

could be valuable and bring inspiration for ideas. In the case of the external customers, looking at other IT services that they use apart from those provided by Volvo IT could give hints on new potential business areas for Volvo IT to move into. The external customers could also be a path to discovering new competitors for benchmarking purposes as well as lead to new circumstantial sources of ideas. The practices in place for interaction with the Volvo Group customers can be used as inspiration for increasing the flow of information from the external customers as well.

6.1.2 SUPPLIERS AND COMPETITORS

Competitors and suppliers of all sorts appear to be the source in the external value chain that Volvo IT interacts with the least. Granted, Volvo IT has a good relationship with, for instance, suppliers like Microsoft, but the overall impression is that there is more to learn from competitors and suppliers. Especially so since Volvo IT is not so much focused on the actual, from scratch development of software but rather on the combination and modification of existing programs. For an IT company that mainly sources its software from external suppliers, searching for ideas from all parties of the external value chain is likely to result in new ideas adding value to the customers.

6.1.3 INTERNAL DEPARTMENTS AND GEOGRAPHICAL SITES

Moving to the functional sources in the internal value chain of Volvo IT, the most important sources are the Solution Units and the TWBI team. These parts of the organisation do interact with the other three departments as well, but part of their work description is in fact to generate ideas for new services.

Both the Solution Units and the TWBI team are geographically concentrated to the European sites of Volvo IT. Although the TWBI gather impressions from the global Tech Watch Network, there is still a risk of too little exposure to circumstantial sources of innovation from other parts of the world. This also limits the ability for the TWBI and the Solution Units to span the boundaries of different sites. In the case of a future expansion of the TWBI, it is worth considering locating an additional member in one of the sites far from Europe, e.g. in India, Brazil or China.

The Solution Units and TWBI may span some of the boundaries inside and, also to some extent, outside of Volvo IT. By being a part of VITIC TWBI also get input from Volvo IT employees and external actors located there. However, departments such as AD and I&O also span boundaries in their contact with suppliers and still they are not used as sources of ideas to any larger extent. Thus, finding more ways to tap into the ideas of AD and I&O will indirectly increase the involvement of suppliers and, to some extent, competitors as well.

6.2 IDEA GENERATION AT VOLVO IT

The corporate culture and creative climate is perhaps the most important factor for idea generation at Volvo IT but the amount of cross-functional and external interaction, and communication and support from top management are also highly influential aspects.

6.2.1 CORPORATE CULTURE AND THE CREATIVE CLIMATE

Volvo IT is actively working on, and has allocated resources to, creating a culture that supports the strategic goals including innovation. Perhaps because of this the organisation has an open

atmosphere where people are not afraid to speak their mind. The work done by the culture manager on shaping the culture to have a low level of fear and be accepting of mistakes also contributes to the innovativeness of the firm.

The high amount of open, informal communication creates a good breeding ground for ideas, especially when this happens in cross-functional channels. This could however be further improved by formal knowledge sharing forums where people from different functions could interact even more around topics they have chosen themselves. If such formal forums are to be beneficial they need to be frequently used though since otherwise no one will even bother checking them.

The three factors that determine the level of creativity were identified as knowledge, intrinsic task motivation, and creative-thinking skills. Volvo IT personnel are knowledgeable in their fields of work but a knowledge sharing initiative, e.g. in the form of an online forum, could however further improve the expertise.

The present level of intrinsic task motivation vary within the organisation since individuals are more or less inclined to find some time to investigate own ideas or search for new information. Appropriate rewards is one way of increasing task motivation. Even though new ideas often are appreciated there are no formal rewards for innovation in place. Implementing an innovation award would benefit the creative climate in the sense that it shows that the organisation values new ideas. The aim of a reward is to inspire creativity by enhancing intrinsic motivation and to do that the reward should not be monetary but could for instance be the possibility to participate in a conference or public recognition from top management. Informational rewards such as participation in seminars and trainings have the additional benefit of increasing knowledge, which also improves creativity.

Volvo IT employees have not gotten any training in creative problem solving or similar topics but some of them report that they learn such skills in their everyday work in projects. Even so, to further improve creativity in Volvo IT, employees could be offered training sessions in creative thinking. Such training could also be included in idea collection tools or methods if possible.

One success factor for innovation is to allocate time and resources for it. This has not been done generally in Volvo IT and a lot of employees would like to have more time for thinking about how their work processes could be improved or investigating own ideas before taking them further. Considering top management's view that innovation should be an integrated part of employee's everyday work and not incur additional costs, formally allocated time for innovation is not likely to be widespread practice in Volvo IT in the near future. The creation of the Solution Units did however mean that departments, with time and resources, became responsible for investigating and implementing new ideas.

The new organisation is more global and centralised than the previous structure which means more collaboration between sites but also a stronger Gothenburg focus. Increased collaboration between sites has many advantages such as increased synergies and learning within the organisation. The centralisation of the power means that decisions that were previously taken at sites around the world are now taken at the headquarter site Gothenburg. An example of this is the R&D budget that is now centrally kept while before many sites had some own budget for investigating and implementing ideas. For individuals at other sites this has decreased their motivation for being creative since they do not know what to make of their ideas or feel that decision makers do not understand their situation and discriminates against their ideas. Since Volvo IT want to get ideas from the whole organisation, and not just one site, the firm need to open up the processes for collecting ideas from all sites, and perhaps also specifically allocating some of the R&D budget to e.g. services targeting the Asian market.

In the same way that the culture ambassadors spread the wanted culture throughout the organisation, innovation ambassadors could be used to promote innovation in all departments and sites. Through dialogues, local initiatives, and spreading global initiatives they could promote an innovative mindset. Similar to Volvo Technology's innovation coaches, these individuals could also help ideators promote their ideas when they cannot do it themselves. In this way they could decrease the geographical gap between Gothenburg and other sites.

6.2.2 CROSS-FUNCTIONAL AND EXTERNAL INTERACTION

Diversity is a pre-requisite for innovation and there is a lot of cross-functional and external interaction in Volvo IT even though it varies somewhat between departments. The main part of this contact occurs within projects or technical areas of work.

It is not certain that increasing the communication between different departments, and with external actors, would significantly increase innovativeness, either way it would take considerable time. Even though individual network connectivity increases the quality of ideas an increased amount of external connection for a group above a certain level will not lead to better ideas. Therefore Volvo IT would benefit more from making sure individuals are able to get in contact cross-functionally as well as externally instead of promoting even more cross-functional interaction between groups.

Volvo IT employees ask for more information regarding what is currently being developed and others are working on etc. By readily providing this information, e.g. on the intranet, individuals are given more possibilities to collaborate and getting better connected.

Interaction with external actors for Volvo IT mainly includes customers within the Volvo Group and to some extent suppliers. Volvo IT has very close contact with customers and good insights to their situation and challenges. Therefore a lot of ideas for new customer offers are directly derived from observing a customer need. This applies to the majority of the customers that are part of the Volvo Group, the contact with the increasing number of external customers is not as close.

6.2.3 TOP MANAGEMENT SUPPORT AND COMMUNICATION

The communication around the strategic objectives is very satisfactory in the sense that all employees are aware of the goals, but also just as unsatisfactory since practically no one knows exactly what they mean. There are many different interpretations of the strategic objective on innovation and a lot of them include the notion that innovation is for other departments or groups and not for the individual in question. Volvo IT employees often point to the company's innovative efforts in TWBI and see that group as a sign of top management's commitment to innovation. This is positive but implies that innovation is not everyone's responsibility but rather an appointed group's work. If top management want the whole organisation to experience a creative climate and come up with innovations they need to communicate this more clearly.

The main message communicated by top management is the need for cost efficiency. This is reasonable at this point in time because of the recent economic downturn but they need to consider if it is still their first priority now and in the near future. Innovations are much more likely to arise within areas communicated as most important which means that with the current messages put through cost saving ideas are more likely to arise than e.g. ideas for an improved customer offer.

Top management also seem to be of the idea that innovation does not need to cost anything but can be integrated into everyday activities. This is more easily said than done and research has shown that to be innovative some resources generally need to be allocated to accomplish that. Since people throughout Volvo IT are not even sure what innovation in Volvo IT means they have to be given the pre-requisites to be able to becoming more innovative. This could be done by implementing an idea management system, offering creative-thinking training, reward innovative behaviour, and start talking about what kinds of innovations Volvo IT wants to nurture.

The most important issue for top management is to figure out what the purpose of having innovation as a strategic objective, and communicate that to the rest of the organisation. At the moment it does not seem clear why this is one of the strategic goals of the company and what kinds of ideas they are looking for. By giving examples of desired ideas, top management can clarify what is expected from Volvo IT employees in terms of innovation and thereby also make it much easier to live up to those expectations.

6.3 IDEA COLLECTION AT VOLVO IT

Ideas are currently collected through personal networks at Volvo IT. There are some advantages of this approach since the ideator can often get some immediate response and informal appreciation for his or her ideas. Knowing who the receiver of an idea is and getting some fast feedback is definitively more motivating than, for instance, submitting ideas into an idea box that is like a black hole. The line manager, AM, or SU contact can also provide continuous feedback on where in the evaluation process the idea is. There is however some drawbacks of this approach related to the fact that it is very person and contingency dependent.

The implications of relying on personal networks for collecting ideas in a company include discriminating against ideas of individuals with limited personal connections, and not having fact-based first screening. In this system, individuals with large internal personal networks are more likely to be able to successfully promote their ideas since they will know whom to talk to about what kind of idea. It is also easier for them to build the necessary support for an idea to be considered for implementation. When an idea is brought to another person (instead of e.g. a system) that person becomes a gatekeeper and will only further promote the idea if he or she thinks that it is valuable. In a lot of cases that person can be in a good position to evaluate the idea and decide its value but that is not at all certain.

In addition to idea collection through personal contacts there are some local or departmental idea collection initiatives with different levels of reported effectiveness. The success of *Keep the dialogue going* can be explained by the strong support from top management, clear topic to be innovative around, and the sense of urgency that all employees felt due to the imminent lay-offs. The Swedish suggestion box was very visible and an indication of the importance of continuous improvement ideas even though it caused annoyance by perceived unfair individual, monetary rewards. Even so, it was a way for ideators without plenty personal connection to get heard. Other systems, in which ideas are collected, such as the CRM system, have mostly been complements to ordinary ways of promoting new ideas and not sufficient idea collection approaches in themselves.

Combining different idea collection approaches is expected to yield superior results, hence Volvo IT should try to find and implement an apposite mix of idea collection methods. That combination of approaches can build on what is currently done and draw inspiration from past initiatives in addition to implementing new tools and methods.

6.3.1 INNOVATION AMBASSADORS

Innovation ambassadors have already been discussed as a way to increase the creative climate and spread an innovative mindset in all departments and sites. They could also be used to collect ideas thereby giving individuals throughout the organisation without large personal networks, better possibilities to promote their ideas within the current practices.

A lot of people prefer to give their ideas face-to-face to a person rather than submitting them in a system. Even though it might not always be possible to personally meet an innovation coach, by sending it to a specific innovation coach the ideator knows who the recipient of the idea is. Innovation ambassadors could be effective idea collection interfaces for ideators that have troubles filling out necessary data in an idea management system.

6.3.2 OBSERVE OR INVOLVE CUSTOMERS

Some of the most innovative companies observe customers rather than just asking them about their needs. Volvo IT work in close collaboration with customers and many employees are actually located at customers' offices. This combined with the fact that a lot of Volvo IT employees previously worked for their customers, means that they have excellent possibilities of gaining deep customer understanding and identifying customer needs that have not even been uttered.

Through workshops and other meetings where Volvo IT employees and customers are present, customer needs and business opportunities are also identified by customer involvement. This is not done to the same extent for customers outside the Volvo Group though. Since that more external business is expected to grow in the upcoming years more formal ways of gathering ideas from those customers as well could be beneficial for Volvo IT.

6.3.3 IDEA MANAGEMENT SYSTEM

A more structured idea collection method that Volvo IT could implement is an idea management system. Such a system could reap the previous benefits of having the suggestion box, avoid some of the drawbacks by careful design, and add some features that make the system even more inspiring for ideators.

The suggestion box offered an alternative way for ideas that was problematic to bring up through the ordinary idea collection and selection processes and even a very basic idea management system will do that if properly maintained. The old suggestion box was also very visible which showed that ideas were appreciated and ensured that all employees knew where to turn if they had an idea. By sufficiently promoting a new idea management system and rewarding all submitted ideas with visible tokens of appreciation, such as mugs or nice ID-card holders, this could be achieved as well.

One of the identified issues with the suggestion box was the rewards connected to it. Instead of offering ideators the possibility of large monetary rewards that can lead to idea hoarding, competition, and feeling of injustice, they should be encouraged to share ideas in a way that increases intrinsic motivation. Small and frequent rewards, e.g. a small amount given for each submitted idea, is one way of showing appreciation for innovative behaviour but not creating competition. Some research has also shown that varying the rewards given over time can induce idea submission. It should also be noted that monetary rewards are not at all needed and Volvo IT would probably benefit the most from not offering any at all. Instead the possibility of having

own ideas implemented, public recognition, and the feeling of contributing to the success of the organisation should be encouragement enough for submitting ideas.

Another aspect that influences whether ideas will be submitted is the information regarding what happens to submitted ideas. Ideators will not feel motivated to submit their ideas in a system in which they do not have any idea what will happen to them and if they will get a reply. But if the idea management system is connected to a clear process for idea evaluation, and possibly implementation, more ideas will be submitted.

Just like the previous suggestion box, an idea management system will require considerable resources for idea assessment and feedback. It is essential for a well-functioning system that ideas are frequently assessed so ideators can get fast feedback. This evaluation also has to be qualitative enough to be able to give appreciative, constructive feedback to the ideators. Even though an idea is rejected the ideator should not feel like he or she has failed but rather like submitting the next idea thought of.

One of the main benefits of having an idea management system, than just an idea box or database, is the possibilities for openly sharing and building on others' ideas. The more perspectives given on an idea and competencies applied to the concept, the better quality it is likely to have. Also, seeing ideas that others have submitted can inspire the generation of new ideas. Therefore, Volvo IT should aim for a system having this functionality when designing an IT tool for idea collection.

Having an open idea management system where the whole organisation can view submitted ideas could discourage some individuals to post ideas that might face opposition or that are not appreciated for other reasons. Hence, the question whether it should be possible to be anonymous as an ideator needs to be addressed. Making all ideators anonymous in the open forum would remove one of the incentives for submission in the first place, public recognition, and is therefore not recommended. But since clarification could still be asked for the idea in the open forum ideators could be given the opportunity to be anonymous if they really wanted to.

Ease of use is, in addition to visibility, a vital factor for usage of an idea management system. Therefore the technical solution chosen for this needs to be really easy to use and preferable something that employees recognise and already know how to navigate. To not complicate idea submission ideators should also be able to submit any kinds of ideas at one interface and not have to figure out on beforehand what type of idea the one at hand is and where to turn with that specific one. The original suggestion box, that is planned to be re-launched in a new format, was mainly focused on operational improvement suggestions and not ideas for new customer offers. To make being innovative and sharing ideas really simple, one system should be used for all ideas including those related to operational excellence, radical innovations, and idea for improved customer offers.

6.3.4 INNOVATION JAM EVENTS

In order to have more focused efforts for generating and collecting ideas within given topics, Volvo IT could host events in the shape of large brainstorming sessions so called innovation jams. Depending on the topic customers or other external actors could be invited along with all of Volvo IT's employees. This kind of event could be done in addition to having an idea management system as a backbone for the innovation processes. Inspiration for innovation jams comes from the first *Keep the dialogue going* (KTDG) and VTEC LIVE.

Both KTDG and VTEC LIVE are considered successful and are essentially time limited, online discussion forums for topics decided upon on beforehand. VTEC LIVE is an intense two day

event with inspirational material posted on beforehand and moderators guiding the discussions around ideas. KTDG went on for a longer period and was designed as a direct challenge from, and dialogue with, the CEO.

By inviting the whole organisation to brainstorm ideas around a given topic, and possibly some subtopics, creativity will be focused and more ideas within the wanted subject will be generated and collected. By inviting all employees, participant diversity can be achieved which is positive for creativity and increasing the quality of collected ideas. To get large parts of the organisation to discuss the ideas around the topic will also promote knowledge sharing that can spark innovation later on, after the event as well.

For people to be ready to share their ideas and knowledge a corporate culture supportive of that is needed but this is something that Volvo IT probably already has considering the open atmosphere in the firm. However, the knowledge sharing could be a bit problematic if external actors such as customers are invited. Even within the Volvo Group there might be hesitation regarding openly sharing knowledge and even more so for actors outside the corporate group. On top of the cultural aspects there would also be intellectual property right issues connected to involving external actors in a brainstorming event.

Having the event online and open day and night will allow employees located at sites around the world the same possibilities for participating. Neither for VTEC LIVE, nor for KTDG have employees been given any time off to participate, which meant that everyday work could have prevented some individuals from partaking. However, this is more problematic for shorter events since one can expect employees to be able to find some time for participating during a week.

In the design of an innovation jam, Volvo IT could reuse some ideas that proved to be successful in KTDG including strong support from top management, direct communication from top management to individuals throughout the organisation, and a perceived sense of urgency. The CEO promoted KTDG a lot in various communication channels thereby raised an awareness of its existence and importance. KTDG also gave employees a possibility to cut across ordinary ways of communication and directly discuss the issue at hand with top management and others in the organisation. A perceived sense of urgency has been proven to be a factor that can motivate participation and in KTDG it was naturally there but it could be created for an innovation jam as well through the communication around the event.

Some of the success factors for VTEC LIVE are related to the time limit and include fast feedback and a transparent process for evaluating and selecting ideas. Getting quick feedback, knowing how the idea will be assessed, and that there is a good chance of seeing it implemented can encourage participation. However, considerable resources are however needed to rapidly assess all posted ideas.

For VTEC LIVE events resources are also needed for the implementation of some ideas and the moderations of discussions, but Volvo Technology definitely consider it worthwhile since they frequently run these events. Some resources were also needed for running KTDG in the form of the communication function that ensured that each idea got some response and that ideas were grouped and sent to the relevant units at the end. To be able to run an innovation jam well and to fully reap the benefits, some dedicated resources are needed. For an innovation jam in Volvo IT, to get the discussion going and keep up a good level of activity moderators might be needed and topic experts will be needed in the idea assessment process after the event.

6.3.5 EVENTS FOR INNOVATORS

There are individuals in all organisations that are more innovative than others. They are usually more socially connected with people inside and outside of the organisation and like to discuss ideas. They possess good amounts of the three factors for creativity; knowledge in their field of work, creative-thinking skills, and intrinsic task motivation which means that they have the necessary expertise and think innovation is fun. Volvo Technology noticed that during their VTEC LIVE events a few individuals were especially active in the discussions and posted more ideas and comments than others. If Volvo IT would start an idea management system or run innovation jams, these types of people will be among the most active participants. One way to reward this behaviour is to exclusively invite these individuals to specific innovation events.

The benefits of singling out, conducting specific innovation events, and communicating publicly around them are many. First it is a way of recognising and rewarding their contribution that will hopefully inspire even more innovative behaviour from their part. Secondly, it sends a signal to the rest of the organisation that innovation is valued. Thirdly, with a lot of knowledgeable, creative people at targeted innovation events some very interesting ideas can be expected to surface.

6.4 IDEA SELECTION AT VOLVO IT

The idea selection process in Volvo IT revolves around several sources of funding, all of which have different purposes and allocating councils. The empirical results show that, despite their formal different purposes, it is not always evident which council to turn to for funding. Members of the organisation list different potential sources, or combinations of sources, for one and the same project.

These types of complex structures with potential overlaps are not uncommon in a global matrix organisation such as Volvo IT. Moreover, Volvo IT is an integrated part of the giant matrix organisation of the Volvo Group. To some extent, the matrix organisation enables flexibility and shortens daily decision making by allocating power to project managers, but this can in turn result in power struggles and fights for resources.

GS SU and Global I&O have managed the challenge of the matrix structure and the multiple sources of funding by introducing the PSP process, coordinating the development efforts that concern several different parts of the organisation. This approach might be difficult to implement in other parts of the organisation due to the different characteristics of each Solution Unit. However, a clearer description on who funds what and why could increase the transparency of these processes which in the long run could perhaps make the overall idea selection more efficient.

6.4.1 THE FRONT END OF INNOVATION AT VOLVO IT

The early stages of service development at Volvo IT is characterised by a dominant managerial logic focusing on reducing the costs of both Volvo IT and its customers, in part by searching for commonalities and incremental innovations. Therefore, high risk ideas or unrelated ideas that could lead to radical innovation are unlikely to be perceived as having a high potential.

Applying the conceptualisation of highways, alleys and by-lanes to the fuzzy front end of innovation at Volvo IT, it becomes rather evident that there are three highways leading to

different sources of funding respectively; the GIB-structure, BA/BU funding and finally Volvo IT's R&D budget managed by SDC.

The highways are quite broad, especially the one leading to the R&D budget since it includes both the SDC and the R&D-team, leading up to not only the new service development projects, but also TWBI prototypes and SU pre-studies. The highways are approved by management and tend to be closed-off for more radical ideas. One might then say that since the TWBI prototypes focus on ideas with a somewhat more radical approach, they belong in an alley or by-lane. However, the prototype approach is indeed approved by management and requests funding from the R&D-team, which is inevitably a part of the highway since it is so closely connected to the R&D budget and the SDC.

One potentially problematic rule of the road is the need for proven customer commitment to proceed with projects that require at least some part customer funding. This rule might push ideas of the highway to temporary skunkworks which later on, when the customer is convinced, returns to the highway. Alleys and by-lanes also contain other types of skunkworks in terms of occasional development activities funded by the excess profits of a service.

The empirical material indicates that skunkworks are not uncommon at geographical sites far from Gothenburg since gate-controllers favour ideas targeting several markets as opposed to those with a limited, from a geographical point of view, customer base. The gate-controllers can be convinced or circumvented if one possesses the necessary personal connections, which discriminates against less connected individuals at remote sites.

Changing the perception of the idea selection processes from Gothenburg centric to global will require opening up new entrances to the highways and making the decision processes more transparent. The highway Volvo IT is likely to be able to impact the most is the R&D budget process.

6.4.2 THE VOLVO IT R&D BUDGET SCREENING PROCESS

There are different opinions among Volvo IT employees on whether or not it is possible to get funding for ideas that surface outside the R&D budget process. However, if that is possible, then it implies that the process includes elements of a portfolio perspective since the SDC is able to reallocate resources if more promising projects appear.

The idea screening process of the R&D budget is to some extent divided into two different stages with different evaluation criteria, as advised in the theoretical framework. One part of the R&D budget is spent on the Solution Unit pre-studies where ideas associated with a higher degree of uncertainty can undergo initial evaluation to gather information for a future business case. Thereafter, the business case template is used to determine whether or not the idea has enough potential to become a development project.

There are no formal criteria applied when selecting ideas for pre-studies. Given the complexity of idea screening processes the decision making can be simplified, and the risk of subjective decisions reduced, by designing a short checklist with evaluation criteria to follow. In the earliest stages of idea evaluation, the focus should be on determining the market potential and customer fit of the idea. Criteria to include in the checklist could be complexity, feasibility, potential, and compatibility, perhaps with appropriate weights.

6.4.2.1 THE BUSINESS CASE TEMPLATE

For the second stage of the idea screening process however, there is a business case template in place to guide and facilitate the decision making. It includes generic, company, and industry specific criteria such as resources, project cost, competition, and feasibility. The current design of the business case template favours ideas with short-term profitability with a time horizon of three years and an expected payback period of months. This is not surprising given the current economic recession, however, firms get what they measure. An emphasis on financial measurements, especially not short-term profitability, will discriminate against more radical ideas.

Furthermore, the business case template does not provide any means to prioritise or resolve potential trade-off issues. Should income have priority over cost savings? Can strategic fit compensate for lower short-term profitability? Adding weights or some sort of guide on how to prioritise among the different criteria could greatly facilitate these decisions and increase the predictability and transparency of the process, thereby reducing the impact of politics and individual preferences.

6.4.2.2 POLITICS AND THE IMPACT OF INDIVIDUALS

Idea evaluation processes are affected by organisational politics and the behaviour of the individuals involved in, or surrounding the process. If Volvo IT strive to document a clear and transparent idea evaluation process with public evaluation criteria that will not only reduce the risk of the process being perceived as biased or unfair by the organisation. It will also reduce the to some extent arbitrary impact of politically influential individuals such as gate-keepers and sponsors in the organisation.

Involving employees with the qualities of champions, innovators, ruminators or skilled pre-study leaders could increase the chance of making the most of all ideas that pass through the evaluation process. These individuals could be identified by looking at past successful ideas and development projects and search for common denominators in terms of the people involved.

6.5 SUMMARY AND ANALYSIS OF THE OVERALL SITUATION

Innovation is one of Volvo IT's strategic objectives but if top management want the whole organisation to generate ideas for innovations they need to communicate this more clearly. At the moment it does not seem clear exactly why innovation is a strategic goal and what kinds of ideas they are looking for. By, for instance, giving examples of desired ideas Volvo IT employees would have a better chance to know what is expected from them and also live up to those expectations.

The current messages communicated by top management mainly focus on cost savings which means that ideas regarding that are more likely to arise than for instance ideas for improved customer offers. As a result, the early stages of service development at Volvo IT is characterised by a dominant managerial logic focusing on reducing the costs of both Volvo IT and its customers, in part by searching for commonalities and incremental innovation. Therefore, high risk ideas or unrelated ideas that could lead to radical innovation are unlikely to be perceived as interesting.

Ideas are currently collected through personal networks at Volvo IT, which is positive in terms of good possibilities for some immediate response and informal appreciation of the ideator. There are other implications of this approach though, including discrimination against ideas from individuals with limited personal connections, and not having a fact-based first screening.

In the internal value chain the most widely used functional sources of ideas are the Solution Units in combination with the TWBI group, which all embody well-connected individuals. They both, but TWBI in particular, can be seen as consisting of boundary spanners since employees in the units bring information and ideas from both circumstantial and functional sources into the organisation.

In the external value chain Volvo Group customers make up the most widely used functional source of ideas. The close contact with these organisations provides excellent possibilities for picking up on circumstantial sources of innovation in their business environment. The external customers on the other hand, are more of an under-utilised source of ideas even though competitors and suppliers seem to be the source in the external value chain that Volvo IT interacts with the least.

The new organisation is more global and centralised than the previous structure which means more collaboration between sites but also a stronger Gothenburg focus. This is further supported by the fact that the identified primary sources of ideas, the Solution Units and the TWBI team, are geographically concentrated to the European sites in general and Gothenburg in particular. For individuals at other sites this has decreased their motivation for being creative since they do not know what to make of their ideas or feel that decision makers do not understand their situation and discriminates against their ideas.

To expand the base of sources of ideas the Solution Units and the TWBI group could be geographically extended. Another way of spreading an innovative mindset and collect ideas throughout the whole organisation is by using innovation ambassadors. In the same way that the culture ambassadors spread the wanted culture throughout the organisation, innovation ambassadors could be used to promote innovation in all departments and sites.

The creative climate in Volvo IT is promising with a high amount of open, informal communication that creates a good breeding ground for ideas, especially when this happens in cross-functional channels. Moreover, Volvo IT personnel are knowledgeable in their fields of work which is one of the vital factors for creativity. The present level of intrinsic task motivation does however vary within the organisation and could be increased with an appropriate use of rewards. The third factor, creative-thinking skills could also be further improved to enhance the creative climate through, for instance, trainings in connection to idea generation and collection events.

There are individuals in all organisations that are more creative and innovative than others and have a higher level of intrinsic motivation and network connectivity. One way to reward this behaviour and show the rest of the organisation that it is valued is to exclusively invite them to specific innovation events.

In addition to idea collection through personal contacts there are some local or departmental idea collection initiatives with different levels of reported effectiveness. Volvo IT needs to have a global approach and should try to find and implement a pertinent mix of idea collection methods. A more structured idea collection method is an idea management system. Such a system could reap the previous benefits of having the suggestion box, avoid some of the drawbacks by careful design, and add some features that make the system even more inspiring for ideators.

Diversity is a pre-requisite for innovation and there is a lot of cross-functional and external interaction in Volvo IT even though it varies somewhat between departments. However, the main part of this contact occurs within projects or technical areas of work. It would be beneficial to make sure individuals are able to get in contact cross-functionally as well as externally instead

of promoting even more cross-functional interaction between groups. One part of a solution for achieving that could be global, cross-functional idea generation and collection events.

In addition to having an idea management system as a backbone for the innovation processes, Volvo IT could host innovation jams. Such brainstorming events will allow the company more focused efforts for generating and collecting ideas within given topics. Depending on the topic customers or other external actors could be invited along with all of Volvo IT's employees. In the design of an innovation jam, Volvo IT could reuse some ideas that proved to be successful in KTDG including strong support from top management, direct communication from top management to individuals throughout the organisation, and a perceived sense of urgency. For the design of the event, inspiration can also be drawn from VTEC LIVE, e.g. the fast feedback and transparent process for evaluating and selecting ideas.

The idea selection process in Volvo IT revolves around several sources of funding, all of which have different purposes and allocating councils. Despite their different purposes, it is not always evident which council to turn to for funding for a given idea. Thus, a clearer description on who funds what and why could increase the transparency of these processes and, in the long run, make the overall idea selection more efficient.

One part of Volvo IT's R&D budget is spent on pre-studies in which ideas associated with a higher degree of uncertainty can undergo initial evaluation to enable the building of a proper business case. No formal criteria are currently applied when selecting ideas for pre-studies and even though the process needs to be flexible a short checklist would be helpful to ensure that some essential criteria are fulfilled such as market potential and strategic fit.

The business case template used by SDC to determine whether or not the idea has enough potential to become a development project is quite extensive. The current design of it favours ideas with short-term profitability and thereby discriminates against more radical ideas. Adding weights or some sort of guide on how to prioritise among the different criteria could greatly facilitate these decisions and increase the predictability and transparency of the process, thereby reducing the impact of politics and individual preferences.

7 CONCLUSIONS / RECOMMENDATIONS

To answer the research questions and purpose of the study the conclusions will first summarise the current situation in Volvo IT regarding idea management and then present proposed improvement suggestions.

The aim of this study was to find out how Volvo IT can improve in the area of idea management with a focus on ideas as potential sources of business value. To achieve that, the purpose of the study was to identify improvement opportunities in the front end of the service development process.

To be able to effectively realise the purpose, an understanding of how ideas are currently managed in Volvo IT was needed. Therefore some of the research questions covered what the current sources of ideas for new customer offers are, how the current mode of operations stimulate idea generation, how ideas are collected, and how ideas are assessed and selected for further consideration for full scale development projects. The other research questions concerned how the respective areas could be improved and included how Volvo IT can expand the base from which ideas are gathered, how tools and methods used for idea generation and collection can be improved, and how the selection process be improved.

7.1 CURRENT SITUATION IN VOLVO IT

Internally in Volvo IT ideas for new customer offers mainly comes from the Solution Units including TWBI, and externally the main source of ideas are customers in the Volvo Group. Internally, it is not uncommon that ideas for new services and solutions also come from CR&S while AD and I&O are less common idea sources. Furthermore, the majority of ideas originate in the Gothenburg site while sites outside of Europe are somewhat underutilised as sources. Although the strategy is to not develop services specifically for external customers, there is information and knowledge in the external value chain that could be valuable and bring inspiration for ideas. Additionally, Volvo IT could get more inspiration from competitors and suppliers.

The current mode of operations does to a large extent stimulate the generation of ideas for new customer offers. There is an open atmosphere with a lot of informal communication and cross-functional interaction. New ideas are generally appreciated, the TWBI unit is a well-known source of inspiration and at least some parts of the organisation have extensive customer insight. Even though the culture manager and the appointed culture ambassadors do not explicitly work on creating an innovative climate they do so implicitly by promoting a culture that is open, safe, and tolerates failure.

There are however some factors for idea generation that could significantly be improved including the availability of time for idea generation, information about what is going on internally, top management support and communication, and the feeling of exclusion from the global innovation processes at some sites and departments. The communication around the strategic objectives is effective but unclear on why and how Volvo IT should become more innovative. Therefore employees do not know how they can contribute in the work towards this goal, for instance in terms of what kind of innovations Volvo IT wants to pursue.

Ideas for new customer offers are primarily collected through personal networks in Volvo IT. Individuals often start by turning to their immediate colleagues for an initial opinion of their idea, after which they turn to their nearest manager, Account Manager or Solution Unit contact.

This approach has some advantages in terms of flexibility and immediate response for the ideator but it is very person and contingency dependent.

In addition to idea collection through personal contacts there are some local or departmental idea collection initiatives with different levels of reported effectiveness. There are however no formalised, continuous forums in place where all members of the organisation can bring attention to various ideas for new and better ways to offer value to the customers of Volvo IT. The implications of relying on personal networks for collecting ideas in this way include discriminating against ideas from individuals with limited personal connections, and not having a fact-based and communal first screening process.

How ideas are assessed and selected for further consideration for a full scale development project varies depending on the idea and what kind of funding that is sought. The extensive use of personal networks will further differentiate the how idea selection is carried out for a specific idea. This creates a certain flexibility but also makes the total process unclear, which in turn makes it difficult to get a complete picture of which service development projects are prioritised and which are not.

For some types of funding, formalised evaluation criteria are available and if the “right” projects get funding will then depend on appropriateness of the criteria. Another issue with the idea selection processes is the lack of learning from previous projects, so called “lessons learned”. Rejected ideas and failed projects are not documented which limits the possibilities for learning as well as the opportunities for re-evaluating an idea that were perhaps interesting but not timely when it first appeared.

7.2 IMPROVEMENT SUGGESTIONS

The overriding research question asked how Volvo IT can improve idea management in the front end of the service development process, and the direct response is that it will depend on what kind of innovations Volvo IT are after. Even though innovation as a strategic goal is well communicated to the whole organisation, Volvo IT employees are uncertain regarding how that affects them. Therefore, top management need to make sure they know exactly why innovation is a strategic focus area as well as what results they expect to see from this. That then needs to be communicated to the organisation with practical examples of what kinds of innovations that are desired and how each employee is expected to contribute.

What kind of innovations Volvo IT want to pursue will guide the initiatives and measures taken to improve the company’s idea management processes. There are however a few main improvement suggestions, identified in this study, that is likely to be both realistic and beneficial for Volvo IT to implement within the upcoming years. The proposed suggestions include innovation ambassadors and a global expansion of the TWBI group, innovation jam events, an idea management system, and appropriate idea selection criteria.

7.2.1 INNOVATION AMBASSADORS AND TWBI EXPANSION

To reach out to the whole organisation both in terms of departments and geographical locations a network of innovation ambassadors could be used. Another way of reaching out and both inspire and gather inspiration is to expand the TWBI group globally.

Innovation ambassadors could be used to spread an innovative mindset at all departments and sites. By appointing enthusiastic persons responsible for the different departments and sites, they could work on creating an innovative culture at all parts of the organisation including those

that does not currently feel included in that process. Through dialogues, local initiatives, and spreading global initiatives they could promote an innovative mindset.

Innovation ambassadors could not only create a more creative climate but also “shorten the distance” to the headquarters by knowing to whom to turn and how to promote an idea to give it a fair chance of being evaluated for implementation. They could also collect ideas and by doing so, give individuals throughout the organisation that does not have a large personal network, better possibilities to promote their ideas. Volvo IT could thereby reduce the feeling of many employees based in sites outside of Gothenburg that innovation is something that happens far away, near the headquarters and that they know very little about and are not expected to participate in. The innovation ambassadors could have a positive effect on the current perception that ideas and business problems relevant in markets far from Gothenburg are not prioritised because of the sometimes limited understanding of each others’ situation.

Innovation ambassadors could be selected among the existing culture ambassadors or just for their interest in new ideas and innovation as well as their knowledge of the organisation and how to get around in it. The selected innovation ambassadors would benefit from some initial training, especially if they are not culture ambassadors, on how to promote idea generation. A small percentage of their time should also be devoted to this work and the promotion of ideas to make sure it is not down-prioritised.

An alternative or complement to innovation ambassadors is expanding the TWBI group outside of Europe. By expanding this group a little, by for instance one person in North America and one in Asia, they could spread the innovative culture and more effectively gather ideas locally tapping into sources of IT innovation all across the world. Albeit that there is a global TWBI network, still, formally and publicly allocating future additions to unit to sites across the globe will definitely send the signal that innovation is a companywide matter and that valuable ideas can come from anywhere.

7.2.2 INNOVATION JAMS

To improve both idea generation and collection Volvo IT should consider having innovation jams. In such large, online brainstorming events the whole organisation can participate and be inspired, educated in innovation, start sharing knowledge and ideas, and focus their creativity on one of Volvo IT’s strategic challenges.

By inviting all employees to the event no internal potential source of ideas is discriminated against. Furthermore, by choosing a theme that is relevant for whole organisation the feeling a lot of individuals have that innovation is not for them since they belong to the “wrong” function or site can be decreased.

The theme of the event should be strongly related to the strategic focus areas of Volvo IT and all participants should be provided with inspiring material prior to the event. The inspirational material and discussions throughout the event will not just produce ideas during the session but also inspire discussions and ideas afterwards. The inspirational material and innovation jam guides provided could also educate employees in creative-thinking and knowledge sharing.

Depending on the design and theme of the event it could help focus the inherent creativity of the members of the Volvo IT organisation on certain areas of particular strategic interest to Volvo IT. By the right choice of topics an innovation jam could also offer opportunities for employees to find out what is going on and which business and technological issues that are currently being discussed.

In order for the event to maximise its potential it is important that Volvo IT has allocated resources for the future evolution and development of promising ideas that are collected during the event. Communicating before the innovation jam that there is a concrete plan for how to proceed afterwards, the potential recognition and personal satisfaction in seeing your idea realised can motivate the participants to contribute. Also, launching a more structured approach to idea collection conveys the message that Volvo IT values input from its employees which in turn can stimulate idea generation and creativity.

The potential drawback of this type of event based idea generation and collection is that it discriminates against ideas that surface outside of the time frame of the event. One could perhaps anticipate that the discussion at the event will fuel further discussions among colleagues afterwards. Without the complementary function of a continuous idea collection interface, these ideas might be lost. The implementation of an idea management system will counteract this shortcoming.

7.2.3 IDEA MANAGEMENT SYSTEM

It is advisable to implement a continuous system for idea collection that is open to everyone all year round so as to not miss out on ideas that surface outside of for instance budget processes or innovation events. An idea management system in terms of an internet based interface where individuals or teams can post ideas also effectively complements the praxis of personal networks since it makes the idea less dependent on the ideators' position in the organisation.

The previous suggestion box mainly focused on suggestions for operational improvements is planned to be re-launched shortly. By making that idea box more elaborate and suitable for any kind of ideas Volvo IT has a lot to gain. Various types of ideas can be valuable to Volvo IT on different level and in order to facilitate for the ideator it is advisable to implement one and the same interface, regardless if it is an idea associated with internal processes or the service portfolio. By facilitating the activity of idea submission and not forcing the ideator to sort his or her idea beforehand, one reduces the threshold to submitting ideas. Furthermore, if the receiving end consists of a team of individuals with good knowledge of the organisation and its processes, having one interface also reduces the risk of the ideas disappearing as a result of being sent to the "wrong" receiver.

One key success factor to ensure the successful implementation of an idea management system is that the ideator should receive feedback, other than just an automatic reply upon posting. Getting feedback and being kept in the loop on the evaluation of the idea can be rewarding and help motivate submitting more ideas in the future. Also, seeing the ideas of others taken into serious consideration can inspire new ideators. One could perhaps also open up for other members of the organisation to comment on posted ideas to help refine and elaborate the idea. By opening up an idea management system or innovation event there could be even more opportunities for employees to find out what is going on and which business and technological issues that are currently being discussed.

Another factor that could help stimulate the use of the idea management system is rewards. However, monetary rewards can result in a competitive climate and information hoarding, both which characterise the very opposite of a company culture that stimulates creativity and innovation. Instead, one can introduce symbolic, positive rewards in the shape of, for instance, a mug per submitted idea or something similar. By rewarding participation and the submitting rather than implementation of ideas the ideators have more to gain from sharing an idea rather than keeping it to themselves because they perceive it not to be considered "good enough".

7.2.4 IDEA SELECTION CRITERIA

Generating and collecting a lot of promising ideas is of no use if the selection processes will not make sure that the ideas with the most potential chosen for further consideration for implementation. Which ideas are the most desirable to further investigate depend on what kinds of innovations Volvo IT want to pursue, and so does the appropriate decision criteria.

To be able to have a more complete view of what is, and should be, developed with which sources of funding, a clear description of the different selection processes in Volvo IT would be beneficial. By clearly describing what the purpose of each source of funding is, what the selection criteria are, and what the selection process looks like would increase transparency. This would make it possible for employees to find out how and which ideas are selected for further consideration. Also, knowing what the process is like makes it easier to improve it and can in the long run make the overall idea selection more efficient.

The Solution units are allocated a yearly budget for pre-studies but how these funds are made available for investigating a certain idea differs somewhat between the units. In general, there are no formal decision criteria but a connection to customer needs is often required. The market potential and customer need for an idea are suitable decision criteria for pre-studies but, to make sure it is always checked in a structured manner, a simple checklist stating these decision criteria could be used.

If a pre-study shows that the idea has potential it can be considered for a larger development project within Volvo IT and then its funding will be decided by the Service Development Council (SDC). The SDC uses a quite extensive business case template for idea assessment including financial, technological, and market aspects as well as proposed project team composition. Including a lot of information and having no easy way of making a decision based on all factors can however make the selection unstructured. Therefore some weighting of the different factors could be useful to guide decision makers.

More specifically regarding the business case template, one factor that seems to be prominent is short term profitability that is measured through a few financial estimations. The appropriateness of emphasising short term profitability can be questioned, especially if Volvo IT aims at becoming more innovative and develop some more radical ideas. To further improve the template, opportunity cost could be added since that is currently not included and can be needed to get a more complete financial picture.

7.3 RECOMMENDATIONS

Based on the analysis of the empirical results, we would first of all recommend the firm to define and communicate the Volvo IT interpretation of innovation. This should not be in terms of numbers and figures, but rather with inspiring examples and visions on what innovations one is looking for and where being innovative will take the firm in the long run. The organisation knows that innovation is a strategic goal but not why it is important and what it is means. Apart from this, we would also like to recommend the following actions be taken to improve the overall idea management within the firm:

Secure a just and purposeful idea selection – Choose appropriate selection criteria. The current evaluation criteria applied to ideas for new service development favour incremental innovations, although there is some room for slightly more radical ideas via prototypes and pre-studies. We recommend the introduction of a small set of formal evaluation criteria to be used in the earliest stages of idea selection, i.e. for the pre-studies and the prototypes. These criteria

should focus on evaluating the market potential and the company-fit of the idea. We also recommend additional information is made available on how the business case template is used in the SDC, which criteria that are the most important ones. Adding weights to the current template could help guide the decisions and make the selection process more transparent. Finally, it should be kept in mind that the current emphasis on financial criteria and short pay-back time will have an impact on which ideas that are brought to the SDC's attention.

Engage and inspire the entire organisation - Host innovation jam events.

These types of events are not only a channel through which ideas can be collected, they also encourage the valuable constructive discussions that can turn good ideas into great ones. We believe that hosting an innovation jam also can be a good way to energise the organisation, putting innovation on the agenda whilst showing that innovation can be arise from combinations of knowledge that already exists within the organisation. An ideation event like this can give momentum to a more continuous innovation and idea management process.

Enable a continuous, global flow of ideas - Implement an idea management system.

Our research shows that Volvo IT, with its open climate and knowledgeable employees, is in a good position to generate creative and innovative ideas. However, without a clear structure in place to take care of and refine these ideas, they might never get the attention they deserve. Collecting them via events is a start, but we believe that Volvo IT has a lot to gain from implementing a global online idea management system open for all types of ideas. Such a system will enable continuous submission and collective refinement of ideas from the entire organisation. Not only would an idea management system help reduce the Gothenburg focus but we believe that it would also increase knowledge sharing and extract more – and better – ideas from all parts of the organisation.

Make innovation a global matter - Introduce innovation ambassadors and expand TWBI.

Volvo IT is a large global organisation with the potential to generate valuable ideas and innovations for global markets. However, the geographical distances pose quite a challenge when it comes to tapping into the creativity in all parts of the organisation. We believe that making sure that all sites have equal interest in, and opportunity for, generating and submitting ideas will bring more and better ideas to light.

8 DISCUSSION

There is something almost magical about ideas and how they appear, evolve and even disappear over time. The management of ideas and innovation is a current topic and it is bound to be in focus for a wide variety of firms. Although this master thesis project is a case study of one particular organisation and its characteristics, it could still contain useful information and insights for other firms pursuing creative work and innovation.

The condensed key message is that firms that are serious in their innovation efforts have to deploy a conscious approach to managing ideas. Innovative firms do not rely on mere serendipity as a source of business value, they build an organisation with processes designed to enable and tap into the creativity of its employees.

How to best build an ideating organisation depends on what types of ideas, and in the extension, what types of innovations that the firm is looking for. Thus, in order for Volvo IT to succeed with the strategic focus area of innovation the organisation must make its own interpretation of innovation and spread it throughout the organisation.

During our research we have come to interpret Volvo IT as an organisation that does not position itself on the leading edge of technical innovation. Instead, it is as a firm that looks for innovative combinations of existing technology and we have designed our improvement suggestions with this vision in mind. If Volvo IT was to shift its innovation strategy to more radical, technology innovations then other improvement suggestion would become relevant. We would then, for instance, suggest the implementation of slack time and a drastically different idea selection process that does not favour incremental ideas to the same extent as the current one.

Of the improvement suggestions, the one easiest to implement is perhaps the introduction of evaluation criteria for pre-studies as well as the adding of weights to the business case template. These measures can be introduced through a top-down decision which could be implemented within the near future. Hosting an ideation event and participating in the re-launch of the suggestion box are two improvement suggestions that require planning and coordination. However, we believe that they could be implemented before the end of the year. The appointing of innovation ambassadors will be an ongoing process with a large number of ambassadors spread across the organisation in two-three years time. Finally, the expansion of TWBI is not something that we expect in the near future, however, if or when it occurs, it could help bring in ideas from other parts of the organisation.

It is difficult to acquire in-depth understanding of the official and unofficial processes of a large and complex organisation such as Volvo IT in a few months time. We had the privilege of spending considerable time on site, attending meetings and workshops with Volvo IT employees. However, our understanding and thereby the results of this report, could have been improved if we would have had the possibility to observe the R&D budget process first hand during the fall.

Finally, although our task has been to identify and target areas for improvement, we would also like to point out that Volvo IT has come a long way in building a company culture that supports creativity and innovation. We believe that the organisation is in a good position to improve the idea management practices and add even more value to their customers.

9 LIST OF REFERENCES

The list of references is divided into two parts; academic references and company-specific references. The academic references consist of books and articles referred to in the chapter on previous research. The company-specific references consist of online documents and webpages used as sources of information on Volvo IT and Volvo Group characteristics.

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9.2 COMPANY SPECIFIC REFERENCES

The references listed below have been used as sources of information on Volvo Group and Volvo IT specifics. The list is divided into two parts; one containing publicly available sites and one containing sites only available through the Volvo Group Intranet Violin.

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10 APPENDICES

The three appendices in this chapter are as follows; interview guides, list of interviewees, and a list of acronyms used throughout the report.

10.1 APPENDIX I – INTERVIEW GUIDES

This appendix is divided into two parts starting with the master interview guide followed by the random sample interview guide.

10.1.1 MASTER INTERVIEW GUIDE

The master guide contains a raw list of interview questions that made it possible to answer the research questions. The master interview guide was the starting-point from which to construct specific guides for each interview object depending on his or her particular competence and position in the Volvo IT organisation.

Each interview commenced with a brief presentation of the interviewers and the overriding purpose of the thesis for which the information from the interviewee will be utilised. Thereafter, the interviewee was asked to present herself/himself and her/his role at Volvo IT. The third section of the master interview guide contains a number of questions, each with the purpose of extracting data relevant to one, or several, research questions. The section contains *all* potential questions, organised on the basis of which research question they originate from. In order to not confuse research question with interview questions, the *research questions* are printed in *italics*.

The final part of the interviews consisted of a brief wrap-up where the interviewers asked permission to contact the interviewee for potential follow-up questions. The interviewee was also given an opportunity to ask questions.

Part A - Background and introduction:

My name is Maria-Lina Hedlund and this is Cajsa Johansson, we are writing our master thesis at Volvo IT as the last part of our master degree in Management and Economics of Innovation at Chalmers University of Technology in Gothenburg. In our master thesis project we are looking at the idea management processes at Volvo IT. This means that we are studying the processes from when someone comes up with an idea for a new service until a development project is launched based on this idea (until CSG in IS-GDP4IT). The purpose of our work is to come up with suggestions on how Volvo IT can improve these processes. Our supervisors at Volvo IT are Kerstin Hanson and Peter Fransson from Tech Watch & Business Innovation, and they were the ones that recommended us to talk to you since you....

Part B – The interview subject and his/her position:

- Perhaps you could start by telling us a little about yourself; who are you and what do you work with?
- Regarding idea management in Volvo IT, what do you think is working well? What is not working very well? How do you think this could be improved?

Part C – Research questions:

How can Volvo IT improve idea management in the front end of the service development process?

What are the current sources of ideas for new customer offers?

- Where do ideas for new services and other customer offers come from?
 - Individuals or small groups? Which positions/roles? Which internal departments?
 - External actors such as customers, final customers, suppliers, competitors, or collaboration partners?

Are there other potential sources of ideas?

How can Volvo IT expand the base from which ideas are gathered?

- Are there any positions/roles/internal departments/ external actors that could contribute with substantially better/more ideas than they currently do?
 - How could they be encouraged to do so?

How does the current mode of operations stimulate the generation of ideas for new customer offers?

How can work processes be improved to better stimulate idea generation?

- How do you receive information regarding Volvo IT's strategic objectives?
 - Would you like to receive this information in any other way?
- Innovation is fairly recent addition to the strategic focus of Volvo IT, how has this affected you and your work?
- How do you/your department interact with external actors such as customers, users, or suppliers?
- How do you/ your department get insight into the customers' needs and their business?
- Do you/your department search for market and technology trends? How?
- How much cross-functional contact do you / your department have?
 - Would you like to have more cross-functional interaction?
 - Do you have any suggestions on how to increase it?
- Are you able to get information on what other departments and colleagues are working with?
 - If not, would like to be able to access such information?

- Are you able to get information on what ideas for new services that have been suggested?
 - If not, would like to be able to access such information?
- Do you and your colleagues discuss ways to improve existing services and ideas for new services in any formal/informal forum? (e.g. coffee breaks, lunches...)
 - Would you like to have a more formal discussion forum for this?
- Is creative or innovative work recognised and rewarded in Volvo IT / your department?
 - In what way?
- Are you expected to have 100% chargeability every week or are you able to spend any time on personal, yet work related, projects or ideas?
- Can you give examples of initiatives in terms of training, communication initiatives or other activities that have been carried out with the purpose of stimulating creativity / idea generation?
 - Have you / the members of your department received any training in creative thinking / problem solving techniques?
 - Would you like to see more of these types of activities?

What new tools or methods can be implemented to stimulate idea generation?

- Are there any idea generation tools or methods currently used?
 - How do they work? What is your opinion on these tools?
- What tools/methods for idea generation have been tried before?
 - How did they work? What were the results?

How are ideas for new customer offers currently collected?

How can the tools or methods for idea collection be improved?

- How do you collect ideas for new service development?
 - What other idea collection methods are in place?
- If someone talks to you about an idea for a new customer offer within your solution area, what do you do?
- If you have an idea, what do you do with it?
 - If you will not submit it, why not?
- How are submitted ideas rewarded?

- If you submit an idea, do you get any feedback?
- Do you have any suggestions on how the process of idea collection could be improved?

How are ideas examined prior to being accepted, or rejected, for further consideration for a full scale development project?

What are the implications of this examination in terms of launched projects?

How can this examination be improved to facilitate the launch of development projects for promising new services?

- What decision points does an idea have to pass to be launched as a development project?
- What decision criteria are applied in these points?
 - Are these criteria clearly stated somewhere?
 - What do you think about these criteria?
 - Do you feel that the selection criteria favour a certain type of ideas? (technology-based/market-focused/ radical/ incremental/ short-term/ other)
 - Are there any decisions criteria that you would like to see added to/deleted from the process?
 - If several projects fulfil the evaluation criteria and there are not resources for development of them all, how is prioritisation done?
- Is there any way in which you think the idea selection process could be improved? (group composition etc.)

Part D - Wrap up:

That was all the questions we had for now, thanks for your time! Could we contact you if we come up with any follow up questions? You are of course very welcome to get back to us if you think of anything else that might be useful input for us.

10.1.2 RANDOM SAMPLE INTERVIEW GUIDE

The random sample interview guide was utilised in the 30 interviews conducted with a random sample of Volvo IT employees from different departments and sites. The purpose of these interviews was to get an understanding of the practices in place to manage ideas and a hint of the attitude towards innovation and creativity throughout the organisation.

Part 1 - Background and introduction:

My name is Maria-Lina Hedlund and this is Cajsa Johansson, we are writing our master thesis at Volvo IT as the last part of a master degree in Management and Economics of Innovation at Chalmers University of Technology in Gothenburg. In our master thesis project we are looking at the idea management processes at Volvo IT. This means that we are studying what happens from the moment when someone comes up with an idea for a new service, or another type of customer offer, until a development project is launched based on this idea (up until CSG in IS-GDP4IT). The purpose of our work is to come up with suggestions on how Volvo IT can improve these processes. Our supervisors at Volvo IT are Kerstin Hanson and Peter Fransson from Tech Watch & Business Innovation.

One part of our work consists of getting an overview of how people in different parts of Volvo IT work in general, and more specifically how they work with new ideas and innovation. In order to get this information we are conducting a series of interviews with a sample of employees from across the global organisation, including you.

Part 2 – The interview subject and his/her position:

- Perhaps you could start by telling us a little about yourself; what you work with, at which department and which site?
- How do you receive information regarding Volvo IT's strategic objectives?
 - Would you like to receive this information in any other way?
- Innovation is fairly recent addition to the strategic focus of Volvo IT, how has this affected you and your work?

Part 3 – Idea collection

- If you have an idea, what do you do with it?
 - If you will not submit it, why not?
- How are submitted ideas rewarded?
- If you submit an idea, do you get any feedback?
- Are there any idea generation tools or methods currently used?
 - How do they work?
 - What is your opinion on these tools?

- What should be changed / preserved?
- Regarding idea management in Volvo IT, what do you think is working well?
 - What is not working very well?
 - How do you think this could be improved?

Part 4 - The innovative climate

- Have you / the members of your department received any training in creative thinking / problem solving techniques?
 - Would you like to see more of these types of activities?
- Is creative or innovative work recognized and rewarded in Volvo IT / your department?
 - In what way?
- Are you able to spend any time on personal, yet work related, projects or ideas?
- Are you able to get information on what other departments and colleagues are working with?
- Are you able to get information on what ideas for new services that have been suggested?

Part 5 - The work process:

- How do you / you department interact with external actors such as customers, users, or suppliers?
 - How do you / your department get insight into the customers' needs and their business?
- How much cross-functional contact do you / your department have?
 - Would you like to have more cross-functional interaction?
 - Do you have any suggestions on how to increase it?

Part 6 - Wrap up:

That was all the questions we had for now, thanks for your time! Could we contact you if we come up with any follow up questions? You are of course very welcome to get back to us if you think of anything else that might be useful input for us.

10.2 APPENDIX II – LIST OF INTERVIEWEES

This appendix contains a list of the date and duration of each interview, department and site of each interviewee, and finally which interview guide was used during the interview.

	Date	Duration	Department	Country	Interview guide *
1	10-02-24	60 min	DtR SU	Sweden	EXP
2	10-02-24	60 min	PD SU	Sweden	EXP
3	10-02-26	60 min	OtD SU	France	EXP
4	10-03-01	60 min	StO SU	France	EXP
5	10-03-04	60 min	TWBI	Sweden	EXP
6	10-03-10	60 min	TWBI	Sweden	EXP
7	10-03-17	60 min	HR & Culture	Sweden	SME: VIT Culture
8	10-03-18	60 min	VTEC	Sweden	SME: VTEC Inn.
9	10-03-24	60 min	Corp. Comm.	Sweden	SME: KTDG
10	10-03-25	60 min	TWBI	Sweden	EXP
11	10-03-25	60 min	StO SU	UK	EXP
12	10-03-29	60 min	PD SU	Sweden	EXP
13	10-03-29	60 min	VTEC	Sweden	SME: VTEC Inn.
14	10-03-30	60 min	Strateg & Op.Ex.	Sweden	SME: Idea box
15	10-03-30	60 min	I&O	Sweden	SME: I&O
16	10-03-30	60 min	APAC	India	SME: APAC
17	10-04-06	60 min	AD	Sweden	SME: AD
18	10-04-06	60 min	GS SU	Sweden	SME: GS
19	10-04-06	60 min	CR&S	USA	SME: CR&S
20	10-04-08	30 min	CR&S	Sweden	SME: Customer. teams
21	10-04-08	60 min	GS SU	France	SME: SU GS
22	10-04-09	60 min	TWBI	Sweden	SME: VITIC
23	10-04-12	60 min	CR&S	Sweden	SME: CR&S
24	10-04-13	30 min	CR&S	USA	RSIG

	Date	Duration	Department	Country	Interview guide *
25	10-04-13	30 min	CR&S	USA	RSIG
26	10-04-13	30 min	AD	Sweden	RSIG
27	10-04-13	30 min	AD	India	RSIG
28	10-04-13	30 min	AD	UK	RSIG
29	10-04-13	30 min	StO SU	USA	RSIG
30	10-04-13	30 min	AD	Sweden	RSIG
31	10-04-14	60 min	GS SU	France	SME: PSP process
32	10-04-15	30 min	CR&S	Holland	RSIG
33	10-04-15	30 min	I&O	France	RSIG
34	10-04-15	30 min	AD	USA	RSIG
35	10-04-15	30 min	I&O	USA	RSIG
36	10-04-16	60 min	DtR SU	Sweden	SME: SU DtR
37	10-04-19	30 min	DtR SU	Sweden	RSIG
38	10-04-20	30 min	GS SU	Sweden	RSIG
39	10-04-20	30 min	I&O	Sweden	RSIG
40	10-04-20	30 min	I&O	Sweden	RSIG
41	10-04-20	60 min	CR&S	Sweden	SME: Cust. teams
42	10-04-21	30 min	I&O	Sweden	RSIG
43	10-04-21	30 min	OtD SU	USA	RSIG
44	10-04-21	30 min	CR&S	USA	RSIG
45	10-04-21	30 min	I&O	Sweden	RSIG
46	10-04-22	30 min	AD	Sweden	RSIG
47	10-04-22	30 min	CR&S	France	RSIG
48	10-04-22	30 min	PD SU	France	RSIG
49	10-04-22	30 min	I&O	Sweden	RSIG
50	10-04-26	30 min	I&O	USA	RSIG
51	10-04-26	30 min	AD	Sweden	RSIG
52	10-04-26	30 min	I&O	Holland	RSIG

	Date	Duration	Department	Country	Interview guide *
53	10-04-26	30 min	AD	Sweden	RSIG
54	10-04-29	30 min	AD	Poland	RSIG
55	10-04-29	30 min	I&O	France	RSIG
56	10-05-03	60 min	CR&S	Belgium	SME: Inn.Challenge
57	10-05-03	60 min	VG IT Gov.	Sweden	SME: IT Governance
58	10-05-04	Email	AD	Brazil	RSIG

EXP = Exploratory, rather open interview based on research question and the interviewee's position
SME = Subject Matter Expert, based on the master interview guide
RSIG = Random Sample Interview Guide

10.3 APPENDIX III – LIST OF ACRONYMS

Throughout the report some acronyms have are used. A list of them and a very short explanation of what they refer to is provided in this appendix.

Acronym	Full name	Explanation
AD	Application Delivery	Department in Volvo IT
AM	Account Manager	Role in CR&S, responsible for a customer account
APAC	Asian Pacific	Geographic region
BA/BU	Business Areas/Business Units	Organisations in the Volvo Group
CRM	Customer Relations Management	
CR&S	Customer Relations & Sales	Department in Volvo IT
DtR SU	Delivery to Repurchase Solution Unit	SU group
EMT	Executive Management Team	Volvo IT's top management team
FEI	Front End of Innovation	
GEC	Group Executive Committee	Volvo Group executive committee
GIB	Group Issue Board	Volvo Group issue committee for specified area
GS SU	General Solutions Solution Unit	SU group
I&O	Infrastructure & Operations	Department in Volvo IT
KTDG	Keep the dialogue going	Idea collection event in Volvo IT
OtD SU	Order to Delivery Solution Unit	SU group
PD SU	Product Development Solution Unit	SU group
R&D	Research & Development	
SDC	Service Development Council	Council responsible for Volvo IT's R&D budget
StO SU	Sales to Order Solution Unit	SU group
SU	Solution Unit	Department in Volvo IT
TWBI	TechWatch & Business Innovation	Group in GS SU