UNIVERSITY OF GOTHENBURG
SCHOOL OF BUSINESS, ECONOMICS AND LAW

Master Degree Project in Innovation and Industrial Management

A Case Study: What Impacts the Fuzzy Front End?

Tom Lundqvist

Abstract

Research show that it is early in the innovation process that organizations have the largest possibility to have an impact on the idea, and this impact is the least expensive during the early phase of the innovation process. Even though it is here the organizations have the largest opportunity to have an impact on the potential idea, this phase is often not prioritized by organizations. SCA has decided to not be one of these firms; it has developed and is planning on implementing a process for the Fuzzy Front End (FFE) phase. However, this structured approach is developed in a general way and not tailor made for each unit of the company. Hence, Global Hygiene Category Away From Home Professional Hygiene wants to know how to apply this developed model to their organization, how to use the different tools, and to know what is important when using the different tools among other factors. With employee interviews at the researched unit as the foundation, four factors were considered important to research. The theoretical results show that the main benefits to achieve during ideation workshops are knowledge sharing and gaining additional idea development. Moreover, the identified potential improvement generally is regarding how to manage the four identified factors to be able to obtain the identified benefits. The recommendations argue how SCA could manage each of these four factors in order to obtain the best possible FFE phase.

Keywords: Fuzzy Front End, Ideation, Ideation Tools, Workshops

Contents

1.   Introduction

This chapter aims to provide the background for the thesis and to introduce the company that has been subject of the study, Svenska Cellulosa AB. And finally the research question for the study will be presented.

1.1 The Innovation Process

Good ideas can become innovations; the good idea is however only the first step in the innovation process. Rather, innovation can be viewed as a process of developing ideas into commonly used practices (Tidd & Bessant, 2009). Hence, we can clearly see that innovation is more than just the invention; innovation is as according to Dodgson et al (2008, p. 2) "the successful commercial explotion of new ideas"

Moreover, the challenge that a lot of organizations encounter when managing innovation is to in a strucutred way manage innovation. When innovation is managed it enables the development of a new solution that can assist the organization to disrupt problems that the organization is currrently encountering (Dodgson et al, 2008).

One way of managing innovation and new product development is by adapting a Stage Gate Process. A stage gate process is a model that assists the organization to move a potential product from idea to launch, and works both conceptually and operationally (Cooper, 1990). Below we can see Cooper's (1990) stage gate model:

.
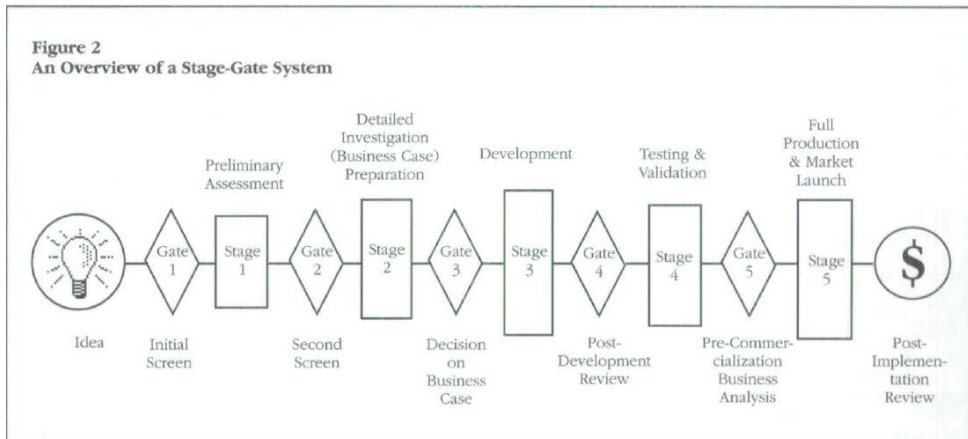
Figure 2
An Overview of a Stage-Gate System

1.2 The Fuzzy Front End

The Fuzzy Front End (FFE) is the phase that takes place before the stage gate process. It is here ideas are generated and processed into the stage gate (Cooper, 1988). The FFE is according to Cooper (1988) the most pivotal step of the product process; it is in this stage where the success or failure of a product is largely decided.

Kim and Wilemon (2002) argue that the importance of the "Fuzzy Front End" (FFE) lies in the fact that effectively performing front-end activities can contribute directly to the success of a new product. These statements both strengthen and develop the previous statements regarding management involvement and its effect.

Moreover, it is during the FFE-phase that the degree of freedom is the highest and cost for changes are low; hence it is here the biggest possibility for change exists for the organizations. Moreover, according to Kim and Wilemon (2002) it is in the FFE-process where the most improvement on time-to-market can be done and since time is considered one of the most costly factors in new product development this could be considered a strong incitement to develop the FFE-process. Based on these facts the FFE-phase is of crucial importance and should be regarded seriously (Herstatt & Verworn, 2001)

1.3 Company Background

The company that will be the subject of this study is Svenska Cellulosa AB (SCA), a hygiene product company listed on the Stockholm Stock Exchange. SCA today have about 36 000 employees in 100 countries. SCA is currently acting on highly competitive markets and are therefore depending on a constant flow of new products. The global service and product developers therefore play a very important part within the organization. SCA sees the importance of a constant flow of innovations, which is also the reason they developed a model for the FFE phase. The second reason why SCA decided to develop a model for the FFE phase is because they lacked a formal model when working in the FFE phase. Furthermore, there is a knowledge gap that needs to be filled prior to completely implement the process; these gaps are regarding what influences the quality of the outcome from the FFE phase and proceeds into development in a stage gate process and this study aims to provide material to help SCA make this decision. This study will research different criteria and its effect on the outcome from the FFE phase, these criteria will be decided from interviews with innovation employees at SCA after the interviews observations to see the how these effect the amount of ideas that pass through the FFE phase will be engaged. When the ideas are processed from this phase into the next step, the ideas enter a stage gate model referred to as the innovation funnel. This FFE activity is hence referred to as "feeding the funnel".
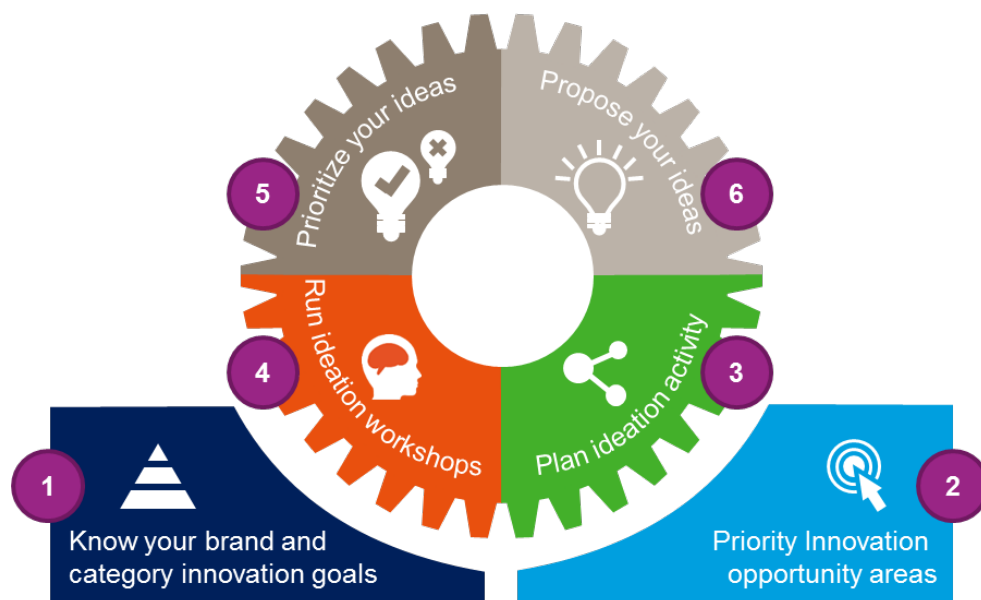

Figure 2 (SCA Model)

1.4 Problem

When it comes to the FFE phase of product and service development there are different approaches suggested for the best possible outcome. There are researchers suggesting that the FFE phase is, unlike the innovation funnel, non-routine, dynamic and uncertain and that this is of importance for a successful FFE phase (Kim & Wilemon, 2002). In addition there is research suggesting that a more structured predevelopment phase is more suiting. According to Clepf, Passarini Takashashi, Camargo Jr., & Goncalves Maia Campos (2012) a more structured FFE phase generate a better defined product definition which is considered an important factor for product development success.

Moreover, a large company needs both structure and unstructured portions to be efficient. If a firm pursues a strictly structured predevelopment phase there is a possibility that the output is an increased innovation funnel (Clepf et al, 2012). What is missing here is the leeway for creativity and providing outside the framework output. Moreover, there is proof that this type of action increases the strength of the definition of concepts entering the development stage and lower cost in the development stage Cooper (1998). In addition, if a company chose to apply a strictly unstructured approach to the predevelopment phase, there are great possibilities for radical thinking and creation of original concepts. However, still there is scientific proof that there is a correlation between an unstructured predevelopment phase and lower success rate in the development process. To summarize the problem, the problem lies in implementing a structured predevelopment phase without being too structured or to ad hoc and un-structured.

1.5 Purpose and Research Question

This study will research which factors throughout the feeding the funnel process that has a positive and negative effect on the outcome, which in this case is measured in the amount of ideas that passes screening, and develop the process to enable SCA to implement a more solid model. The study will be conducted through a type of experiment where two different projects are built on different criteria, for example group size, structure, workshop supervision and competences. These two groups will be observed throughout the whole process and the output is measured in how many ideas that managed to go through a screening phase. The criteria will be decided from

interviews with relevant employees ,either with a technical or a brand specification, that have experience from working with the FFE phase to see what their perception and experiences is regarding what factors are important within this phase. Moreover, most of the observation will be conducted during project team ideation workshops, the rest have been carried out during the planning phase and screening phase. These teams will consist of people both that attended the interviews and those who did not. The research question for the study is:

- What factors has the biggest impact on FFE phase output?

At SCA where this study will be conducted one central object is workshops, this is the most commonly used ideation tools. Hence, there is need to identify what can possibly be gained from workshops so the sub-question is:

- What potential benefits can be gained in Workshops?

1.6 Limitations

The shortcomings of these studies are mainly regarding the fact that the ideas that are generated in the ideation will only be measured on the amount of sufficient ideas generated and what have affected these. However, what is a clear shortcoming is that the results of the developed product cannot be examined since this would need a far longer time frame. Another shortcoming is that most of the data that will be analyzed comes from workshops. This is a limitation since the data collection becomes quite one dimensional. And finally, the study only follows two projects which can increase the possibility of certain things happening without explanation.

2. Theoretical framework

The aim of this chapter is to present the different theories and tools that together constitute the theoretical framework. Initially different central concepts will be explained for the comfort of the reader. Following this the most central theory of the study, the FFE phase, will be presented and explained. Furthermore, the tools for ideation used by SCA will be presented. Finally, the potential benefits of each idea generation tool will be regarded and presented

Clepf et al (2012) identified two main factors influencing the product development success during their study, and these where quality of execution of predevelopment activities and a well-defined project prior to the development phase. Moreover, what was done in this case was that Natura structured their FFE, or predevelopment as it is referred to in the case, into different stages. The first step of the process was opportunity recognition in which opportunities are identified that could be considered candidates for further development. The second step was opportunity analysis. In this stage the opportunity was analyzed regarding whether it was worth pursuing or not. The main factors that the opportunity was valued with were market and technological development. The third step was idea generation and enrichment, a formal process that could include brain storming, idea banks, different types of workshops and developed ideas for the identified opportunity. The fourth step was idea selection which generally includes influences from management feed-back. The fifth, and last, step was concept definition; this step can be compared to an internal sales activity where the developers of the concepts need to generate management involvement for the concept to enter a feasibility stage. Finally, these incentives assisted Natura to develop 300 products on average in a two year period. And as argued in the case, the development of new products could enable the company to provide up-to-date products that is of high importance for corporate survival (Clepf et al, 2012).

It is important to enlighten that innovation reaches beyond inventions. Innovation is the creation of new ideas and the reduction of practice and it include all activities to successfully commercialize a product (Dodgson, Gann, & Salter, 2008). Furthermore, innovation is a very central and crucial part of an organizations development. If they get it right the company creates value and profit, however if they get it wrong the

organization can start losing money and can through this face terminal problems (Dodgson Et al 2008).

2.1 Concept clarifications

The **FFE** According to Poskela and Martinsuo (2009) the predevelopment phase is the activities that take place before the formal product development project, and this definition will be used throughout this study. It is also mentioned that this phase is considered the most troublesome phase. However, while being considered the most troublesome phase it is also considered the part of the process where there is the largest possibility for improvement and change (Poskela & Martinsuo, 2009). **Creativity** is as explained by Amabile (2006 p.1) as "the production of novel and useful ideas in any domain." This is a concept that will be emphasized during my study due to the potential impact of creativity on the predevelopment phase and its importance to successful product development. The **stage gate** is defined by Cooper and Edget (2007, s. 118) as "In traditional product innovation, a funnel portrays the process. Ideas from inside and outside the company is screened through a series of culling points (gates) and is developed and commercialized by the company." This is a central concept due to the fact that it is used by Tork for product and service development. Furthermore, since it is a central concept for the firm and it is used throughout the whole organization it will be regarded when developing a FFE phase. According to Björk, Boccardelli and Magnusson (2010), the **ideation capabilities** are based on dynamic capabilities framework. The ideation capabilities are a process, both managerial and organizational, that assist an organization with stimulation, identification, selection and implementation of ideas (Björk Et al 2010). Hence, in order for ideas to be of higher quality and increase the number of ideas created by individuals, interaction with other people is essential (Björk & Magnusson, 2009). Furthermore, as stated by Grant (2010) **competitive advantage** is when a competitor earns a persistently higher rate of profit in comparison to another actor within the same market. Additionally, one common way to obtain competitive advantage is to manage innovation in a superior fashion to the competition (Grant, 2010). In other words, the reason why competitive advantage is mentioned within this section is because by utilizing superior innovation management a potential competitive advantage is a potential outcome.

2.2 The Fuzzy Front End

The FFE is according to Cooper (1988) the most pivotal step of the product process; it is in this stage where the success or failure of a product is largely decided. The model developed by Cooper (1988) of the FFE phase is a three step model. The model developed by SCA is inspired by the model developed

Cooper (1998), hence this will be the main subject when studying the theoretical framework behind the FFE phase.
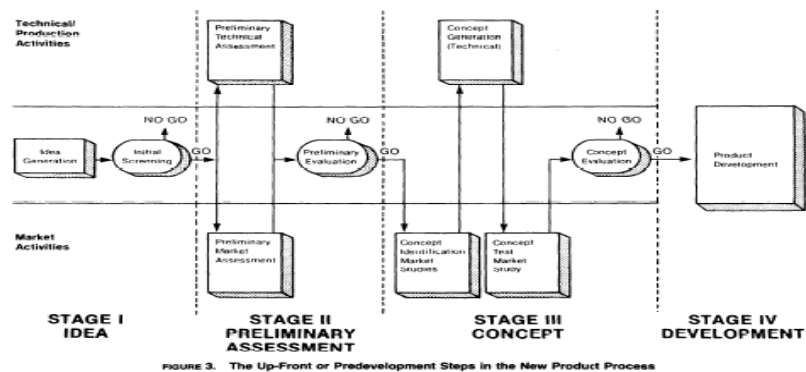
The first step is **idea generation**, which basically consists of generating and screening ideas. There are according to different ways of how the idea generation can be improved and generate more qualitative ideas. The first is to "listen to the customer". An example on how to practically do this is to arrange a panel of potential customers and have this panel continuously provide the company with feed-back and ideas. The second way of increasing idea quality is to "utilize the sales and service groups". This can be carried out through encouraging the sales force to submit ideas on potential products or service directly to the product development unit. This is important due to the fact that the sales force is the people whom are closest to the customer and get the immediate input from the customer. Finally the last suggestion in order to increase the quality of ideas is to "utilize creativity sessions". A properly structured creative session can potentially generate several good product ideas. When the idea generation is done it is time to screen the ideas that have been generated and determine which of the potential product ideas to continue refining. It is essential that the go kill decision is regarded as a formal step of the idea generation which is needed to be carried out prior to receiving funding from management. The intention with the screening is to exclude only the obvious losers and misfit projects (Cooper, 1988).

The second part of the predevelopment phase is the **preliminary assessment** where significant resources are spent in order to gather information regarding the feasibility of the project (Cooper, 1988). The preliminary assessment is divided into three different categories. First off is the "preliminary market assessment". The purpose of the market assessment is not to pursue a complete market study, rather to get a picture of the market. There are several different ways presented by the authors that this can be effectively carried out. Moreover, they all try to test whether there is a potential market or not (Cooper, 1988). The second part of the preliminary assessment is the preliminary technical assessment. In this step the proposed idea is evaluated by the firms' technical staff to determine its technical feasibility. The most important question to answer here is if the product can be developed.

The third step in the preliminary assessment is the preliminary evaluation. This is the kill/go phase. Here a more thorough analysis is carried out in order to determine both qualitative and financial values. This is a crucial point since if a project is decided to go through the process it will be much more resource expenditure involved (Cooper, 1988).

The last step of the FFE phase is the **concept definition**. One of the most important purposes in this stage is that a go signal in this phase indicates that management will commit to the idea and hence enter a very expensive development process. An additional purpose with this phase is to develop and define a strategy for the future product. A properly executed concept definition should generate a winning concept, i.e. a concept that outperforms competitor concepts (Cooper, 1988). There are three different steps within the concept definition phase. First is the "concept identification". Within this stage there is generally a prospecting investigation in order to determine the customers' ideal product or a customer wish list. A typical objective within this stage is to answer the question "what product is the customer using now and why?" and when this question is answered the new objective is to figure out how to make the customer change to the new product (Cooper , 1988). The next step is the "concept development" where the market requirements that were discovered in the previous step are translated into operational and economic feasibility. In addition, within the concept development stage the technical solution is largely emphasized (Cooper, 1988). The third step is the "concept test" and here the purpose is to figure out whether the new product is a winner or not. It is essential to pursue a final test prior to

engaging into product development, which is a very costly and time consuming process. Furthermore, this is considered one of the more important steps throughout the whole FFE phase, since this can be considered the last practical test of the product and the last indication if the product is heading the right direction or not (Cooper , 1988). The last step of the concept definition is "concept evaluation"; here the final decision whether the product is a go or kill is made. If the product advances into the product development phase it gets increasingly hard to change anything regarding the product or to kill the project. Hence, this can be considered the most important part of the whole FFE phase. In addition, it is of high importance that the product is evaluated both from a financial and a qualitative perspective, often based on a financial analysis over the costs involved during development and potential earnings (Cooper , 1988). This study will solely focus on the two first steps of the process that is idea generation and preliminary assessment. This is exclusively due to the fact that it is only parts of Coopers (1988) process that fits within the proposed SCA model and within the time frame of the study.

Step	Important Features
Idea Generation	- Consist of generation and screening ideas - Listen to the customers - Utilize the sales and service groups - The purpose of the screening is to exclude only the obvious losers and misfit projects
Preliminary Assessment	- Divided into three stages - Preliminary market assessment - preliminary technical assessment - preliminary evaluation
Concept Definition	- A properly executed concept definition should generate a winning concept - Divided into three steps - concept identification - concept development - concept evaluation

Table 1, The FFE

10

2.3 Tools of Idea Generation

There have been times when innovation was something that was viewed upon as irregular. There were even people considering that innovation and management was contradictory terms (Geschka, 1986). According to Van de Ven (1986) one can see innovation as ideas that have been developed and implemented within an organization. This implicates that all innovation originates from ideas and this enables companies to have the ability to implement a higher amount of ideas and ideas of higher quality in comparison to their competitors, this will provide the company with an advantage (Francis & Bessant, 2005). According to Björk, Boccardelli and Magnusson (2010) there are several different ways of generating ideas in an organization. However, only a few will be reviewed and will be limited to the once used by SCA.

2.3.1 Innovation Workshops

The reason why Innovation Workshops is covered in this chapter is due to the fact that it is the most commonly used tool by SCA when working in the FFE phase and especially in the ideation phase. Hence, it is of crucial importance to the study.

There are several different approaches to structurally manage innovation to gain an advantage on the market. One of these is innovation workshops. The innovation workshop is a structured group effort that aims to solve one or several problems; the workshop aims to enable a creative approach to solve these problems (Geschka, 1986).
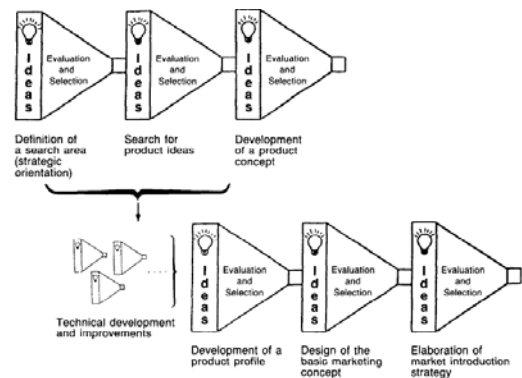
Figure 5, Ideation Model (Geschka 1986)

The basic structure of an innovation workshop is according to Geschka (1986) as follows:

- Typically runs over 1,5 to 2 days
- Involves 8 to 15 people
- Led by an experienced facilitator.

2.3.1.1 Cross Functional Groups

The selection of participants is one of the more crucial factors for ideation success. There are several different aspects that need to be taken into account in order to create a complete workshop group. Geschka (1986) states in his research that the group should be heterogeneous and it should include different competences and interests. Furthermore, if there are a clear tension between the participants of the workshop the communication between the participants may not be as good as in a group where the participants do not have an obvious tension between one and other. Since it is proven that the communication between the participants are more important than the technical knowledge of the individuals, it is more important to regard the personal chemistry rather than technical knowledge (Geschka, 1986). Moreover, there is no need to not select people from different levels of the corporate hierarchy, different levels of the hierarchy provides different characteristics. In addition, senior employees can bring experience and the perception of the workshop being taken serious and the junior employees may bring fresh thinking and broadens the organizational involvement. Hence, by including employees from different levels of the corporate hierarchy you enable the creation of a "most efficient team" (Geschka, 1986).

2.3.1.2 Potential Benefits

According to Rhodes and Thame (1988) there are several ways how to gain benefits from workshops. The first potential benefit that is mentioned is that a workshop can function like **management support**. This is beneficial in two ways, first it potentially saves time for management, and secondly it might provide knowledge to the outcome that was not possessed by management. A second potential benefit is that a workshop can provide **additional aspects on the ideas**. This can be beneficial in the sense that no one might know "the perfect" approach to this idea, so the combination of different employees' ideas can be the most efficient solution (Rhodes and Thame 1988). The third potential benefit mentioned by Rhodes and Thame (1988) is the benefit from **knowledge sharing**. This becomes a potential benefit when the workshop has the possibility to gather knowledge and information from different types of experts. These people might not normally work together; hence they probably do not share all the

same knowledge. In addition, when sharing knowledge the organization makes it possible to obtain more thought through ideas.

2.3.2 Internal Innovation Networks

The reason why Internal Innovation Networks is studied in this chapter is due to the fact that it is used by SCA when working within the FFE. Hence, it is of crucial importance to the study.

An innovation network can be defined according to Tidd and Bessant (2009 p.361) as "A complex, interconnected group or system". During the last years the concept of innovation networks has become increasingly popular, this is explained by mentioning that innovation networks offer many of the benefits of internal development while it do not expose the firm to the drawback of collaboration (Tidd & Bessant, 2009). Moreover, the innovation network is by many considered some kind of hybrid organization that has the potential of replacing both firms and markets. Furthermore, some argue that the innovation network simply is a kind of transitory form of organization that is positioned internal hierarchies and external market mechanisms (Tidd & Bessant, 2009).

2.3.2.1 Potential Benefits with Innovation Networks

According to Tidd and Bessant (2009) there are four major reasons why organizations should push for greater levels of networking in innovation. First is the **collective efficiency.** This potential benefit has its source within the fact that most companies, except for the largest, have a hard time to keep all competencies necessary in-house. Moreover, networking that is enabled within larger firms provides the possibility to access different resources through a shared exchange process. This has been proven to be successful in many parts of the world. The second major reason why to establish innovation networks are **collective learning**. A successful innovation network does not only provide the possibility to gather information and knowledge from different parts of the organization, it can also facilitate a shared learning process. In addition, within this framework partners can be able to exchange experience and knowledge, and through this increase the knowledge and insights within companies. The third

major reason to why organization should emphasize innovation networks is **collective risk taking**. When building on the concept of collective activities, the risk that each individual needs to expose themselves to while in a group is smaller in comparison to the risk each individual gets exposed to when individually carrying out a project. Hence, the willingness of exposing the project to risk is more welcomed when it is shared in comparison to when it is an individual that is exposed to all the risk. The last of the major reasons to why an organization should focus on innovation networks is the **intersection of different knowledge sets**. This incentive provides the possibility to organizations to build cross knowledge frontier relationships. This can potentially provide the organization with new stimuli and additional experience.

3. Method

The purpose of this chapter is to communicate the different choices made over how the research has been carried out and an explanation to why these choices have been made.

3.1 Research Philosophies

According to Saunders, Lewis, & Thornhill (2009) research can be compared to an onion (appendix 1). Before gathering the data it is of high importance to "peel off" the other layers, in order to secure a sufficient result. The first layer is the one referred to as philosophies and it consists of four different philosophies, which can be used. These four philosophies all are designed based on assumptions regarding how the world is considered, and this will be regarded as the foundation for the framing of the research strategy and choice of method. The four different philosophies are positivism, realism, interpretivism and pragmatism.

This study has its focus on the appreciation of a newly developed process, people's perception of this change and how to further develop the process. Hence, since persons and not material are being studied, the pragmatist approach is the correct approach and will be the foundation to choices regarding choice of method and research strategy. The pragmatist approach referred to as the link between practice and theory. The pragmatist regards the research question as the primary deciding factor to which of

epistemology, ontology or axiology are to be used in the research. Moreover, if a research does not immediately acknowledges whether it is of a positivistic or an interpretative approach, the pragmatic approach is the primary approach that should be regarded as suiting (Saunders et al, 2009).
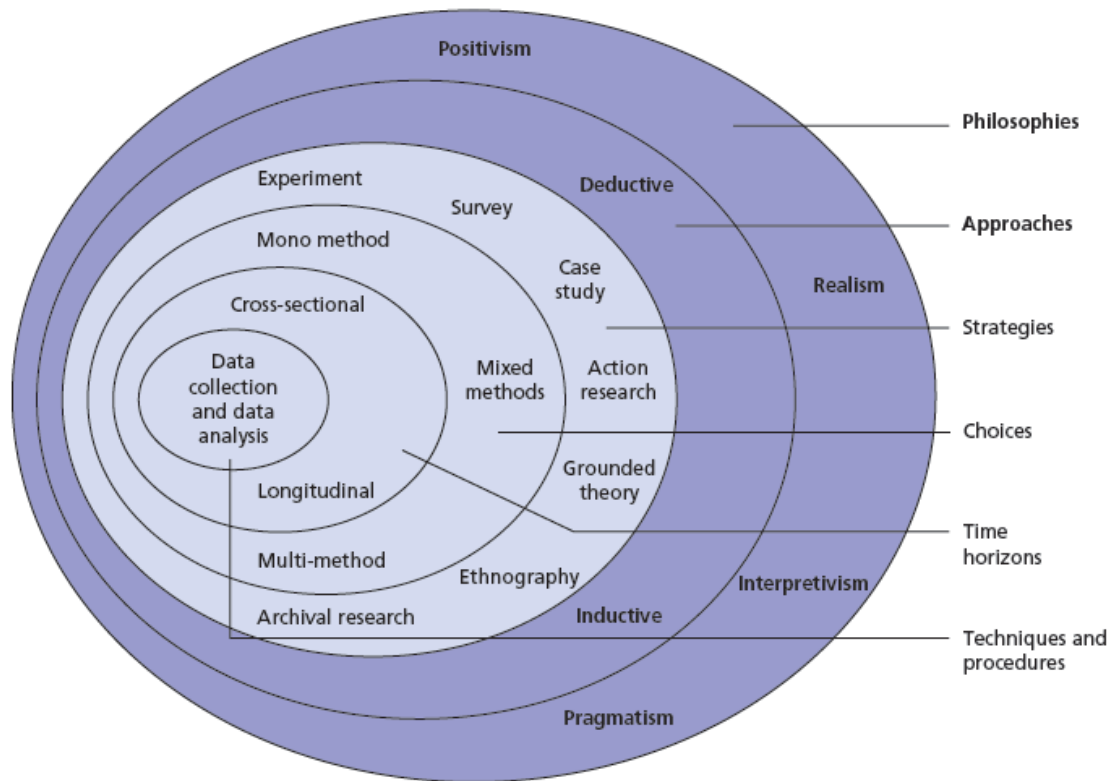
3.2 Research Approach

The second step is according to Saunders, et al (2009) the research approach. This study will use an inductive approach. The most contributing factor to why the inductive approach is best suited is due to the social factors that will be of importance to the outcome, such as behavior during workshops, the effect of hierarchy during the workshop or peoples willingness to adapt to the change. In addition, there is limited research to use as ground and hence the data collection needs to be carried out before stating a hypothesis (Saunders, et al, 2009).

When using the *inductive* approach the researcher strives, without any expectations, to gather as much data as possible. Unlike the deductive approach, the theory is not established until the data is gathered and analyzed, i.e. when using this approach you

go from empirics to theory. Hence, the process is the opposite of the deductive approach. However, the strength in the inductive approach is that it takes social factors of a case into consideration, and do not limit the scope to mechanical objects.

3.3 Study Design and Strategy

There are according to Saunders et al (2009) three different ways to design a study. These three are exploratory, explanatory and descriptive. A study which applies an exploratory design is primarily used to understand a specific problem. If a study adapts a descriptive design the purpose is generally to plot a certain process or organizational behavior. The third study design, the explanatory design, is most often used to explain or detect a correlation between different variables, or to dismiss the notion that there is a correlation.

The purpose of this study is to explore with interviews certain characteristics which have influence over the amount of ideas generated during the ideations and how many passes through the screening process; hence this study will adapt an exploratory approach (Saunders, et al, 2009).

Since this study aim to explore what different characteristics have the largest influence on the amount of ideas that pass through the screening process from the idea generation, it is suiting to use a case study approach. In addition, a case study approach is distinguished by the focus on one single entity. These entities can be limited both in space and time. Further, the limitation regarding time concerns within which timeframe the research is of interest. Moreover, the limitations regarding space limit the study concerning levels. There are different levels, the lowest is individual and the highest reflects for example a whole organization (Jacobssen, 2009).

3.4 Data Collection

The primary source of information in this study will be interviews and ideation observations. This is due to the fact that it has been described as the most suiting way when applying a qualitative approach where it is need for in depth knowledge (Saunders, et al, 2009).

According Saunders et al (2009) data collection is primarily divided into two different groups, primary data and secondary data. In addition, the collection of primary data is usually collected through interviews, observations or surveys. The collection of secondary data consists of three different sub categories, documented, multi-source based and survey based.

In addition, since this study aims to explore what ideation characteristics has the most effect on the outcome, and since the foundation of the study is based on already existing research, there is need for additional primary data. In order to be able to further explore the subject of the research, interviews and observations has been carried out in order to collect data. Moreover, the interviews carried out will be semi-structured since the research needs all different aspects on the subject form the interviewees. Furthermore, there will be an interview guide with the purpose to not forget to ask any crucial questions or forget to touch upon any critical subjects (Jacobssen, 2009).

3.5 Time frame

When discussing times frames regarding research there are two different approaches, cross-sectional and time-series study. A cross-sectional study means that the research occurs at a specific point in time. This type of study primarily regards quantitative studies. A time-series study rather detects development or change over a specific time; hence this approach is more suiting when performing a qualitative study since it concerns cause and effect (Saunders, et al, 2009).

Since this study aims to detect what impacts the FFE phase output, it will apply a time-series approach.

3.6 Sample Collection

The aim of this study is to detect what characteristics during ideation that has the biggest influence on the outcome, hence it is interesting to interview people involved within these activities. Moreover, it is highly likely that there are different features differentiating different companies and different industries.

Research states that there are not a specific number of interviews that are best suited for qualitative research. Nevertheless, there is a need for an amount of interviews sufficient enough to obtain the preferred result (Kvale, 2009). In this case study there is a specific unit within SCA that has been researched, Global Hygiene Category Away From Home Professional Hygiene, which acts as a global function that provides the different business units in different regions with suiting products, services and assists with business model related matters. There are currently about 60 persons within this unit, of whom about 40 are working with innovation and ideation which are the only once interesting for this study. Below follow a definition over the different categories of interviewees are presented.

3.6.1 Interviewees

This case study is based on Tork Global Hygiene Category Away From Home Professional Hygiene, a part of the publicly traded swedish company Svenska Cellulosa AB. The researched unit has about 60 employees, stationed in Sweden, France and the United States of America.

Below, the different categories of interviewees are presented. These currently withhold different functions and are in different parts of the hierachy. The different interviewee categories are:

- Global Technical Innovation Managers
- Global Brand Innovation Manager
- Arena Diretors, which are the head of the different units.

3.6.2 Innovation Teams

The unit that has been the targted for the research consists of four "arenas" which are the different branches of the unit. Each is managed by an Arena Director. Each of these arenas consist of a few innovation teams which have specfic areas of responsibilitiy. In addition, these innovation teams usually contain one Global Brand Innovation Manager and two Global Technical Innovation Manager.

3.6.3 Global Technical Innovation Manager

The Global Technical Innovation Manager has the technical responsibilities within an Innovation Team. These responsibilities include product development, product functionality and that product design and functions are in line with corporate and arena strategies.

3.6.4 Global Brand Innovation Manager

The Global Brand Innovation Manager has the brand and marketing responsibilities within the innovation team. These responsibilities include increasing brand awareness, market research , profitability analysis, and developing brand strategy in line with corporate and arena strategy.

3.6.5 Arena Director

The Arena Directors responsibilities are to lead the Arena. With that follows responsibilities regarding technical and monetary out-come, team management and the arena performance.

3.6.6 Participation

As can be shown in the chart below there was a total of 89% of the potential interviewees that accepted to be interviewed. Moreover, the rate of aceptance in each segment was quite similar. Still, the percentage was somewhat lower amoungs the Global Brand Innovation Managers. Furthermore, these persons was not in the country during the span of the interviews and hence could not participate. Moreover, there was no specific characteristics that stood out in comparison to the other interviewees amoungs those who could not attend.

Title	Inquiring	Interviewed	Share
Global Technical Innovation Managers	22	21	95 %
Global Brand Innovation Managers	13	10	77 %
Arena Directors	2	2	100 %
Sum	37	33	89 %

Table 2, Interviewees

3.6.7 Interviews

There were 40 potential interviewees, 35 participated in the study. In addition, this is a very good ratio considering that people at this level within the hierarchy are generally very busy. The reason to why only 35 out of 40 participants could attend the interviews was due to the fact that the remaining potential interviewees was traveling during the time of the interviews.

3.6.8 Observations

The sample for the observations will be different from the interviews. The sample here will be somewhat smaller since not all units within the organization is planning any FFE activities. So the sample here will be the employees working with innovation and who's unit is planning on carrying out FFE phase activities. Moreover, there will also be people that are not in the researched part of SCA attending the workshop as well as external resources; these are mainly added for their specific competence. There are two units that are planning on carrying out FFE activities and these are the ones that will be observed throughout the FFE phase.

3.7 Reliability

There are two different ways to secure the quality of a study: validity and reliability (Merriam, 1993). Moreover, these two factors are important in order to critically review the results of a study, this in order to be able to generalize the results. The reliability is describing how credible a result is; practically this is measured through evaluating if the result is the same at several occasions (Merriam, 1993). However, there are threats towards the reliability of a study. The first potential threat is the fact that a phenomenon can change between different times, that the interviewee does not answer honestly, difficulties regarding observations and difference in how interviewees was effected by the interviewer (Robson, 2002). Moreover, some argue that it is hard to apply this theory regarding qualitative studies; this due to the fact that it is impossible to recreate the exact same conditions for each interview (Merriam, 1993).

To secure against the four possible threats (Robson, 2002) some actions have been taken. There is an interview guide with guidelines for the interviewer for the semi-structured interviews, this to minimize potential differences between different interviews. Moreover, the interviews have been held within the same building and similar times, this is in order to create an environment similar to each interview. In addition, all interviewees were granted anonymity at the start of the interviews, this so the interviewee would not feel that there was an obstacle of providing a correct picture of the situation (Robson, 2002).

3.8 Validity

Securing the validity of a study is done through strengthening the quality of the study; meaning that the study is relevant for the area that is being researched. Moreover, there are two types of validity, internal validity and external validity. Internal validity regards the results that have been achieved. The internal validity can be strengthened in two ways, compare to other research and conclusions and critically review the results. In other words, the key in this way of securing validity is to confirm that the right variables have been researched (Saunders, et al , 2009, Jacobssen, 2009).

External validity regards the possibility of data and results from research to be generalized on a population (Saunders, Lewis, & Thornhill, 2009). It is hard to create circumstances to generalize while conducting a qualitative study, due to the limited number of interviewees contributing to the study. There are two potential ways to potentially generalize when conducting qualitative studies. The first is to choose typical sample. Typical sample reflects how the typical individual within the group that is beeing researched is. The other way is to use extremes in the sample (Jacobssen, 2009).

There have been actions made in order to strenghten the validity of this study. For example, the interview guide has been examined by several knowledgable persons and refined after their recommendations. Moreover, the results of the interviews and the study has also been reviewed by knowledgable individuals in order to be able to secure validity.

4.   Interview findings

In this chapter the results from the data collection will be presented. The results that are to be presented will not be either analyzed or interpreted within this chapter. The primary data that will be presented in this chapter have exclusivly been gathered through interviews. The data will be presented in the same order as the SCA FFE phsae (Figure 2). The first three paragraphs regards the past, how the work has been done, and the last six regardsw what is important in each step of the new SCA FFE phase (Figure 2).

4.1 Interview Report

The interview report is based in the semi-strucutured interviews carried out with a selected sample at SCA. The findings from the observations is also included in each of the categories, these observations has been made on work shops, meetings and other occations that provided insight into what the interviewees considered important.

In addition, the different questions was asked without providing any examples of answeres, this was made in order to influence the interviewee as little as possible. The purpose was to get the interviewees view and opinions within the subject.

The first three questions that are regarded within this chapter covers questions that can provide the information that can provide an insight into how SCA currently are working within this phase and what the people working within this phase thinks is important within the phase. Moreover, the last six questions follows the provided new SCA process (Figure 2) within the FFE phase, and step by step will be covered in order to study what is considered important in each step to later make two project groups with different characteristics that are based on the interviews and the theoretical frameworks.

4.2.1 What has the largest impact on the output?

According to the interviewees there are a several main factors that have large impact on the outcome ,the amount of ideas that manages to pass the screening and proceed into the development, from the early stage development. There were two factors that according to the interviewees have the largest contributors namely management support, and market potential and a clearly defined potential. Additionally, management support is mentioned in two different settings. The first was that management support was important due to the fact that if management showed support it meant that this task was important and that management engagement brought substance to the project. The other way that management support was important was through formal acknowledgement. If the work that was carried out was not formally acknowledged and not a part of employee performance measurement, it was not considered important.

An additional factor that was mentioned as most important was cross functional involvement and experience. This was mainly mentioned in a sense that it added comfortability and trust in the other project members that these had both the competence and experience from similar activities. This was also actually mentioned in two ways: first that with experience and competence came trust in the project members, and that the members of the project teams were capable of performing the activities that were included in the project.

Another factor that was mentioned as important was market potential and that there was a clearly defined potential. In this phase the market potential was important in order to be able to internally market the solution. Hence, according to the interviewees a potential product with a clear market potential was easier to develop throughout the pre development phase in comparison to a product with a not as clear market potential.

In total 12 different things that had large effect on the amount of ideas passing through screening into development was mentioned during the interviews. The three that had over ten interviewees responses is mentioned within the table.

The things that have the largest Impact on output	Responses	Share
Management Support and Time Committed	18	58%
Market Potential and Clearly Defined Potential	17	51%
Cross Functional Involvement and experienced	10	30%

Table 3, Largest Impact on Output

4.2.2 Strengths and weaknesses

This question regarded what the strengths and weaknesses were when reviewing the current way of working in the FFE, and according to the answers we can conclude that there are currently no sufficient and structured process that can assist the SCA employees with their work within the FFE phase. This question provided a somewhat wide span of different answers. The factors that were mentioned as the largest strengths were customer understanding and in-house competence. Moreover, the customer understanding strength consists of both existing market research and customer insights as well as a solid understanding of customer behavior. This was referred to as the source to being a strong competitor on the market and being able to further develop the SCA brand and business, so interviewees considered customer understanding crucial within the FFE phase. In addition, the in house competence was also considered a highly important strength. This was according to the interviewees both essential when it came to being able to trust the performance of colleagues and having the ability to provide high standard solutions within their fields. An additional strength that was mentioned was that the SCA generally is an open-minded organization where all ideas and initiatives are appreciated.

Further, when it came to weaknesses there were two weaknesses that stood out from the rest. The largest weakness according to interviewees was the absence of a clear and well defined structure of how to work in the FFE phase. The FFE phase has upon till now not been managed or standardized and the responsibility has been with the project owners and members. Interviewees mentioned that the lack of a structured model is the main weakness of the current FFE phase. In addition, the second weakness that stands out in comparison to other answers is that the FFE phase currently is very time consuming and in-efficient.

In total 15 strengths and 14 weaknesses concerning the current FFE phase was mentioned. Those that are presented in the table are those that clearly stood out in comparison to the other answers.

Strengths	Responses	Share

	Responses	Share
Open-minded and customer oriented	18	58%
Knowledge and existing material	13	39%
Weaknesses	**Responses**	**Share**
No sufficient tools	18	58%
Inefficient and time consuming	14	42%

<div align="right">Table 4, Strengths and Weaknesses</div>

4.2.3 How Can the Current FFE Phase be Changed?

There was one thing that clearly stands out when it comes to what the interviewees see as potential changes. This was to implement a structured method to help the employees working in the FFE phase. This was emphasized here as a key to being productive and being able to get good ideas into the funnel. Moreover, other changes that were proposed were better possibilities for market research. Market research was described by many as important during the FFE phase. Good possibilities for market research are considered important to be able to understand the customer and market when developing in the FFE phase. Another thing that was mentioned by some interviewees was that the work within the FFE phase should be more in-line with the strategy of the company and with the brand. Interviewees emphasized that this was important since it was important to include strategic and brand focus at an early stage.

There was 14 different changes proposed during the interviews, but the one that clearly stood out was to implement sufficient tools to help manage the FFE phase.

Proposed changes	Responses	Share
Implement a sufficient method	20	61%
Better possibilities for market research	9	27%

<div align="right">Table 5, Proposed Changes</div>

4.2.4 What is Important when Setting the Strategic Foundation for the FFE phase?

When it comes to what is of the highest importance when managing the strategic foundation for the FFE, the strategic foundation can be defined in this case as what strategic material and guide lines that are to be included in the FFE phase. What most of the interviewees answered on this question was that what is most important is to

have a very clearly defined strategic directions and innovation goals. There were several different suggestions to why this was of high importance, but those that were most commonly mentioned were that this could have effects on the outcome from the FFE phase and that if there was strategic material and strategic directions available when entering the FFE phase this could be a factor decreasing the mentioned time waste. Another factor that was mentioned as important here is that management provides the necessary support. There was different reasons to why this was important, but those that stood out were project legitimacy, that management support communicated that the project was of importance, and the second thing that was mentioned by several was that management support and directions can save time by not having to change anything during the project since the foundation is set early in the FFE phase.

During the interviews 10 different important factors while setting the strategic guide lines and settings was mentioned.

Strategic foundation	Responses	Share
Clearly formulated strategy and innovation goals	16	48%
Management support	10	30%

Table 6, Strategic Foundation

4.2.5 What is Important when Deciding where to Innovate?

The answers to this question focused on different factors that are important to acknowledge when deciding on where to innovate, this can be a market, a product segment or a potential business plan development area. Business potential was the factor that most interviewees considered important. Moreover, the main reason to why business potential was mentioned as the most important factor to acknowledge when deciding on where to innovate is due to the fact that the bigger the potential the bigger the possible outcome. Furthermore, interviewees also recognized that it is important that the potential market is well defined and that the potential market is in-line with strategic directions.

During the interviews 20 different factors that was considered important when evaluation where to innovate was mentioned. The answers to this question was somewhat clustered but there was two answers that stood out and these are presented in the chart below.

Opportunity selection	Responses	Share
Well defined market and market potential	14	42%
Business potential	12	36%

Table 7, Where to Innovate

4.2.6 What is Important when Planning Ideation Activities?

At SCA workshops are generally the most common tool for ideation; this type of activity can be defined as an idea generation tool. In this category there was one answer that clearly, according to the interviewees, was a large contributor to innovation activity success. Cross functional teams was considered the most contributing factor to a successful innovation activity planning. Moreover, most interviewees mentioned that this was important both from a national perspective, that innovation activity attendees are acting in different countries, and from a competence perspective, that attendee competencies complement each other. Moreover, other factors that were mentioned as important were to also include a professional facilitator in the planning phase, this in order to secure that the right activities were chosen for the ideation and that the purpose of the ideation is clear and also how to achieve this purpose.

During the interviews 11 different factors was mentioned on what was important to account for or to include when planning ideation activities. Those that are mentioned in the chart below are those factors that more than 10 people considered important.

Important planning criteria	Responses	Share
Cross functional teams	18	55%
Clear purpose and planned activities	18	55%
Managing facilitator	12	36%

Table 8, Ideation Planning

4.2.7 What is Important During Ideation Activities?

During the ideation activity the interviewees considered that a professional facilitator was the most important factor for ideation success. Moreover, the ideation facilitator was mentioned as a vital tool to enable the ideation to achieve the goals and to get the attendees on the right track towards these goals during the ideation activity. In addition, a creative environment was also strongly emphasized as an important factor in ideation success. Some even referred to it as crucial in order to be able to develop strong and innovative ideas.

During the interviews 13 different factors that are important to account for or to include when running an ideation activity. The two mentioned factors are those that quite clearly stood out in comparison to the rest of the answers.

Important during ideation	Responses	Share
Facilitator that manages the work shop	16	48%
Environment	15	45%

Table 9, Ideation Workshop

4.2.8 When Screening Ideation Results, What is Important?

When it comes what to prioritize when screening potential ideas after the ideation process, there were a few factors that the interviewees considered as more important. Business potential was mentioned as the most crucial factor to look to when screening ideas. Moreover, business potential was mentioned both from potential earnings per unit perspective and a market size perspective. Another thing that should be prioritized according to the interviewees was if the idea possessed a low complexity and high "do-ability". This was important since this was considered a low risk alternative and had a high potential of reaching the market.

During the interviews 14 different factors that could be used as deciding tools was mentioned. However, Business Potential and Low Complexity clearly stood out in comparison to the rest of the proposed factors.

Important screening factors	Responses	Share
Business potential	16	48%
Low complexity	13	39%

Table 10, Ideation Screening

4.2.9 What is Important When Conceptualizing Ideas?

When regarding the conceptualizing of ideas a few things stood out in comparison to the rest according to the interviewees. The most important factor when conceptualizing was to show proof of understanding the product and the customer segment. This was considered important mostly due to the fact that a lot of interviewees considered this a very important feature when it comes to the development of ideas. Another feature that was considered important in this step was to be able to visualize the proposed product, through virtual or a physical prototype. This is considered important since this makes to future development of the product simple.

During the interviews 14 different factors that was considered important when conceptualizing an idea was mentioned. The one that clearly stood out was to be able to show a solid understanding for the idea, the factor that was mentioned as second most important is also shown down in chart, this even though being able to visualize the product had no more than 7 persons mentioning it as important.

Conceptualizing ideas	Responses	Share
Show understanding the product	18	54%
Visualize the product	7	21%

Table 11, Conceptualizing

5. Observation Findings

As means to answer the research question, four different factors that stood out in from the theoretical framework and interviews have been chosen as base for designing the FFE phases. Moreover, these FFE phases was then carried out by two project groups and observed by the researcher. In this chapter observations for both groups will be find and in addition the analysis drawn from the observations, interviews and theoretical framework.

5.1 Observed Groups

During the observation the observer took a passive role, the reason to the passive role was to be able to get a holistic view and to make observations of the whole group and the surroundings. If the observer was to take a more active part in the ideation it could have exposed the observer to the risk of missing observations due to being occupied.

The observed group's FFE ideations were based on input from the interviews and the theory that was presented earlier in the study. Hence, the different main characteristics that are used in the workshops are those that were emphasized in the interviews and the theoretical framework. The conditions on which the FFE phase and the ideations were based are presented in the chart below.

Group One	Group Two
Large group	Smaller Group
Cross functional Group	None Cross Functional Group
Applied Innovation Network	Did not apply Innovation Network
Had a Professional Facilitator	Had no Professional Facilitator

Table 12, Chosen Factors

5.2 FFE Phase Observations

Prior to the FFE phase decisions was made in order to be able to detect what different influence different factors have on the output from the FFE phase. In this chapter the observations from the FFE project groups will be presented.

5.2.1 Group Size

According to Geschka (1986) the ideal size for a workshop are 8 to 15 attendees. Considering that the ideation and a lot of other activities within the FFE phase was carried out in in workshop form, this is an interesting statement and something worth reviewing.

5.2.1.1 Group One

Group one was the larger of the two and consisted on in total 30 persons, both internal within the category and external competencies, from other parts of the organization with necessary technical and brand competences. Throughout this workshop the whole group was divided into smaller groups, four different groups between seven and eight persons in each. This action was carried out by the professional facilitator whom had experience with similar sized groups. Moreover, due to the fact that the whole unit was divided into smaller groups the unit had limited time as the whole group. The fact that the whole group was divided into smaller groups worked well for some groups, these groups appointed a leader, set a goal and a plan how to reach this goal and then started working. However, this did not work as good for all different groups, some groups could not establish leadership and got stuck in a very early stage and this led to the group having less time to work on the ideation.

Another issue that clearly stood out was that all groups interpreted activities differently. Since there was no possibility for the facilitator to help all groups individially during each activity some groups was working in the wrong direction in comparison to other groups.

Another thing that was acknowledge during the observations was that some of the work shop atendees did not provide as much as others. This likely depend on that some of the atendees did not prepare sufficiently or they did not see any reason to provide since there was already doing the work for them.

5.2.1.2 Group Two

Group two was the smaller of the two groups and consisted only of eight individuals, exclusivly internal personel. This workshop varied between activities for the whole group and activities in smaller groups. This initiative enabled all workshop atendees to

get involved in all the potential ideas and provide perspective and their thought on how the idea could be further developed. When divided into smaller groups the work went fine, there was however not a specific leader appointed in any group. The reason why the groups did not attend a specific leader likely depends on the fact that they are all working together on a day to day basis and hence already know eachother well.

Since there was only eight people attending the workshop there was no problem with interpretation of the activities. The groups had an open conversation regarding the activities and could easily get on the same path due to the dynamic possilitiy of communication.

Since there was only eight people ateending the workshop eeverybody was obligated to provide to the discussion and to the ideas. In comparison to the other groups where the people had the possiblity to hide behind the other atendees.

5.2.1.3 Analysis

As mentioned in the theoretical framework, an optimal group is between 8 to 15 people Geschka (1986). The amount of atendees in groups two (8) did match the teoretical reference, however group one (30) did not match the teoretical reference, quite frankly they were far from it.

Two of the biggest benefits with working with a workshop strucutre is according to Rhodes and Thame (1988) knowledge sharing and that atendees can provide additional perspective to ideas, these two factors were supported through the interviews. However, knowledge sharing requires that all work shop participants engage in each others work and provide perspective and insight. This opportunity could not be fully enabled in group one due to the fact that the facilitator felt the need to divide the group into smaller group for the workshop to be efficient. And following that the groups was divided only a small part of the workshop atendees could take part of other atendees knowledge and could not get the feedback from all the atendees of the workshop. And to be able for the workshop atendees to be able to provide additional perspective and insights on other atendees ideas they need to engage in and gain insight into the other persons ideas and the motivation. It was identified that the smaller group all could engage in eachothers ideas and understand them. The case in the larger group was not

the same, the atendees could only engage and understand a limited amount of peoples ideas and provide reflections on these.

Group two though could, due to their smaller size, easily share knowledge and experience with the other atendees. This was clearly emphisized since between the different activities there was a discussion on what the group though of the process of the workshop atendees and was given the oportunity to provide feed-back. This had the sole purpose of engaging all atendees in everyones ideas.

Group One Observations	• Workshop atendans : 30 persons • Divided into smaller groups during workshop • Varied quality of work in smaller groups • Lack of possible facilitator assistans • Variation in amount of effort commited from atendees
Group Two Observations	• Workshop atendans: 8 persons • Divided into two groups during ideation activities • High quality of work in smaller groups • Hihg interaction from facilitator • All atendees commitied similar amounts of effort
Analysis	• Knowledge sharing and additional perspective are important outcomes from ideation work • Group one could not fully gain the benefits due to the group size • Group two could potentially fully gain the benefits through their groups size.

Table 13, Summary Group Size

5.2.2 Cross Functionality

According to Geschka (1986) it is very important to have a hetrogenus group with persons from different backgrounds and have different interessts. According to Rhodes and Thame (1988) there is no one that has the "perfect idea", so cross functionality provides the possibility to get more perspectives on a potential idea. This is why it was included in the research to have one group with cross functionality and one without.

5.2.2.1 Group One

Group one was a widely cross functional team. The team consisted of both persons from different functions within the company and came from different nations possessing different market specific knowledge. Through this the ideas that came out from the ideation and the FFE phase was shaped by several different aspects, demographic knowledge, development experience and out of the box thinking, that was enabled through the groups cross functionality.

The first group had a lot of discussion regarding their potential ideas. The discussion regarded market potential, technical do ability. The different persons within the groups had often different views of the potential of an idea and how they thought it should be done. These views often reflected their positions and their expertize.

5.2.2.2 Group Two

Group two was not a cross functional group. The group did only consist of persons within the own Innovation Team and only with personnel from two different markets and nations.

Within this group there was not as much discussion as in the other group. The workshop attendees did often agree on the different ideas, the only discussion that came up was when a marketing person proposed an idea the technical persons reflected over the idea from a technical standpoint and when a technical person came with an idea the marketing persons reflected over the idea from a marketing standpoint. However, there was not much more discussion than this.

5.2.2.3 Analysis

According to (Geschka, 1986) the selection of participants for a workshop is very crucial part for workshop success. In addition, the interviewees emphasized the importance of the group composition to get successful workshops in a FFE phase. Moreover, a thought-out group composition often indicates cross functionality. Further, it is here the discussions take place in the ideation, which arises when all attendees do not share the same view and perspective.

In group one that had a wide variety of people, there were a lot of discussions within the groups. These discussions covered the areas of market potential, technical do

ability and brand challenges, among others. One thing that was clearly noticed was that it occurred a lot of discussions and these were based on the topics that were most commonly discussed, market potential, technical do ability and brand challenges. But they discussed this from different perspectives, this due to the fact that they possessed different experience. This is one of the identified benefits with cross functional and had great effect on the group dynamic and idea development, however in this case even this was somewhat limited to the fact that the group could not enable all attendees to interact with one and other. Moreover, group two was the more homogenous group of the two; it consisted only of colleagues from the same unit. Furthermore, since the group is as homogenous as it is, it should according to the theory of Geschka (1986) limit the amount of perspective within the project groups and through this limit the discussion. There was a clear difference between the two groups regarding the discussion about the potential future ideas. The second groups' workshop consisted of a lot less discussion regarding additional perspective in comparison with the other group. Since they all come from the same unit, study the same material and share the same knowledge the development got quite one dimensional.

Group One Observations	- Widely cross functional - A lot of discussion - Discussions regarding market poetntial, technical doa-bility and branding - The thoughts of the atendees often reflected their background and experience
Group Two Observations	- Not widely cross functional - Not a lot of disscusion - Discusions regarding market potential and technical doa-bility - The reflections of the atendees was based within their respective field, marketing or technical.
Analysis	- The selection of atendees is a crucial part in order to gain success - Discussion is a sign of cross functionality - Discussions arose in group one but not in group two to the same extent - Less additional perspective added in group two in comparison to group one

Table 14, Summary Cross Functionality

5.2.2 Applied Innovation Network

Ideas are generaly created by individuals, but these ideas often needs to be developed in cooperation and interaction with others (Nonaka, 1994). And since it is a subject that has gotten more attention and has a potential to affect the FFE outcome (Tidd & Bessant, 2009) it is of interesst for this research.

5.2.2.4 Group One

Group one applied an Innovation Network approach and added people for support from an innovation function from the organization, to add additional knowledge. These persons that was added as additional resources all had first hand experience from working with similar activities and had experience from the theoretical framework that was used.

Moreover, the persons with a theoretical background assisted in making the ideas more detailed and well thought out, this was due to the fact that they provide an additional aspect to the ideaation.

What could also be acknowledged in the workshop was that the workshop atendees learned from eachother and applied this into the activities. This was enabled through the interaction between persons with different background and competences.

5.2.2.5 Group Two

Group two did not apply a Innotavion Network and just used internal resources. Through this the group got more homogenic and through this lost a potential of rearching additional width. Especially when it came to a theoretical appraoch the group lacked experience and knowledge, this could have been beneficial in combination with their current practical product development experience.

Since there was no diversity rather all the atendees was possessed quite the similar competences there was limited learning between the atendees. This limited the potential to have succesfull ideations in the future since there was no theoretical knowledge shared to this unit.

5.2.2.6 Analysis

It was only group one that applied the innovation network that exist internally in SCA and that exists with the purpose to provide innovation experience and knowledge to project groups. These groups can assist in several different phases throughout the FFE process, in project ones project they took help both during planning and throughout the workshop. The main benefit that was identified when using the internal innovation network was that they could help gain benefits from group dynamics through their experience. The internal innovation network did help in the planning to ensure that the benefits could be enabled, these benefits are sharing of knowledge, competence selection and to gain efficienct through collective efficiency.

Group one that used the internal innovation network enabled the benefits that can be gained through a workshop, and this was made possible in assistance of the internal innovation network. The second group did not apply the internal innovation network within the planning or the execution of ideation, and this showed clearly in the workshops. The group never got the possiblity to take advantage of the different benefits that the internal innovation network can help groups achieve. One thing that was center for the observations and can be considered one of the main findings is that the internal innovaiton networks was one of the sources for the different main benefits that can be enabled through workshops, knowledge sharing and additional perseptions of ideas. And it showed during the observations for the two groups that the circumstances was very different for the two, group number one was able to achieve the different benefits while the second group was not and of all differences that made an impact the usage of internal inovation network was one of those that had the largest impact. The internal innovation network did have a large impact due to the fact that it can be considered the foundation of these four factors that are mentioned, at it clearly shower during the ideation workshops how group one could enable knowledge sharing and provide additional aspects to the other group members in a sufficient way while the second group could not do this to the same extent.

Group One Observations	- Applied internal innovation network - Added people with experience from FFE phase work - Learnead from eachother
Group Two Observations	- Did not apply a internal innovation network - Had people from the own unit exclusivly - Shares experience and knowledge

Analysis	- Assists both during planning and ideation workshops - Group one whom used the internal innovation network had better conditions to potentially gain the benefits that ideation workshop can provide. The internal innovation network contributed greeatly to this - The internal innovation network is considered one of the most contributing factors that can assist in gaing the potential benefits with ideation workshops

<div align="right">Table 15, Summary Internal Innovation Network</div>

5.2.3 Professional Facilitator

According to (Geschka, 1986) it is important that a professional facilitator leads the workshop. This is in order to maintain control over the quality of the discussion and make sure that the discussion is on the right level.

5.2.3.4 Group One

The first group had a professional facilitator that led the workshop and had also assisted in the preperations of the workshop, this in order to enable the best possible situation in relation to the goal of the day.

During the day the facilitator introduced the objectives in cooperation with the director for the unit that was responsible for the workshop. There was a clear communication regarding what the goal and purpose was of the day and what was expected of each and every atendee.

During the activities the facilitator seemed very well prepared and clearly explained the purpose of each activity. However, since there were missunderstandings within the different smaller groups regarding what was the purpose the instructions must have been unclear to some extent. And since is was sucha big group it was hard for the facilitator to assist all groups during the activities since these was between 15 – 30 minutes each.

Moreover, the activities that was carried out during the day was easy to realate to the goal and the purpose of the day. This was due to the planning of the workshop.

5.2.3.5 Group Two

Group number two had a facilitator that had no prior training as a facilitator. The facilitator also participated in planning the workshop, the facilitator did not have any prior experience from participating ideation workshops.

The introduction was held soley by the facilitator whom clearly instructed the atendees what the goal and purpose was, this was clearly communicated. The reason to why the facilitator, even though the facilitator beeing novis, clearly could communicate purpose and goals most likely depends on that the facilitator have had personel management responsibilities. Moreover, this experience can have enabled the facilitator to clearly communicate the foundation of the workshop.

During the workshop the facilitator seemed quite well prepared, how ever some activity purposes was not clearly understood by the facilitator and was hence not communicated very clearly. However, this could be solved during the activities due to the small sizes of the groups within the workshop.

5.2.3.6 Analysis

As was identified during the observations, the performance of the facilitator had no real effect during the ideation workshop, the two groups was somewhat equal in this regard, but when it came to ideation planning the group that had a professional facilitator ateending the planning had an advantage incomparison to the other group.

It was as Lincoln once said, "if you give me 6 hours to chop down a tree I'll spend the first four to sharpening the axe" and this communicated importance of preperation was indicated during the observations. Throughtout the planning for group one a professional facilitator participated in the work. Throughout the whole planning process and contributed with his experience from this type of work. Throughout the whole process everything was very focused on combining the wished outcome of the ideation and the stretegy of the whole FFE phase. And through this the ideation workshop was very focused and designed on the prefered outcome from the ideation workshop. This initiative helped to better be able to design the ideation workshop to ensure results that is in line with the expectations.

The second group had a facilitator that took part in the preperations had no experience from planning workshops, however he had experience from atendeeing workshops. Throughout this planning process it was less focus on trying to connect the strategy of the workshop and the prefered outcome, the preperations here was a more ad hoc and activities for the ideation workshop was less tailored for the conditions of the workshop.

Throughout the ideation workshop the most important part for the facilitator is to be able to communicate the objectives of the workshop and to keep the discussions on a correct level, not going to deep into detail which is not the purpose in this stage. However, during the workshop there was no sign that the trained facilitator made the condition superior to the other group.

Group One Observations	- Used professional facilitator - Facilitator participated in preperations for the ideation workshop - Professional facilitator participated during the ideation workshop - Well prepared and could clearly explain the purpose
Group Two Observations	- Had a non professional facilitator - The non professional facilitator participated in the workshop planning - The no professional facilitator participated during the ideation workshop - The facilitator was well prepared but could not explain the purpose of the ideation workshop to its full extent
Analysis	- No special difference between the professional and non professional facilitator during the ideation workshop - The professional facilitator could better match the prefered outcome of the ideation workshop with the content of the activities which lead to more suiting activities

Table 16, Summary Facilitator

5.3 Idea Generation Results and Screening

The two groups had a number of ideas as outcome from the workshop and then there was a smaller group that performed a screening process on the ideas and decided which could continue and be further developed. The situation was as below:

Groups	Group One	Group Two
Idea Generated Pre Screening	10	18
Ideas Post Screening	6	9
Share of Accepted Ideas	60%	50%

Table 17, Results from Ideation

As we can tell from the table (Table 17) group one of had a slightly higher acceptance rate in comparison to group two. However, group two developed more ideas and had more ideas entering the development phase in comparison to group two.

When analyizing the figures and the acceptance grades of the two groups, a few things stand out. Primarily, group two, who lack cross functionality, have a lower acceptance rate but have more ideas that have passed through to development. However, this can depend on the fact that group two lacked cross functionality and the ideas developed are one dimensional, hence a lower acceptance grade in comparison to group one.

Moreover, since more ideas was provided into development from group two in comparison too group one, a few analytical points has been made. Primarily, since the group did not have too start the ideation workshop without knowing one and other this helped to obtain productivity right away. Secondly, since the groups was homogenus and did posses the same experience and perception to a large extent this disabled the discussion that arises when a group is cross functional and hence more products could be generated within the workshop.

5.3.1 Screening Observations

The screening process differed somewhat between the two groups. Group number one invited a few of the atendees from the workshop to also take part in the selection of ideas. This process was divided into two parts, the first was to cluster ideas that overlapped and the second part was to decide on which ideas to continue working with. The selection of atendees was based on which of the people that had time for this time consuming process and at the same time possesed the nesecarry competencies. The clustering part of the screening process consisted of discussion and no specific tools was used, when the clustering was done these ideas entered the actual screening process. Here a newly developed more standardized way of working was applied. The ideas was scored on two differrent categories and then measured againt eachother, these two factors was strategic fit and market potential. Moreover, the strategic fit factor relates to how well the idea fits the current strategic directions of the company.

And the second factor was market potential, this factor related to how great the market potential was, how big the market was and how well Tork could penetrate the market. Furthermore, these two factors was not measured in absolute numbers but was comperaed to other ideas. Basically, these ideas was matched againt eachother and got one point per win, so the higher the amount of points the more attractive the idea. The second group used the same approach as group number one when it came to the actual screening part, but differed in the clustering activity. Here there was less atendans from the group and more from the internal innovation network.

5.3.2 Analysis

Throughout the screening process what was emphisized was market potential and strategic fit. This heavily reflected the work that was within this phase. The first step of the screening process, the clustering part, existed to cluster ideas that overlapped but what was heavily emphisized during both processes was that this was done to further strenghten the communicated market potential. So the market potential was in center throughout the clustering activity was the most central factor, how the ideas could reach maximum market potential.

Moreover, throughout the screening process second part, the actual screening, the whole group took part in voting on the different ideas. But something that was expressed after the interviews was that the importance of the two factors, strategic fit and market potential, varied between the different ideas. Hence this method could lead to the wrong idea being selected as the one to further develop. This is due to the fact that there is no correction of the method eventhough one of the factors stand out as more important in comparison to the other.

5.4 Summary

Factor	Effect on Workshop Output
Group Size	• **Main Obstacle** Large groups disable the opportunity of gaining main benefits in ideation workshops, knowledge sharing and additional perspectives in idea development. • **Impact on outcome** The effect of this factor has both a short term and a potential long term effect. The short term effect is that a to large group disables

	attendees to provide their perspective on all ideas and hence this benefit is lost and the potential idea is one dimensional. The effect on a long term perspective is that since the knowledge is not shared within the organization there is no possibility for the units to maintain this knowledge within the full organization and hence this knowledge might not be used further in the FFE phase.
Cross Functional Groups	**• Main Obstacle** The selection of attendees is a crucial part in order to gain success. One the reason for cross functionality is to raise discussion and through this be able to include a wider perspective to the ideas developed. **• Impact on the Outcome** If a group is homogenous and lacks cross functionality there are risks included that the outcome is one dimensional and lacks a wide perspective. One sign of cross functionality is that discussions arise during ideation workshops; this is due to the fact that people have different view of what needs to be considered when developing ideas. And if these discussions do not arise there is a risk that the idea might lack perspective.
Internal Innovation Network	**• Main Obstacle** The study has identified that product developers sometimes lack ideation capabilities and that this is something that can be hard to manage. These problems might occur throughout the whole FFE phase; however the largest need for support from an internal innovation network exists in the planning of ideation activities, ideation workshop and screening of ideas. **• Impact on the Outcome** The study shoes that the internal innovation network can assist in the planning of a ideation activity to make sure that it is planned according common practice and that it is suiting for the purpose of the ideation. During the ideation activity the internal innovation network can provide additional perspectives to developing ideas and during the screening process valuable input can be gained from the internal innovation network.
Professional Facilitator	**• Main Obstacle** Throughout the planning process it has been identified that it is important to match the wished outcome of the workshop, how many ideas, what types of ideas etc, with the strategy of the ideation workshop. It was identified that this was not done in both projects and that this had a big impact on the outcome. **• Impact on the Outcome** The main impact here that was identified was that the facilitator had a large positive impact during the planning stage. Here the facilitator could connect the purpose of the ideation to the ideation and design the ideation accordingly. This was one of the factors that stood out as important. However, during the workshop there was no indication that the professional facilitator was superior to the untrained.

<div align="right">**Table 18, Summary**</div>

6.   Conclusion

This chapter has the goal to answer the research question by summarizing and discussing conclusions that was drawn from the performed study. This chapter will provide recomentdations for each of the studied factors on how these can be sufficiently managed.

The purpose of the conclusion chapter is to provide an answer to the stated research question through summarization and arguing the conslusions that have been drained from the study. This will lead to recommendations how to manage the researched factors in a sufficient mannor.   Finally suggestions for future research will be sugested.

The reasearch question for this study was:

- **What factors has the biggest impact on FFE phase output?**

The objective for the study was to observe a FFE phase carried out by SCA with main focus on ideation workshop and ideation workshop planning and how the FFE phase can be managed in a more sufficient manor and increase the outcome of the FFE phase, the amount of ideas passing through the screening phase.

To be able to answer the research question the interviews was conducted to get an insight into what was important thorughout the different steps of the FFE phase. Based on these interviews and the theoretical framework that was used the factors that was considered having a large influence over the FFE phase was chosen. When these were chosen the two project groups FFE phases was designed with these factors contradicting eachother to be able to identify the differences. Based on the findings regarding the factors researrched the following are the indentified potential improvements:

- **Development Potential Groups Size**

The improvement that has been identified during this study regarding groups' size is that smaller groups do not suffer from the same problems as larger groups. The benefits that have been acknowledged in this study that can be gained from ideation workshops can be easier obtained through a smaller group size.

- **Development Potential Cross Functional Groups**

What was discovered during the study was that if a group is cross functional, there are people from different functions and people representing different markets, the heterogeneous group will most likely provide more perspective to the ideas. So one solution to gain additional perspective was to adapt to a cross functional system and avoid homogenous groups.

- **Development Potential Internal Innovation Networks**

The study identified that the internal innovation network is of crucial importance throughout large parts of the FFE phase. Moreover, it was also identified that a lot of the other factors are depending on the competence that the internal innovation network provides. Hence, it should be common practice to include the internal innovation network during the FFE phase to further increase the possibility to share knowledge and to add perspective to the developed ideas.

- **Development Potential Facilitator**

The study has identified that the largest contribution by the facilitator is done in the early stages of the FFE phase, the ideation workshop planning. So the recommendation here is to include the facilitator, preferably one with prior training, in an early stage to enable the facilitator to have an impact on the ideation workshop.

A central tool for ideation has been the ideation workshop. Why this has been studied in addition to the primary research question is due to the fact that this is the most commonly used ideation tools at SCA. Hence, this was something that needed to be studied the sub-question of this study was:

- **What potential benefits can be gained in Workshops**

The reason to why this was decided to be a sub-question was due to the fact that workshops id the most commonly used tool for ideation in SCA and hence a lot of the outcome would be decided within this tools. The two benefits that were identified was **knowledge sharing** and **adding additional perspective to ideas.** These two potential benefits were those identified during ideation activities and these two was also supported by Geschka (1986). However, this too benefits was enabled due to certain ideation workshop circumstances and was disabled by other ideation workshop circumstances. These circumstances have been further explained in chapter 5.

6.1 Recommendations

This study has made observations that should be taken into consideration when managing an innovation project in the FFE phase. In this section the study aims to provide recommendations, which were obtained through observations during FFE activities, on each of the researched factors, which was based on interviews with employees.

6.1.1 Recomendations Group Size

During the observations two main challenges that are related to the group size was identified, knowledge sharing and for atendees to provide additional perspectives to the ideas, these two factors are also acknowledged by Rhodes and Thame (1988).

Knowledge sharing is important in this type of activity since it enables work shop atendees to gain new knowledge and experience. Moreover, in group one the potential of sharing knowledge between workshop atendees could not be fully executed since not all atendees engaged in each others work. Since the group was as big as it was it had to be divided into several smaller groups this disabled atendees to share their current knowledge and experience with all atendees. However, in group two that was a lot smaller this was not the case. Even though this group was also divided into smaller groups at times the knowledge sharing was enabled since the groups easily could interact with all other atendees between activities and provice their thoughts on the idea. Hence, knowledge sharing, which according to Rhodes and Thame (1988) one of the main benefits with workshop activities got a lot more efficient when, applying a smaller group size.

The other potential improvement that has been identified is for attendees to provide additional perspective on ideas and this is also an important factor when running an ideation workshop. Interviewees mentioned that the possibility to gain additional perspective on ideas was an important tool for increasing idea readyness. Group one that was the clearly bigger of the two groups had to divide the whole group into smaller groups for the workshop to run smoothly, this was an action executed by the professional facilitator. Post this action there was not a lot of interaction between the

smaller groups. This disabled the atendees to provide additional perspective to other atendees ideas, and since some of the atendees was invited for their special competence the benefit of inviting these atendees was limited to a few of the potential ideas. Moreover, group two could all interact with eachother over how to further develop the generated ideas. And both according to interviewees whom said that atendees being able to provide additional aspects was an important feature (Table 8), and Rhodes and Thame (1988) attendees being able to provide additional aspects is an important feature during ideation activities.

To summarize, the smaller of the two groups was able to better benefit from the benefits that are acknowledged in this type of setting. They were both able to better share knowledge through interaction with other attendees and could efficiently add additional aspects to potential ideas.

6.1.2 Recomendations Cross Functional Groups

The one true improvement potential that has been identified is to acknowledge cross functionality as an important tool for a successful workshop, and by acknowledging this making efforts to ensure cross functionality. And as stated by to Geschka (1986) the selection of participants for a workshop is very crucial part for workshop success. And as we saw in group one there were great discussions that covered more in comparison to the second group. And as we know group one was designed to apply cross functionality, this took a lot of planning and a lot of managing to get the right people to the ideation workshop. This was the better of the two cases, even though it takes additional time in comparison to keeping the ideation "in-house" saves a lot of time and resources. If the workshop attendees are kept to the once that are within a specific unit they possesses the same knowledge and competence, but in addition to this they think the same and this deactivate the possibility for the ideas generated are not challenged. And as stated by Geschka (1986) the most important factor for a good workshop is the communication between the attendees.

6.1.3 Recomendations Internal Innovation Network

One clear improvement potential that we can see here is primarily to make it a standard to include the internal innovation network as support for FFE activities. The

internal innovation network assisted in enabling the project group to both share knowledge and provide additional aspects to the ideas, which are considered two of the main outcomes of workshops and are important to the FFE phase outcome.

The second improvement potential and that is important to take into account at an early part of the FFE phase include the internal innovation network. Since the FFE phase has tended to be easier to influence at an earlier stage and harder to influence the further it goes. So if the proect group was to contact and include the internal innovation network at an early stage this would likely lead to better possibilities to obtain the benefits.

6.1.4 Recommendations Facilitator

The clear improvement potential is to in all cases for the FFE phase include a professional facilitator in a early stage. Through including the facilitator at an early stage the facilitator can have the largest possibility to design the phase according to prior experience.

Moreover, by including the facilitator in an early phase it enables the facilitator to provide insights to the planning based on prior experience. But one thing that is important is that the professional facilitator in this case was more experienced on how to prepare the workshop for the ideation. It clearly showed during the observations that this had an impact on the results. But what was done most differently between the two groups was that group one matched the purpose of the ideation workshop with the planning, the other group did not take into account what they required as outcome prior to the start of the planning. This difference showed quite clearly during the ideation workshop, one of the workshops communicated clearly the purpose of the ideation and how the activities aimed to fullfill the goals. Group two did not match their purpose of the ideation with the planning and this showed clearly during the ideation since, in comparison to group one, the facilitator could not clearly communicate the purpose of the ideation workshop and the purpose of the activities.

To summarize, what can be developed here is that a professional facilitator should be included in a early phase and that the purpose of the ideation workshop should match the planning and choices of activities for the ideation workshop.

6.2 Future Research

Througout this research some observations has been made regarding future potential research. Since this study is only limited to the FFE phase, due to the time frame, it is hard to follow up and investigate the ideas success through the whole development process and onto the market. This could further strengthen the findings of a similar study and further determine which factors are the most contributing to ideation success.

Another research that could be interesting is to make the same experiment as was done in this study, but with more project groups to try other combinations of factors. This could also further contribute to the explination of the results of the different factors impact on the different factors. And through this be able to provide an even stronger recommendation on how to manage the different factors that has been acknowledged as contributing factors within this study.

Another research that could be of interest is to include further more tools for ideation to the reasearch. This study was limited to the once used at SCA since these were the only once that could be analysed, these beeing internal innovation networks and workshops. Moreover, these tools could include innovation jams, IBM is one example of a large enterprise that has applied this innovation tools for idea generation. And according to Chapman Wood and Bjelland (2008) the innovation jam is becomning more and more commonly used by companies to generate ideas for development. Additional factors that have an impact on ideation workshops could also be of interest. How individual ideation contra group ideation works is one subject that could be of interesst. During the observations it has been identified that some of the atendees do not contribute as much as other atendees, but still are very successful technichans and have issued several different patents. This amoung other factors could be included in future research.

7. Bibliography

(n.d.).

Amabile, T. M. (2006). Creativity and Innovation in Organizations. *Harvard Business Press*, 1 - 15.

Björk, J., & Magnusson, M. (2009). Where do good innovation ideas come from? Exploring the influence of network connectivity on innovation ideas. *Journal of Product and Innovation Management*.

Björk, J., Boccardelli, P., & Magnusson, M. (2010). *Ideation Capabilities for Continous Innovation.* Backwell Publishing.

Chapman Wood, R., & Bjelland, O. M. (2008). An Inside View of IBM's Innovation Jam. *MIT Sloan Management Review*, 32 - 41.

Clepf, S., Passarini Takashashi, V., Camargo Jr., F., & Goncalves Maia Campos, P. (2012). Predevelopment: The Innovation Advantage - A Natura Case Study. *Tecnopress*, 22 - 25.

Cooper, R. G. (1988). Predevelopment Activities Determine New Product Success. *Industrial MArketing Management*, 237.

Cooper, R. G. (1990). Stage-gate syste,: A New Tool for Managing New Products. *Business Horizons*, 44 - 54.

Cooper, R. G., & Edgett, S. J. (2007). *Feeding the Innovation Funnel.* Product Development Institute.

De Bono, E. (1973). *The Use of Latteral Thinking.* Barnes & Noble.

Dodgson, M., Gann, D., & Salter, A. (2008). *The Management of Technical Innovation.* Oxford: Oxford University Press.

Dornberger, U., & Suvelza, A. (2012). *Managing the Fuzzy Front End of Innovation.* Leipzig: Intelligence 4 Innovation.

Francis, D., & Bessant, J. (2005). Targeting innovation and implications for capability development. *Technovation*, 171 - 183.

Geschka, H. (1986). Creativity Workshops in Product innovation. *Journal of Product and Innovation Management*, 48 - 56.

Grant, R. M. (2010). *Contemporary Strategy Analysis.* West Sussex: John Wiley & Sons , Ltd.

Herstatt, P., & Verworn, D.-I. (2001). *The "Fuzzy Front End" of Innovation.* Hamburg.

Jacobssen, D. (2009). *Vad, Hur och Varför?* Lund: Studentlitteratur AB.

Kim, J., & Wilemon, D. (2002). Focusing the fuzzy front-end in new product development. *R&D management*, 269 - 279.

Kvale, S. (2009). *Den kvalitativa forskningsintervjun.* Lund: Studentlitteratur.

Merriam, S. B. (1993). *Fallstudien som forskningsmetod.* Lund: Studentlitteratur.

Nonaka, I. (1994). A Dynamic Theory of Organizational Knowledge Creation. *Journal of Organization Science*, 14 - 37.

Poskela, J., & Martinsuo, M. (2009). Management Control and Strategic Renewal in the Front End of Innovation. *Journal of Product Innovation Management*, 671 - 684.

Remenyi, D., Williams, B., Money, A., & Swartz, E. (1998). *Doing Research in Business and Management: An Introduction to process and Method.* London: Sage.

Rhodes, J., & Thame, S. (1988). Accelerating Innovation Through Real-time Workshops. *Long Range Planning*, 41 - 46.

Robson, C. (2002). *Real World REsearch.* Oxford: Blackwell Publishers.

Saunders, M., Lewis, P., & Thornhill, A. (2009). *Research methods for business students.* Edinburgh: Pearson Education Limited.

Teece, D. J., Pisano, G., & Shuen, A. (1997). Dynamic Capabilitites and Strategic Management. *Strategic Management Journal*, 509 - 533.

Tidd, J., & Bessant, J. (2009). *Managing Innovation Integrating Technological, Market and Organizational Change.* West Sussex: John Wiley & Sons Ltd.

Van de Ven, A. (1986). Central problems in the management of innovation. *Management science*, 590-607.