Aalto University
School of Science
Degree Program in International Design Business Management

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Identification of Idea Management Tools' Success Factors for Organizations

Master's Thesis
Espoo, 11,August,2014

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AALTO UNIVERSITY SCHOOL OF SCIENCE
Degree Program in International Design Business Management

ABSTRACT OF THE
MASTER THESIS

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Topic: Identification of Idea Management Tools' Success Factors for Organizations

Number of pages: 88	Date: 11/8/2014	Library Location: TU
Professorship: Work Phycology		Code of professorship: TU-53

Supervisor: Professor Matti Vartiainen

Instructors: Tuomo Eloranta

ABSTRACT

This study explores the success factors of idea management tools to support innovation by studying their practical implications in organizations. Existing literature research emphasizes on the design, features and systematic processes associated with idea management tools. The practical use of the tools is presumed to support innovation management by introducing controls in form of structures and technological support. However This narrow view does not explore the challenges, benefits and pitfalls that affect the successful adoption and use of tools in an organization. The aim of this research is to bridge this research gap by studying multiple real life case organizations and examining their idea management tools and support processes in detail.

Empirical data in form of interviews is collected from 9 organizations. The meticulous content analysis of rich interview logs reflects that idea management tools provide a platform to support innovation initiative of an organization. The tools serve as a medium for identification of the opportunities by capturing, prioritizing, evaluating the ideas which otherwise do not find a channel to surface. All of the tools studied, are designed to be used by the whole organization and this creates a social setup of collaboration and community around the tool use.

Collaboration, knowledge sharing and collective decision making are identified as main challenges and also the critical factors for the success of regarding the use and adoption of tools in all case organization. Furthermore it is discovered that the advantages from these factors are not fully gained in any of the case company. This may stem from the fact that idea management tools are relatively new concepts for all the organizations being studied (less than 5 years since tool implementation). The practical implication of the tool requires changes in attitude from the normal working methods in organizations. An environment of open idea sharing needs to be created or adapted instead of each business line responsible for their own portfolio development. The prolonged struggle to create this attitude change is identified as a major barrier in successful use of the tool.

The findings also show that lack of motivation, commitment and miss-managed expectations can create a challenge for an organization towards the successful deployment of idea management tools. The role of all the stakeholders is extremely important in this context. Commitment from employees as well as middle and top management can bring real benefits from the tool in terms of participation and implementation decisions.

Keywords: Idea Management tools, Innovation, innovation Management, Innovation Process.	Publishing language: English

Acknowledgements

I would like to thank Allah for always providing me with the prospect to pursue my dreams. Then I would like to extend gratitude towards my family for being a support I can always rely on. For guiding & helping whenever it was needed acknowledgements are extended to my supervisor Prof Matti Vartiainen; Pekka Berg, all my friends and three special ones, Tanya Chuzhanova, Rashmi Borole & Faraz Ahmed Khan.

My special thanks go to my instructor Tuomo Eloranta, for his continuous support, commitment and guidance throughout the span of this work. Without his assistance this would never have been possible.

Last but not least I would like to say Design Factory became my second home while working on this thesis. So I would like to thank all the wonderful people of Design Factory for creating a place to have fun, cook, make new friends, learn and of course work.

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Chapter 1: Introduction

Diversity in human intellect is an inherent trait that allows us to innovate and make transformation to cope with the changing dynamics of our world. Thus innovation is a familiar concept for everyone to write about (Vogel, et al., 2005).There has been tremendous efforts to research discuss and understand all-inclusive viewpoint of innovation and management of innovation. Thus companies have made realization that innovation is necessary to grow, gain viability, maintain a competitive edge and succeed in their current and future business offerings (Drucker, 1998; Kaplan & Norton, 1992). In this context the field of innovation is so enormous that the focus of companies is not on having monetary value or market share with only new products (Cooper, 2005) better services or new businesses (Alam & Perry, 2002).Rather they are aiming to create a combination of all three thus generating an innovation system (Kelly & Littman, 2001).

Ideas can be considered the forerunners for innovation (Forbes, 2013). In today's fast paced market companies need continuous flow of useful ideas to bring innovation by creating products, services and business processes that in turn will generate value for all stakeholders (customers, supplier & employees) involved in an organization (Kelly & Littman, 2001). Innovation is necessary for existence of companies and ideas are considered as the starting point of an innovation process (Bailey & Horvitz, 2010).The paramount importance of continuous flow of ideas to bring innovation is necessary for the survival of an organization (Cooper, 2005; Haour, 2004).

1.1. Background

Innovation begins with identifying a" need" which can be survival, competitive advantage, aggressive growth or combination of all. (Cooper, 2005; Haour, 2004; Kaplan & Norton, 1992). Thus the innovation system may contain many important aspects like stakeholders, processes and ideas which contribute towards realizing the strategic goals of the organizational and fulfil this need (Haour, 2004; Kelley & Littman, 2006). Nevertheless for the past few decades focus of innovation has been on successful management of product innovation (Schumpeter, 1934), technology innovation (Haour, 2004; Van de Ven, et al., 1999) and service innovation (Kelly & Littman, 2001; Edvardsson, 1996) where all of these areas were treated as separate entities. Moreover, the role of innovation was centralized and limited to R&D, middle and top management, thus companies heavily invested and focused on specific activities and few resources to bring innovation and transformation (Chesbrough & Crowther, 2006). This limited approach can result in organizations running into the stagnant phase where they are comfortable with

their core offerings and cannot cope with the change that transforms the environment around them (Chesbrough & Crowther, 2006).

Only in the last few years things have changed and to increase innovation capabilities companies have started to realize and create whole innovation management systems with processes, supporting tools, cross business collaboration and customer involvement. (Chesbrough & Crowther, 2006; Haour, 2004).Such elaborate innovation systems require organizational support from all management and employees (top down and bottom up) along with processes and tools designed to cope with the naturally disruptive and unexpected process of innovation (Haour, 2004; Van de Ven, et al., 1999).

The purpose of this research is to explore these innovation systems and management practices by focusing on the processes and tools that are used to manage ideas and support innovations within organizations. The primary focus of the study is related to idea management tools, comprising of ICT based tools and processes that support the use of tools and make them a success in supporting innovation initiatives of an organization. The approach considered here is that Idea management tools can help to create a holistic innovation environment by supporting all phases of innovation process.

1.2. Research Gap and Questions

Idea management tools assist organizations in exploiting their innovation capabilities in terms of capturing, sharing and evaluating ideas (Flynn, et al., 2003; Montoya-Weiss, 2000). The value of ICT tools and supporting processes to manage ideas has been discussed in literature. It is clearly visible in such discussions that these systems provide support at different stages of innovation management processes, from idea creation to beginning of implementation and commercialization (Montoya-Weiss, 2000). Additionally the academic research also discusses managerial role of a tool as platform that gathers all kind of ideas and helps the process by providing a maintenance structure which in turn allows the transition from idea to implementation to be transparent, smooth and collaborative (Karlsson, 2010).

But there is a clear research gap in current literature in terms of lack of empirical evidence that examines real life case companies to study the use and processes associated with idea management tools. In this context this research is aimed to study a link between the findings from the academic literature and the outcomes that occur by use of idea management tool. Studying the real life companies for this research will help to understand experiences, expectations, and assumptions related to idea management tools and support processes. This understanding is a window to comprehend the success factors, challenges and pitfalls that happen when companies use such tools. The main aim of this research is to bridge the research gap in practical cases and theoretical concepts to evaluate success factors for idea management tools.

The research scope is built around the study of 6 international companies and 3 software solution providers of idea management tools. The companies in this study either had a fully functional idea management tools or were in a transition phase of adopting such tool. On the other hand software solution providers had experience and knowledge regarding features and design of the tools. They also have insights regarding the factors that affect its successful use as they provided the solution to numerous organizations. This diverse dataset helped to create broader picture in terms of expectations, prospects and actual practices related to the tools and the processes in place. The main research questions this study explores are:

1. What are the factors that contribute to the success of Idea management tools in an organization?
2. What are the biggest challenges faced by organization in successfully implementing the idea management tools?

The data from the case companies is examined to answer the questions by conducting qualitative research in form of detailed interviews. This study explores role of idea management tools from all perspectives of contribution, evaluation and collaboration. The data gathered from the case companies is reflected against the literature review, which discusses the innovation management, innovation processes and idea management tools use and attributes.

1.3. Thesis Structure

Thesis is divided into five chapters (see Fig.1). The **first chapter** introduces the topic of the thesis and helps to understand the research gap and research questions. The background is explained by discussing the importance and role of idea management tool in overall innovation activities for an organization. The arguments why this topic is selected for the study are also explained in this section.

The **second chapter** consists of key literature review and explains the theoretical concepts related to innovation in order to develop a thorough understanding of the topic. Different types of innovation and the criteria of classification are discussed. This is followed by details of innovation processes to understand different stages and nature of that process. Next management of innovation is discussed. This is followed by the discussion regarding the support structures that help innovation management and formal innovation processes models and idea management tools are explained in this regard. All these concepts related to innovation, management of innovation, processes and models of innovation lay the ground work to understand the role of idea management tools in the organizations. The last part of the literature is focused on the review of idea management tools and benchmarking some of the open source idea management tools. This section serves as the basis to develop deeper understanding of system design and processes, motivation for participation, collaboration and outputs. The learnings from the literature review are reflected against the findings from the real cases in chapter 5.

Chapter 3 introduces research methodology and the case organizations. In this chapter the research design and data gathering methods are discussed in detail. This section also discusses the approaches utilized for the analysis of data and presentation of the result. The data is obtained in form of interviews from multiple case studies. The approaches used to analyze data are inspired by using narrative and content analysis technique proposed by Powell & Renner (2003), grounded theory by Charmaz (2000) and theory building using multiple cases research by Eisenhardt & Graebner (2007). Using this analysis the emergent themes are identified and findings are explained in context of these themes.

Chapter 4 discusses findings and answers to the research questions. The results are reflected based on the themes that were emerged by interview analysis. Each case company is discussed separately in this section followed by explaining the major challenges and success factors for idea management tools.

Chapter 5 concludes the thesis with discussion. In this chapter all the findings from the empirical cases are reflected against the concepts from literature review. The practical implications of the tool are then discussed for the future use of the tool. These topics are followed by evaluation of the study by discussing limitations and future areas of research and conclusion of the research. Figure 1 shows all the chapters and highlights that will be discussed.

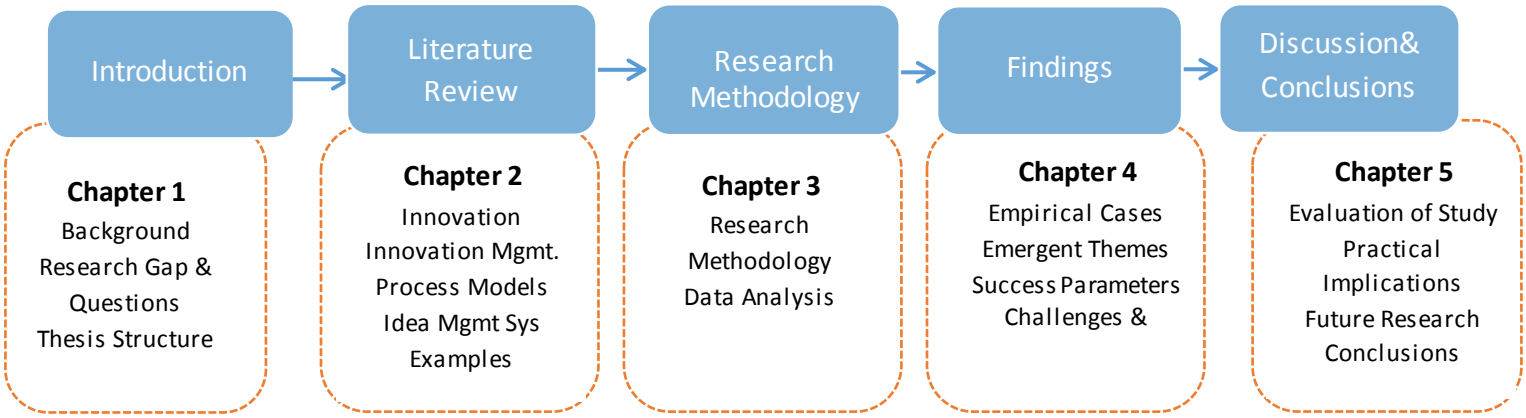

Figure 1: Thesis Structure

Chapter 2: Review of Key Literature

To the reader: This section discusses the concepts from the literature in order to develop a basis for understanding an all-encompassing view of idea management tools. To create this understanding the section begins by discussing the key concepts related to innovation. This is followed by explanation of concepts regarding innovation processes, and then management of innovation is discussed in terms of practices and support structures. Formal process models of innovation and idea management tools are discussed as the support structure for management of innovation in an organization. Formal process models are discussed briefly while the literature review related to idea management tools is reviewed in detail as they are the focus of the study. This review is created keeping in mind the research gap and research questions. All these concepts form the solid base for the understanding of idea management tools in terms of design, stakeholders, support processes and their role in innovation activities of an organization .Figure 2[1] shows the flow of literature review from innovation to idea management tools. The key learnings from literature review are summarized in the end of the chapter to present the overview.

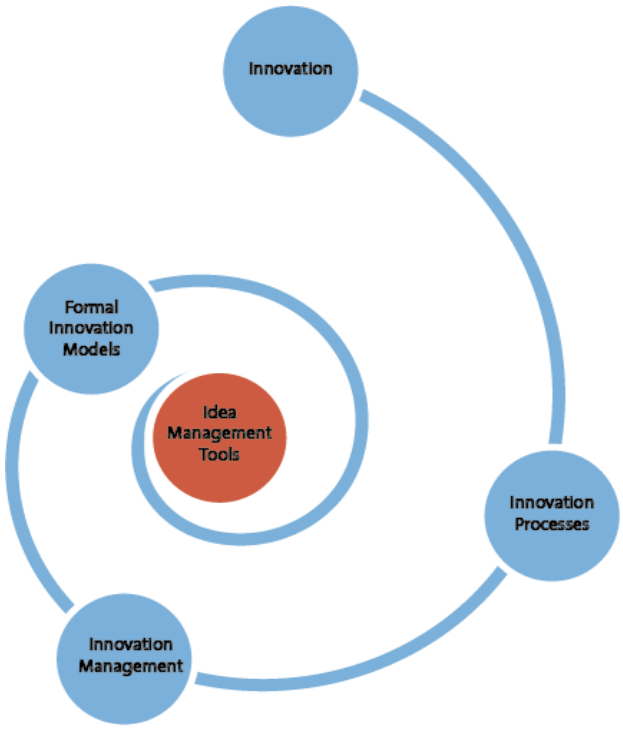

Figure 2: Literature Review Flow

[1] Inspiration from the figure taken from CogniStream Accessed at 20.07.2014 http://www.cognistreamer.com/en/index.html

2.1 Innovation Concepts and Discussion

Innovation has become common practice in today's world of exploration; we innovate every day in our personal and professional lives by creating meaningfulness for ourselves and others (Van de Ven, et al., 1999). Yet it is hard to understand an innovation process in its entirety because there are multiple viewpoints to understand innovation (Vogel, et al., 2005).This literature review tries to explores numerous concepts of innovation and management of innovation and develops an understanding how innovation processes, activities are discussed in literature and key concepts related to the context of this thesis topic.

Several formal and informal definitions of Innovation exist but in simplest words innovation can be defined as ideas that have been put into practice. Innovation and invention are mostly compared in literature, where invention can be defined as the first manifestation of an idea (Van de Ven, et al., 1999). In this context invention differs from innovation. As innovation not only explains the creation of new idea or method but also talks about processes that can make the idea work and deem it useful (Van de Ven, et al., 1999). However the translation of idea into tangible output requires several steps (Berg, et al., 2008). Thus processes of creating an innovation cannot be separated from a starting point where everything is unclear and just an idea exist with no implementation details; which come at later stages of innovation (Van de Ven, et al., 1999; Karlsson, 2010). It is hard to have a clear boundary that separates innovation and invention entirely where this unclear first phase of innovation also known as "fuzzy front end" can also be called as invention (Berg, et al., 2008). The term fuzzy front end is used for first stage of innovation because it refers to the initial implementation phase of innovation where opportunities are identified and concepts are developed and there is less structure compared to development or implementation stages (Koen, et al., 2001). It is very important step of the process as it is a stage to evaluate ideas and concept before investing resources (Koen, et al., 2001).

Front end stage is also the stage where ideas can be seen in their initial phases; idea management tools are typically but not exclusively dealing with this stage of innovation. These tools support in gathering / collecting the ideas, developing them by collaboration and evaluating the potential of the ideas for further recommendation before they actually go into implementation (Montoya-Weiss, 2000). Since from "fuzzy front end phase" there is no confirmation if all ideas will reach implementation and commercialization (Berg, et al., 2008). It does contradict from the above definitions of "innovation as idea being implemented".

This study however considers that the grass root of innovation is ideas (Bailey & Horvitz, 2010). Idea management tools contribute to overall innovation activities within an organization by keeping it fueling with content i.e., "ideas". An innovation process contains many steps or activities from identification of

need, coming up with ideas, evaluating and developing them to concepts, planning and implementation, testing and commercialization (Van de Ven, et al., 1999; Haour, 2004). This research does not make explicit distinction between invention and innovation and deals with the all the efforts that are related to" fuzzy front end" as innovation activities specifically focusing on idea generation, development and evaluation. The stages and different types of innovations are discussed later in the section where this fact is elaborated more details.

Since ideas vary in their content so the resulting innovation they generate can be very different in its content (product, services, and process) and the value it creates for the different stakeholders involved. In literature innovation has been classified on different criteria's. Classifications of innovation are based either on type (product, service, process) (Schumpeter, 1934) or in terms of change it creates, it can be a radical or incremental (Leifer, et al., 2000) or it can also be a technical or process innovation (Van de Ven, et al., 1999). Different types of innovation divisions are discussed in this section as this research explores the management of different kind of ideas using idea management tools. These divisions are not strictly followed in the study and are merely there to understand the difference in the management process of innovation activities that are based on these different divisions.

In his book "The innovation Journey" Van de Ven et al. (1999) has classified innovation as (i) invent product, programs, services and technologies (ii) administrative arrangements that create new organizational processes or policies.

Schumpeter's explores the economic value of innovation and divides it into (i) the introduction of a new good or a new quality of a good (product innovation); (ii) the introduction of a new method of production (process innovation); (iii) the opening of a new market (market innovation); (iv) new source of supply or intermediate input (input innovation); and (v) the carrying out of a new organization of industry (organizational innovation) (Schumpeter, 1934).

All these divisions define boundaries for instance as if product innovation is completely different from service innovation but that is not the case and different kind of innovation can occur during the same process (Kelly & Littman, 2001).

Another criterion to understand innovation is based on "newness" which explains the division of radical or incremental innovation; many authors discuss this term to be central to any kind of innovation (Seidel, 2007). Rogers says an idea, change, concept if perceived new by the individual or unit it is intended for it will be an innovation (Rogers, 1983). There exist multiple schools of thoughts that examine radical vs incremental innovation. The basis to distinguish radical and incremental innovation can be the change it brings at that point of time (Seidel, 2007; Leifer, et al., 2000). Continuous improvements to the existing

setup can be referred to incremental innovation while a radical innovation can be introduction of a completely new product, service or technology (Leifer, et al., 2000). Managing radical vs incremental innovation requires different set of activities, knowledge and feasibility and thus requires different sets of actions from organizations' point of view (Seidel, 2007). The point is that the value of both innovations for the companies cannot be ignored (Schumpeter, 1934). Incremental innovations generate continuous value in term of utilizing the existing assets of the company providing sustainability in current business offering (Fagerberg, Mowery, & Nelson, 2006). The radical innovation helps to explore new territories for expansion and growth (Hill & Rothaermel, 2003).

In this study the division of radical vs incremental innovation is only used to understand the organizational behavior to deal with such innovations. It also helps to create an interesting point from real life cases to see how beneficially a system can support different kinds of innovation in terms of management and understanding their value right from ideation phase.

Since it is also debated in literature that boundaries are blurring between different kinds of innovation and there is a confluence and convergence of technology and business processes, products are considered tangible services and vice versa (Kelley & Littman, 2006; Kelly & Littman, 2001). Such intersection makes it clear that no innovation is a singular activity but a combination of one or more, so one kind of innovation encompasses several different types (Betz, 2003; Kelley & Littman, 2006). For example portable music players referred to as mp3 players were available in market since 90s. But in 2001 Apple recognized customer needs and took market by storm when they combined iPod with iTunes. With all the music online consumers had a complete package and can hear their favorite music anywhere. The point of this example is that Apple combined the product with service innovation along with marketing innovation, and pitched the idea to their customer, differentiating from rest of the players in the field and thus succeeded at greater lengths.

Companies now more than ever identify the collaborative nature of innovation where technology and business goes hand in hand along with design and marketing (Betz, 2003; Kelly & Littman, 2001). Idea management tools can provide a platform to allow this collaboration between different innovations (Karlsson, 2010; Turrell, 2003). This study however uses these types of innovation as explained above, only to create an understanding of the system and organizational behavior but these boundaries are not explicitly discussed for each case organization. Rather this differentiation is used to understand difference steps an organization takes to deal with different innovations.

2.2 Innovation Processes, Management and Models

There are many definitions and divisions of innovation but the very fundamental question is how does innovation happens and how to manage such activities? This section ponders these questions by discussing general organizational activities related to innovation and management of innovation. These activities include the practices related to all phases of innovation from idea generation to implementation; factors that affect these activities are also discussed. In later part of this chapter structures that support innovation management are discussed. These include more formal innovation process models and idea management tools. All the details regarding idea management models are discussed as they are the focus of this study.

2.2.1 Innovation Processes

Organizations cannot ignore the importance of innovation management (Haour, 2004).They can do organized efforts to manage innovation but the process of innovation itself is not predictable and inherently uncertain as outcome may not comply with all the assumptions and planning (Haour, 2004). To manage the uncertainty of different stages of innovation process Van de Ven et al. (1999) in his book "The innovation Journey" explains that organizations learn from the positive outcomes of each step or activities and avoid the negative outcomes. Since the start of innovation is not very clear this learning by trial and error helps to understand and improve the process. So to understand the process of innovation and successfully manage it; it is important to reduce uncertainties between outcomes and actions although it is impossible to completely get rid of all uncertainty from the process (Van de Ven, et al., 1999).

Van de Ven et al. (1999) used the word "journey" to explain innovation process and how it occurs in "a "cybernetic manner, which is neither stable and predictable nor random and stochastic" (Van de Ven, et al., 1999). What they mean in their book is that innovation process is uncertain. Here it can be noted that they also talk about "innovation processes" but when they say process, they mean the innovation journey, where as other authors, for example Cooper (1994) in his work, use the word "process" when he refers to formal process models, i.e. normative descriptions of how innovation activities should happen. This distinction is important to realize.

Van de Ven et al. (1999) constituted a longitudinal study of 14 different technical and administrative innovation processes for different projects and identified the common elements in the development of innovation process. All the characteristics were not observed at all the projects but enough support was available to create a list of common elements.

- Initiation period/Fuzzy Front End: Events can occur over extended incubation period to set "stage of innovation". Efforts to start the initiation period are triggered by "shock" from internal and external factors. Rather than actual plans these plans serve as "sales vehicle" to propose ideas.
- Development period: One innovative idea can soon multiplies into multiple ideas and activities. Mistakes and setbacks can occur resulting in changing the success criteria of innovation and can create a problematic internal strife between the team, top management and external contributor based on changing expectations as process unfolds. Innovation teams deal with external stakeholders like supplier, partners, competitions or government agencies and the since the consequences of the innovation actions are not clear it is hard to develop relationships and manage expectations of various stakeholders in the process.
- Implementation / Termination Period: During this phase innovation adoption occurs simultaneously as it is being developed so there is integration of old and new practices to fit the need. Running out of resources or end of implementation can mark termination where evaluation occurs about the success or failure of innovation.

These steps create a broad understanding of the stages that can occur in the innovation process but it is not necessary that all the steps occur in all the innovations. The idea is to understand the most common elements which can help to identify some characteristics while observing the innovation process of different companies (Van de Ven, et al., 1999).

2.2.2 Innovation Management

Innovation management can be considered as set of activities and controls that lead to generation, management, and evaluation of ideas in the front end phase and produce results in implementation phase (Adams, Bessant, & Phelps, 2006). Keeping in mind this context this study heavily focuses on the management of ideas that are generated during first phase of innovation in an organization. The role of idea management tools is to provide structural approach to manage the fuzzy front end (Montoya-Weiss, 2000).The transition from idea to implementation phase is also discussed as for some organization it is more important to determine success of their idea management tools (Turrell, 2003).

Organizations use many different management practices, support processes and models to ensure a flow of continuous innovations using ideas (Bailey & Horvitz, 2010). Ideas can be managed and converted to products ,service and new businesses (Kaplan & Norton, 1992; Kelly & Littman, 2001).The first phase of innovation is ideation and then idea evaluation and selection, that can lead to business prospects of future and also provide competitive edge (Adams, Bessant, & Phelps, 2006). So this requires investment in terms of resources, knowledge and money to move an idea from conception to implementation (Davenport, 1993). The innovation management in this regard should be flexible and created in an

efficient way to provide such support and also evaluate the progress and identify the success and failure factors to iterate or change if things are not working in any phase (Haour, 2004).

Due to its uncertainty innovation process is hard to comprehend in its entirety. As discussed above it can be broadly divided into three stages the initiation period or fuzzy front end, the implementation phase and commercialization (Van de Ven, et al., 1999; Koen, et al., 2001). The fuzzy front end in innovation process is all those activities that come before the structured implementation phase of innovation. While "fuzzy front end" is considered the uncertain and unstructured phase of innovation the implementation phase has more structure as ideas become clear when they move forward in an innovation process (Koen, et al., 2001).

It is also interesting to note that management techniques are different in different organizations based on size (small vs big), type (IT vs manufacturing) and reach (global vs local) (Fagerberg, Mowery, & Nelson, 2006). What is meant here can be explained by an example , a technology startup with 10 employees can easily prototype and test the new ideas they come up with but an international manufacturing company with global operations cannot do the same due to constraints in available technology, regulations, policies and magnitude of their operations. So management of innovation activities is different for such organization. These factors play a major role in defining the innovation management activities that company practices (Fagerberg, Mowery, & Nelson, 2006). "

Another aspect of innovation process management is the "relational complexity" which means that in an innovation process the outcome of each step is influenced by the project team and the external factors (Van de Ven, et al., 1999). Where by external factor it is meant here the stakeholders like competitors, trade associations, partners, government agencies and policy makers and some others like environmental regulation and laws etc. So the role of project team and these factors also play an important role in determining the stability of innovation management process (Van de Ven, et al., 1999). These dimensions need to be considered in comprehending innovation management, so in a company, leadership, management and employees need to understand the complexity of the overall process of innovation (Haour, 2004). This familiarity with the factors that affect innovation management can help to effectively apprehend and manage the process (Betz, 2003). This could means reducing the ambiguity, learning from the failure and replicating best practices to gain favorable results. (Van de Ven, et al., 1999).

This is easier said than done since the process of innovation may induce complication in the normal organizational activities or working practices (Garud, et al., 2011). The organizational activities are designed to smoothly run day to day tasks and avoid uncertainty (Van de Ven, et al., 1999; Haour, 2004).The ambiguity in innovation process makes is hard to compare to normal planned projects with financial returns and performance index and quarterly savings (Dougherty & Hardy, 1996). This also means to incorporate innovation in the company's usual way of working these activities are treated and

managed as separate processes (Chesbrough & Crowther, 2006). These methods to deal with innovation can lead to organizational setting where particular business unit or few people focus on innovation for example some companies are heavily focused on R&D department for innovation (Drucker, 1998). The rest of the organization just deal with the diffusion of these innovative activities once the results are visible in form of new products, services or processes (Chesbrough & Crowther, 2006). This approach creates a closed innovation environment where the organizations do not make use of all the resources at hand and also the external inputs inform of new ideas are ignored because the organization is set in its way of working. (Chesbrough & Crowther, 2006).The same concept is depicted in the figures below. These figures are adapted from Henry Chesbrough (2003), open innovation model to show the closed vs open innovation environment for organization. As it can be seen confining innovation and not creating collaborative environment can lead organizations to stagnant phase where many opportunities remain undiscovered as companies only cater to existing markets with ideas from few sources.

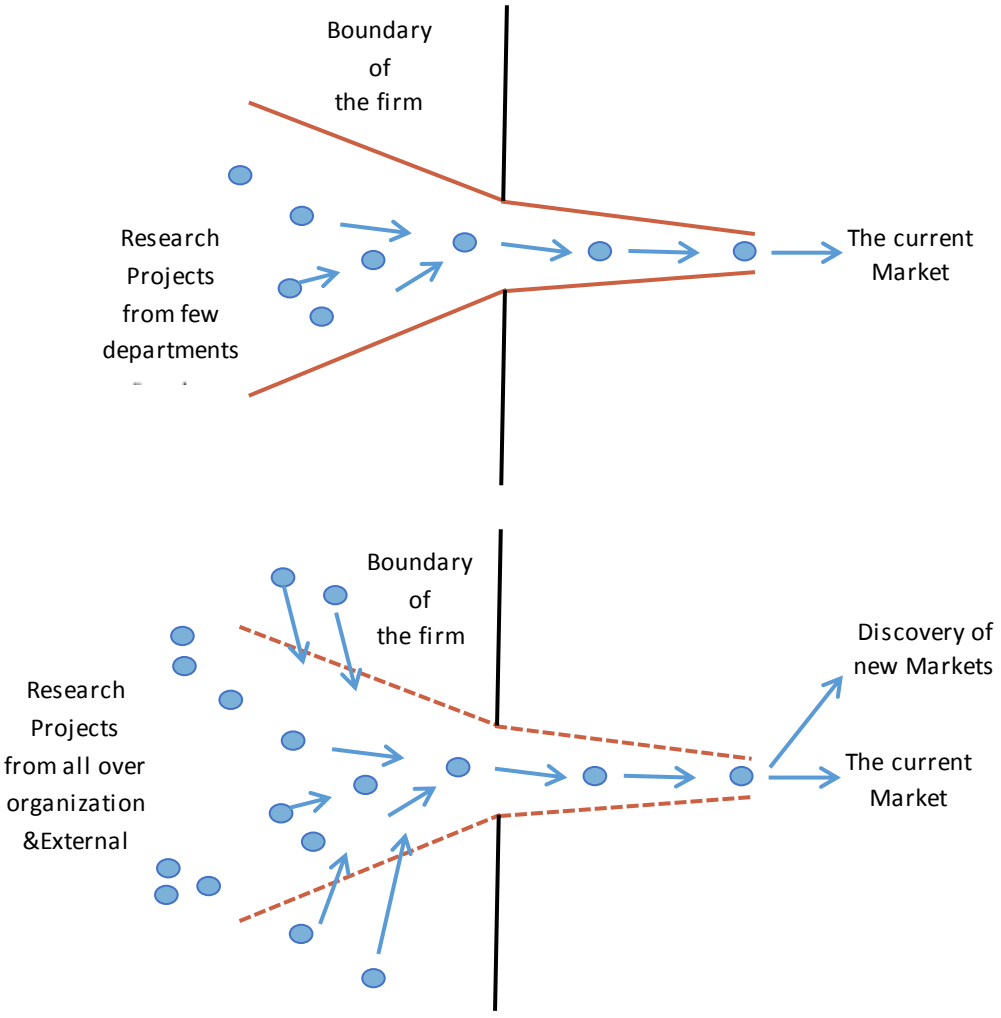

Figure 3: Adapted from Chesbrough (2003), Closed (above) vs Open (bottom) Innovation Environments

This approach of managing innovation hinders knowledge sharing and collaboration as discussed, only some people or units are responsible for innovation (Garud, et al., 2011). Especially in huge organizations different innovation activities cannot interest the whole organization at one time (Dougherty & Hardy, 1996). Collaboration between some businesses units involved in innovation activities can provide beneficial results for the organization (Dougherty & Hardy, 1996).

A firm lacking interdepartmental collaboration can also result into employees becoming familiar and comfortable to their assigned job roles and are not susceptible of the change (Dougherty, 1992). If the company at some stage want to adopt more open environment in terms of sharing knowledge, resources and collective decision, it might not be easy to incorporate this attitude in working culture of the company (Chesbrough & Crowther, 2006). As people might not be familiar with this open working environment it can require change of behavior and make employees leave their comfort zone and try a new working method which might not be adoptable in a short period of time (Dougherty & Hardy, 1996).

On the other if collaboration is occurring in an organization, it helps to create environment where social aspect of innovation; like idea sharing, collective decision making come into play (Karlsson, 2010). People who are more committed to innovation practices can use their networks to propagate the ideas further and create a snow balling effect where an active person in a team or network can act as enabler to familiarize others with the same working methods of innovating openly (Dougherty & Hardy, 1996).Once such internal environment is created an organization can also propagate the same message of open knowledge sharing and collaboration to the external relations and create a co creating or co innovating environment thus sharing knowledge and using the abilities of all the employees as a collective force for benefit of the whole organization (Karlsson, 2010).

All the above discussion explains how innovation management is influenced by elements like inherent uncertainty of the innovation process, role of stakeholders and external factors; along with size, outreach and working practices of a company. Taking these element into account while creating and implementing innovation management structures like idea management tools or formal innovation management models, can help to manage overall innovation process and create value for an organization in short and long term. Next structures that support innovation management activities are discussed in form of formal innovation process models and idea management tools.

2.2.3 Innovation Process Models

In this section formal process models to manage innovation are discussed .These models serve as a basis of many ideas management tools because they formalize a structural way to manage innovation process which is one of the main features of idea management tools as well (Bailey & Horvitz, 2010; Montoya-

Weiss, 2000). These models consist of steps that help to develop effective routines for companies to understand and manage different kinds of innovation activities (for example radical vs incremental) (Cooper, 1994). These steps and activities in process models are linked to each other and provide a picture of how different stages of an innovation process are proceeding (Cooper, 1994; Cooper & Kleinschmidt, 1986).

Innovation models have seen changes over the period of time the earlier models of innovation were linear and followed sequential steps (Rothwell, 1994; Cooper, 1994). As shown in the figures 3,the science-push model and need-pull model by Rothwell show sequential steps with no feedback loops reflecting that it is possible to controll an innovation porcess by sequential linear steps (Rothwell, 1994).

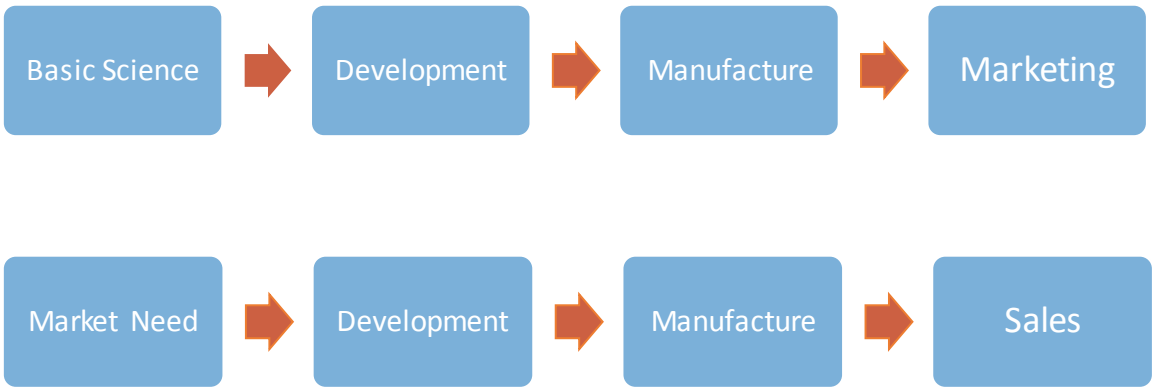

Figure 4: Linear models of Innovation-the "science-push" model (top) and the "need-pull" model (bottom) (Adapted from Rothwell,1994)

With time innovation models have become more dynamic meaning they have integration of different processes happening at the same time with interactions and external factors being part of these models (Alam & Perry, 2002; Verloop, 2004). One such example is the 'chain-link model' as shown in Figure 5 below, it shows numerous feedback loops and external factors like market knowledge to be incorporated into actual innovation process. Similarly research and knowledge sharing is occurring at each stage (Abbey, 2012).

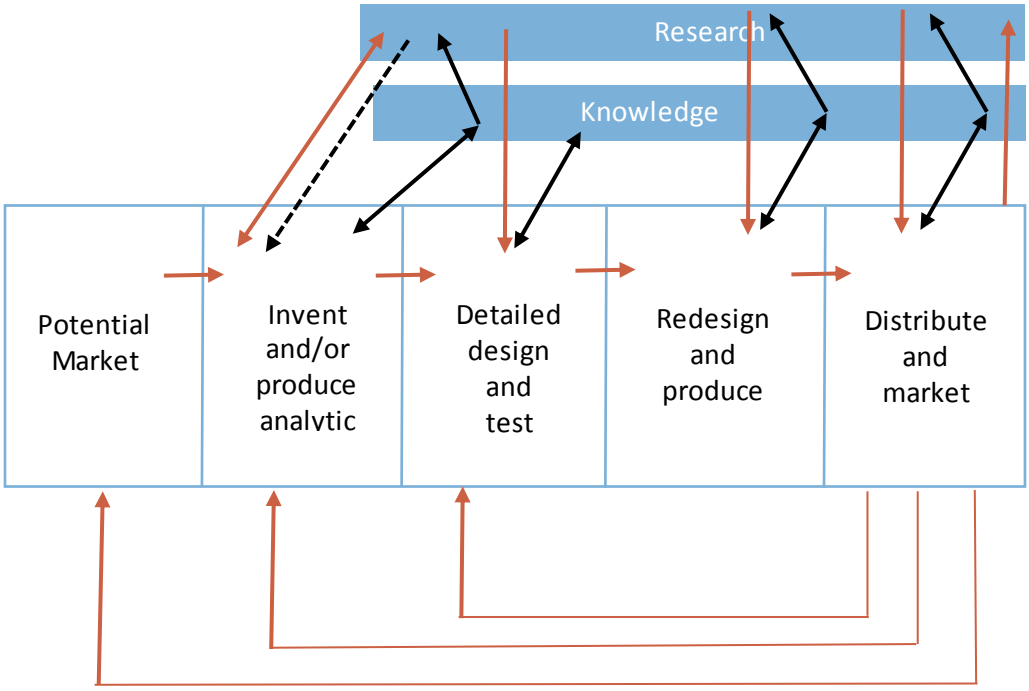

Figure 5: 'Chain-link' model of innovation.

As seen from above examples, the innovation models have different steps or stages. Most generic stages are explained here. The first stage is the gathering or collection of ideas for most of the innovation models (Verloop, 2004). The next stage is to pass the ideas through a funnel where selection and evaluation process narrow the scope by selecting or rejecting ideas based on the evaluation criteria (Cooper, 1994). The idea gathering and evaluation can have many back and forth steps that occur in this phase. Since this phase involves selection of idea for implementation so refining or changing ideas is a possibility. This creates feedback and discussion (Koen, et al., 2001) .

The evaluation phase leads to implementation phase where new products, processes or services can result from ideas that were gathered in the first stage (Cooper & Kleinschmidt, 1986). This can be considered a convergent phase where resources are allocated for the project and scope is narrowed. The final stage is commercialization of innovation where it is introduced to the market (Abbey, 2012). Some authors also discuss post launch or commercialization phase in terms of diffusion of innovation where a new innovation is continually improved to make it acceptable (Rogers, 1983). Organization can learn from all these stages by introduction of organizational learnings from best practices or failed attempt as last stage of innovation process model (Fagerberg, Mowery, & Nelson, 2006).

One of the most discussed innovation process models is the stage gate model (Cooper, 1994; Cooper & Kleinschmidt, 1986). It is the sequential model which consists of activities that can transform an idea to a product. Each step of the process is pronounced as stage where set of activities occurs and then there is a preceding gate that is there to make decision to see if development can continue or not. In his model Cooper proposed a cross functional decision making team where technology, marketing and business can collaborate to make an informed decision. This can help reduce the decision time and make the product development process fast and help to avoid pit falls of the process in earlier stages of innovation by discarding the outcomes that are not working (Cooper & Kleinschmidt, 1986; Cooper, 1994)

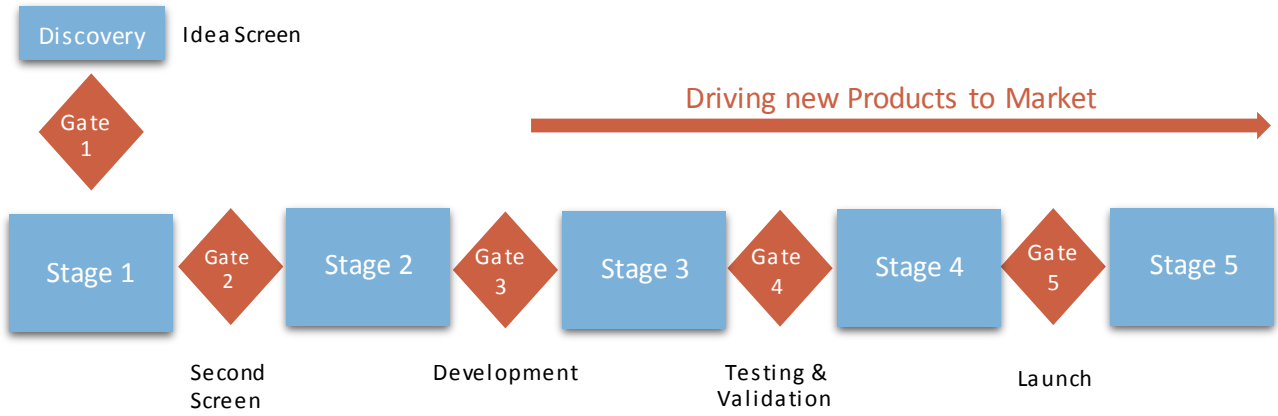

Figure 6: Stage Gate Model by Cooper (1994)

The initial stage gate model was very rigid and lacked flexibility and thus one stage cannot be jumped unless the previous one is successful creating longer times lags (Loch, 2000). Cooper himself improved it by creating 3rd generation stage gate model where you can skip the stages or cross the gates based on the decision of the team to make the process faster (Cooper, 1994).This can be considered significant improvement but it still lacks the diversity in terms of management of complete project portfolio of the company (Khurana & Rosenthal, 1998). As product or service projects, incremental vs radical projects may require different set of management processes and decisions (Fagerberg;Mowery;& Nelson, 2006). Factors like novelty and market value may vary for different projects and need to be considered in a front end model (Nobelius & and Trygg, 2002).

Innovation models add structure to the overall innovation process but at the same time they can create limitation or inhabitation because of rigid steps that need to be taken can limit the possibility of ideas or concepts that are not familiar to be dropped in the early stage (Loch, 2000). Loch (2000) made research on a European Technology Manufacturer which ran an innovation contest; he studied 90 new product development projects. These projects ranged from radical to incremental and line improvements. What was interesting to see from his findings was the fact that only 33 projects followed the formal defined

innovation management models while rest were managed by informal methods and the results from using formal and informal approach do not vary that much. Thus these innovation model gave sequential approach to innovation and mostly control innovation in a linear way (Cooper, 1994; Rothwell, 1994) the real life scenario might be different (Loch, 2000).

To summarize the above discussion, the innovation process models formalize the innovation management activities by managing ideas and leading them from innovation to implementation and commercialization stage (Cooper & Kleinschmidt, 1986). So these process models form basis of idea management tools (Montoya-Weiss, 2000; Bailey & Horvitz, 2010). As idea management tools help the process of managing ideas through different phases of innovation, they support the overall innovation management activities of organizations (Bailey & Horvitz, 2010). These tools provide normative structure to innovation process. But all the challenges, concepts and factors that affect innovation management also hinder or support the use of such tools. That is why to create thorough understanding of idea management tools in terms of their design, functionality, role of stakeholders, the understanding of innovation management and process models is necessary. Next section discusses idea management tools in detail.

2.2.4 Idea Management Tools

Management of ideas mean set of activities that can create organized gathering, evaluating, sharing and processing of ideas to create innovations (Bailey & Horvitz, 2010; Turrell, 2003).An idea management tool can be considered as a platform that has a functionality to collect ideas, refine them ,evaluate them based on certain criteria, recommend for actions and store them for future reference (Bailey & Horvitz, 2010; Montoya-Weiss, 2000). All such ICT based systems specially designed for this purpose are used to describe idea management tools. As these tools are defined based on basic set of characteristics including gathering, collaborating, and evaluating, selecting and sharing ideas with in an organization (Bailey & Horvitz, 2010). One might argue that some of the above functionality defined by Bailey and Horvitz can be achieved from the simple communication channels like emails, spread sheets or in house communication tools (Turrell, 2003).

To explain this concept further Mark Turrell (2003) discussed different kind of idea management schemes in his research and some of them are explained here. At the most basic level the ideas in organizations after an ideation sessions are recorded in form of spread sheet or simple list format. Second are the suggestion boxes which are installed in the work place to gather ideas. Third are the basic idea management tools where there is no support process and ideas are collected without any commenting, evaluation or response, these can be seen as complaint front for the companies. All these systems lack are processes and structure specially, built in the idea management tool like commenting, voting, rating

etc. Thus they lack complexity which is a positive aspect of their simple design as compared to idea management tools. But due to lack of complexity their benefits are limited in terms of creating an idea bank with all support processes in place as shown in figure (Turrell, 2003).

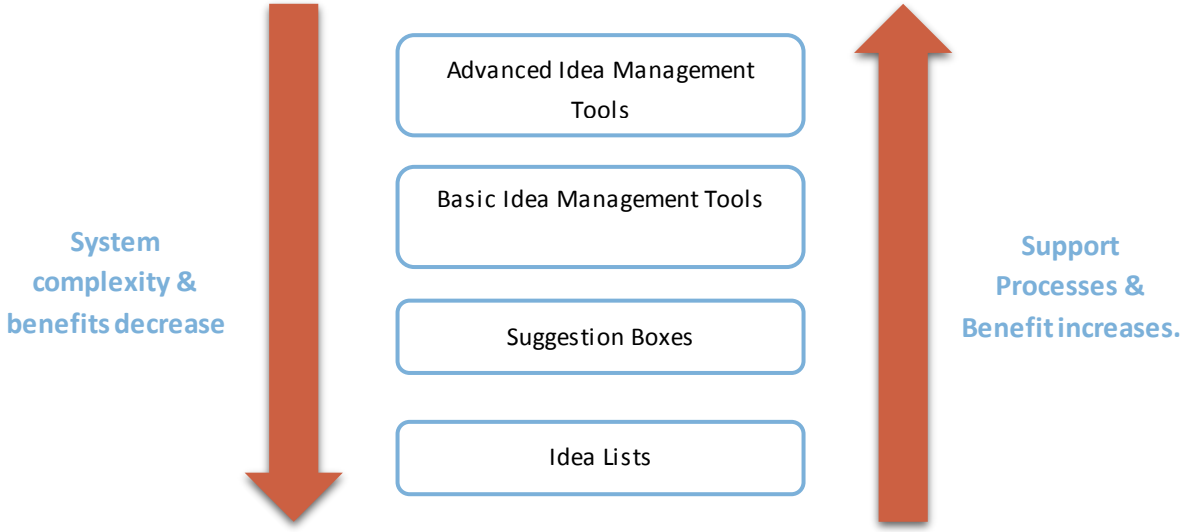

Figure 7: Idea Management Solution

So for the purpose of this research the ICT tools specifically designed for purpose of idea management are discussed in detail while the other practices are not discussed explicitly.

The idea management tools can help to enable the creative process of ideation, motivation, participation to enhance the innovative environment and supporting over all innovative processes in an organization (Cormican & O'Sullivan, 2003). The idea portfolio can range from incremental to radical ideas that result into new products, services or business (Karlsson, 2010). Providing support to the idea portfolio of a company is one of advantage of the tool. As all kind of ideas get a platform to become available to review (Bailey & Horvitz, 2010; Montoya-Weiss, 2000). Many authors have discussed the features an idea management tool should have in it (Montoya-Weiss, 2000; Bailey & Horvitz, 2010). These features may vary from organization to organizations but some common features are discussed here.

Features of Idea Management Tools

Most important feature of an idea management tool is that it **engages** all employees in an organization in the process of tool use (Karlsson, 2010).This can be achieved by submitting an idea, commenting on it, rating or voting it or evaluating it or accessing the idea from the database, the tool supports (Bailey & Horvitz, 2010; Montoya-Weiss, 2000; Cormican & O'Sullivan, 2003). **Divergent nature** of the first phase of innovation means that there can be many ideas related to different areas or portfolios and since the system also serve as a data base for ideas; this can impart complexity to the process of gathering idea in terms of handling all of the requests at the same time efficiently (Karlsson, 2010). Idea management tool

should enhance **collaboration** not only in all stages meaning in the stage where ideas are being developed but also when they are being evaluated (Karlsson, 2010; Turrell, 2003). **Collective knowledge sharing**, decision making and diversity of perspective can help to make the tool successful for organizational benefit (Karlsson, 2010). This tool should also have a **feedback** loop enabled for the ideas being submitted and provide recommendation to move idea for the next phase of innovation process (Turrell, 2003). The last feature the tool should support is to integrate idea management into the overall innovation activities and initiatives of an organization by actually implementing ideas to generate results (Turrell, 2003; Bailey & Horvitz, 2010).

Design of Idea Management Tools

The design of such tools plays an important role in the overall process of idea formulation, selection, sorting, diversification and outcome of the innovation process (Montoya-Weiss, 2000). The sorting, evaluation and absorption of ideas to the company's portfolio pave new innovation initiatives for an organization (Bailey & Horvitz, 2010; Karlsson, 2010).

On a broader perspective process can start with motivating and driving people to participate in ideas gathering process (Bailey & Horvitz, 2010).Since this participation is necessary to begin the process. This can encompass all formal or informal innovation activities, which can drive people to contribute (Turrell, 2003).The more formal process begin with submission of ideas to a system by filling a form or a template (Montoya-Weiss, 2000). The form helps to describe the idea and same standardize procedure is used for submission of all the ideas. This form may ask certain set of questions that need to be answered for each idea submitted. These questions can be for example the technical feasibility or market potential of an idea or it can be regarding the scale to rate novelty of an idea (Montoya-Weiss, 2000). The approach can vary in different organizations as some support more open approach and encourage participation by asking minimum questions (Bailey & Horvitz, 2010). One aspect discussed by Bailey and Horvitz (2010), is the design of tool to enhance participation. The tool can support the thought process of individuals for example by asking if idea fits organizational strategy, technical capabilities or market value (Bailey & Horvitz, 2010; Montoya-Weiss, 2000). On the other hand if ideation is introduced by utilizing the challenge based approach it can generate ideas to direct the creativity towards specific direction (Bailey & Horvitz, 2010). Where challenge based approach is more targeted ideation approach which allow companies to provide direction for ideation to their employees by providing topics where ideas from employees can be valuable for companies (Bailey & Horvitz, 2010; Karlsson, 2010).

To explain this further if we look into the Galilio software discussed by Montoya-Weiss and O'Driscoll (2000). The idea initiator has to answer 38 questions in total at different stages of idea submission. The initial phase is the definition of idea and requires 10 questions and sub questions discussing customer

and organizational needs, technical feasibility and competitor advantage. Once these questions are answered the next phase contains 12 questions and sub questions where more details regarding the idea novelty etc. are asked from idea submitter. Once this is done the idea submitter rates his own idea on multiple criteria on a 5 point Likert scale for 16 different criteria and sub criteria (Montoya-Weiss, 2000).

Whereas the Microsoft idea management tool discussed by Brian P. Bailey and Eric Horvitz (2010) was web based software where ideas were collected based on predefined challenge. Users were able to add ideas in narrative format and additional supports in terms of attachment as video, presentation were possible. They were also able to comment or vote or associate ideas with others. Since the ideation was challenge based the system does not asked questions from the users. The system has the ability to use filtering to see if the submitted ideas complied with the existing challenge. If that is not the case they were placed to an open challenge (Bailey & Horvitz, 2010).

These examples reflect different methods to capture ideas it can be very extensive as in case of Galilio software or very simple as in case study of Bailey. Hence the bottom line is to support the idea submission process by formalizing it and making it same for all ideas. This makes the process comprehendible for later stages of idea management (Montoya-Weiss, 2000). The other advantage is that these idea submission processes support the creative process by using the challenge based approach or multiple questions that can help the thought process of the idea submitter and help them think before submitting ideas (Bailey & Horvitz, 2010).

Idea development stage requires some set of activities like refining of idea by collaboration, commenting or rating (Bailey & Horvitz, 2010; Montoya-Weiss, 2000; Karlsson, 2010). Commenting practices are important as they can help to develop the idea further. Many authors discuss the social value that an idea management tool generated in form of collaboration between employees (Karlsson, 2010). Commenting, rating or voting can idea help to spark this networking and collaboration (Bailey & Horvitz, 2010; Karlsson, 2010). Different type of commenting features can be part of an idea management tool. For instance in some tools the idea submitter is allowed to ask people he/she thinks are most relevant to his idea and can contribute to improve it (Karlsson, 2010). Where as in some idea management tools there is a possibility to add key word and any user of the system can comment on idea or area they see as interesting (Bailey & Horvitz, 2010; Montoya-Weiss, 2000).

A transparent evaluation process is essential for successful functioning of an idea management tool as it ensures that all ideas are validated against criteria that are fair, standardized and fit company strategy (Bailey & Horvitz, 2010; Montoya-Weiss, 2000). The idea evaluation has to be flexible to support incremental as well as more break through ideas which may require different set of criteria to be judged (Bailey & Horvitz, 2010). At this stage an idea is still part of the idea management tool and the evaluation

can then lead to selection of the ideas that can be moved to next phase of implementation or postponed or rejected (Bailey & Horvitz, 2010; Karlsson, 2010). But it has to be noted all these ideas are actually future prospects that can serve to add to knowledge bank of an organization (Karlsson, 2010; Turrell, 2003). This selection and evaluation steps help to structure the fuzzy front end phase but at the same time create a transparency and environment of innovation within an organization (Flynn, et al., 2003). Evaluation phase also requires a decision making activity. Since the one of the goal of the tool is to create or design processes that ensure no idea is rejected due to lack of knowledge or capabilities to evaluate (Bailey & Horvitz, 2010; Flynn, et al., 2003). Hence companies are trying to create teams that are constituted of people from different business units. These cross business teams help to see the potential of idea in terms of viability, desirability and feasibility or technology, business and customer needs (Kelly & Littman, 2001). There is also an approach of self-evaluation where users are asked to rate or evaluate their idea prior to expert opinion. This approach is used to make the idea submitter think about their ideas before submitting them (Montoya-Weiss, 2000).

In the next section some examples from idea management tools are discussed. These examples are used to benchmark the features and design of idea management tools as discussed in the literature review above. These examples also explain the actual use of the tool in real life context.

Examples of Idea Management Tools

An idea management tool for the sake of understanding has been divided into two groups "internally focused system", focused on an organization internal employees while other that involves external contributors called "externally focused system" (Karlsson, 2010). The difference in both these systems are based on the stakeholders that are involved for example an internally focused system is internal to the organizations while an externally focused system can have stakeholders as contributors in form of suppliers, partners or users (Karlsson, 2010). In this section some examples of idea management tools are discussed. These are open source tools idea management tools which mean companies have opened these idea management tools for their customers and employees alike.

Idea Storm-By Dell

Idea storm was launched in 2007 as a collaborative effort by Dell to get the ideas from their customers. The company calls it as a platform to have "online brainstorming". The simple procedure allows any user to register to the site. Once a person is member of the idea storm, they can contribute by submitting ideas in form of text description. It is also possible to add video or pictures as an additional explanation of the idea. The ideation is supported by having some topics related to different business and product divisions in Dell. A user can contribute to any of these topics. The categories of ideas also help to search

for ideas related to specific topics. While submitting idea "double check" functionality allows seeing if the idea already exists in the system. To enhance target ideation Dell has introduced "storm sessions" which

Figure 8: Ideastorm Dell Open idea collection software

are short lived idea sessions where users are required to submit the ideas in specific time regarding specific topic. The commenting is allowed in the system where other users and Dell representative can also comment on the ideas. The evaluation of idea is completed based on the content of idea, the dell team checks if the idea is relevant to their innovation portfolio. Secondly they evaluate if idea is already known to them i.e., it was either implemented or about to be implemented in near future. Then idea submitter is informed about the decision about their idea. Based on evaluation, idea either gets selected for implementation, it is possible that similar the idea already exists or has been discarded due to some reason or idea is not feasible at the current time. All the ideas are kept in archive for future use. Moreover the ideas receiving discussion and comments become part of trending ideas where Dell employees and other users can see the most relevant topics. According to the stats provided by Dell on the idea storm website the system is successful and out of over 21000 ideas submitted 500 plus have already been implemented.[2]

Open Ideo

Open Ideo is an open innovation platform which uses challenge based idea management process. This platform is open for everyone. The aim of the open Ideo platform is to ideate by collaborating, knowledge sharing and building on each other ideas. The process begins when a social challenge is posted by the Ideo team. This challenge can have sponsorship from any company supporting the cause.

[2] Accessed at 31/07/2014 :http://www.ideastorm.com/

Once the challenge is posted the materials like background research, stats, case studies, tools and existing stories are shared to help contributors understand the challenge. After these step users are encouraged to submit ideas and missions which are the inspiring examples related to the challenge. At this step the collaboration and discussion is facilitated and encouraged by the Ideo team. The top ideas are" applauded" by Ideo experts to be short listed. These shortlisted ideas are encouraged by the Ideo experts to prototype and test for the challenge in the community for which challenge was designed for.

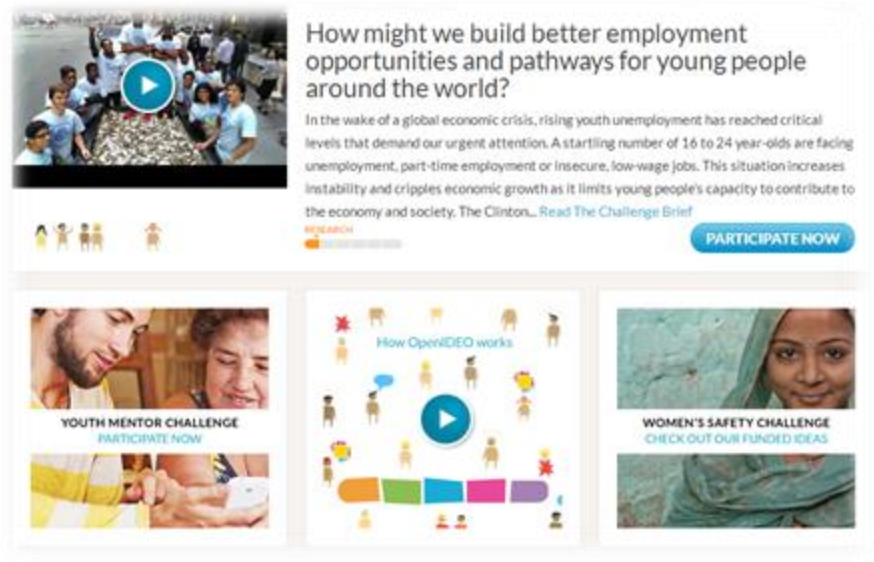

Figure 9: OpenIdeo. Idea sharing and collaboration software.

After several iterations of prototyping and testing, the best ideas are selected based on the key criteria for the challenge and the decision coming from Ideo experts, community feedback and the sponsor's opinion. The selected idea is then being set to implementation either by the sponsor or the community members. Ideo supports open collaboration and knowledge sharing at all stages and impact generated by actual implementation is highly valued and promoted. Another feature from user point of view is that when someone participate and submits ideas to open Ideo they gain recognition in form of "deign quotient" this personal "badge of honor" Ideo uses this badge to see the most active participants and also understand the area of expertise for each participant.[3]

It can be seen from the examples that as described above in the literature review the idea submission is standardized. In case of idea storm the user have to link the idea to existing idea portfolio of the company while Ideo favors more directed challenge based approach. One difference which is seen from the features and design of the tool is that in challenge based approach Ideo helps the thought process of the user by providing them with materials like examples or case studies that are related to the challenge. This has not been discussed in the literature. Secondly highlighting more active users and ideas are

[3] Accessed at 31/07/2014: https://openideo.com/

supported by both examples which is not been explicitly discussed in the literature. In Ideo the users are provided with personal badges that help the experts to identify the active users. Where as in idea storm the most commented ideas start trending to show the interest of the community. This feature has also not been discussed. In idea storm the evaluation is done by the expert of the company, although based on the idea content they can be cross business teams. This approach is explained in the literature. Where as in Ideo challenge the top ideas are selected by the votes of the system users as well as experts and the community the challenge was created for. Ideo followed more collaborative approach in evaluating ideas by involving users of the system in decision making along with experts.

Idea Management tool and Innovation Process

It is interesting to study here how an idea management tool supports different phases of innovation process. If idea management tools support managing ideas then it is possible to channel the innovation efforts to the direction they are needed the most by using directed ideation and prioritizing ideas based on company's current needs (Karlsson, 2010). From employees point of view an idea management tool is a platform where their ideas can get response or feedback and get recognized while from the point of view of leader ship or management it can help to generate value as new ideas keep flowing in and it also create an innovative environment where open knowledge sharing and collaboration is considered important (Bailey & Horvitz, 2010; Leifer, et al., 2000) If we study different steps of an innovation process the idea management tool can support all these phases. This table here is constructed based on the role of idea management discussed from several authors and innovation process and steps as discussed before. The table explains for each step of innovation, how idea management tool can support and is important for the company. The inspiration for the table is taken from the literature of idea management tool (Bailey & Horvitz, 2010; Karlsson, 2010; Simula & Ahola, 2014; Montoya-Weiss, 2000).

Innovation Process Steps	Role of Idea Management Tool	Values Generated by Tool Use
Idea genesis, gathering and collection.	Engaging and encouraging participation from all employees. Developing ideas further by supporting collaboration, rating, voting. Asking for ideas related to specific topic or project. Visibility for the managers to the ideas that are being collected and can be used for benefit of company for short and long term	**Collaboration, Knowledge Sharing, Openness.** **Content in form of ideas.** **Participation.**
Idea Evaluation & Selection	Open sharing of ideas, experiences and collaborative decision making can assist in suggesting developing idea further, recommending it for implementation.	**Collaboration, Discussion,** **Knowledge & experience sharing.**
Idea Feedback & Recognition	Feedback from not only the other employees but management to idea submitter & recognition of the effort.	**Trust building between employees & the management. Expectation management.**
Idea implementation	Following up on the recommended idea and making them part of current or future innovation activities. Allocating resources to the ideas and implement them. Making successful stories as learnings for the organization	**Trust building between employees & the management.** **Expectation management.** **Inspiration & Motivation from success stories.** **Monetary returns.**
Idea bank	**Keeping the ideas for future use, using the successful ideas and implementation for the learning.**	**Content in form of ideas.**

Table 1: Idea Management Tool & Innovation Process

It has to be pointed out that in above table the set of activities and values generated by tool are the result of the practices that arise over time by use of tool (Orlikowski, 2000). For example a timely feedback to the user of an idea management tool as consequence will build trust of the user on the tool and the associated process and vice versa. The idea management tools in essence help the companies understand the need for the innovation to meet customer demands and have an edge over their competitors (Kaplan & Norton, 1992). Such collaborative platforms of idea management allow visibility to new ideas, the cooperation between employees and knowledge sharing.

2.2.5 Advantages of Idea Management Tools and Success Factors

The approach of collaborative management of innovation by using idea management tool within an organization utilizes the variability of the employees and makes use of their creative potential to have a constant stream of ideas which are source of innovation (Karlsson, 2010; Bailey & Horvitz, 2010)

- If such tools are supported they can be channeled into front end innovation activities which help to manage an organization's innovation needs which are most relevant and important (Flynn, et al., 2003).
- Idea management tool can ensure the flow of ideas by keeping track and creating a self-sustaining system that help drive innovation in a bottom up manner by engaging the employees (Bailey & Horvitz, 2010).
- Idea management tool also provides a platform where all ideas are stored hence it is a form of idea bank for an organization where ideas are stored, sorted and available for present or future use (Karlsson, 2010).
- Use of the tools also creates benefits as in organizations people are usually familiar with the IT tools the use of idea management tool can be easy to adapt and be used to create an infrastructure to bring innovative strategy to grass root level (Montoya-Weiss, 2000).

Such systems also allow organizations to benefit from co-creating environments, where they give away power, share knowledge and allow people to self-organize (Karlsson, 2010).Another success factor is to minimize the complexity of transforming these concepts from initial fuzzy front end phase to implementation and provide support in all the phases (Flynn, et al., 2003).

Collaboration for decision making and idea development process is extremely important in this regard. Idea management tools can support this selection and decision making by taking into account the viewpoint of multiple business units to evaluate ideas which is critical for the success of such tools. (Montoya-Weiss, 2000).

Idea management tools also enable to create a value for users in form of a feedback where they actually can share their idea and see the reaction from other users or their managers. This could not only help the participation but also begin a community approach which generates an open working and sharing environment (Karlsson, 2010; Majchrzak & Malhotra, 2013).

2.3 Summary of Literature Review

To summarize the literature review, in a larger context it seems that companies are now a days trying to create innovation systems where many aspects; like stakeholders, processes and ideas which contribute towards creating holistic systems to manage their innovation portfolio (Haour, 2004) Innovation process in essence is uncertain (Van de Ven, et al., 1999). Companies use organized efforts to manage innovations (Tidd, et al., 2002). This means deploying control structures and processes that help in generation, management, evaluation of ideas in the front end phase and produce results in implementation phase (Adams, Bessant, & Phelps, 2006).

Idea management tools like innovation process model impart structure to the innovation activities (Montoya-Weiss, 2000). These idea management tools have organized steps that normalize the innovation processes (Bailey & Horvitz, 2010; Montoya-Weiss, 2000). This can be seen from the features of these tools discussed in previous section. The idea management tools create a structure that guides how ideas flow through the tool contemplating different phases of development, evaluation and recommendation (Bailey & Horvitz, 2010; Montoya-Weiss, 2000). The tool itself deals with content in form of ideas (Bailey & Horvitz, 2010; Karlsson, 2010). Collaboration, openness knowledge sharing and collective decision making are values or outcomes that support the tool and processes associated with the tool (Turrell, 2003).

Here it has to be noted that idea management literature focuses on the design and steps of these normalized models to control innovation (Bailey & Horvitz, 2010; Montoya-Weiss, 2000). An innovation process contains many steps or activities from identification of need, coming up with ideas, evaluating and developing them to concepts, planning and implementation, testing and commercialization (Van de Ven, et al., 1999; Haour, 2004).Management of these activities are dependent on variety of factors like inherent uncertainty of the innovation itself, role of stakeholders and external factors and working practices and processes of a company as discussed in detail in section 2.2.2. These dimensions need to be considered in understanding management of ideas that lead to innovation.

Secondly companies now more than ever identify the collaborative nature of innovation where technology and business goes hand in hand along with design and marketing (Betz, 2003; Kelly & Littman, 2001) and idea management tools are believed to inherently provide a platform to allow this

collaboration (Karlsson, 2010; Turrell, 2003). It has been discussed that the ideas from the tool in principle can support all types of innovation like incremental, radical or product, services or business (Bailey & Horvitz, 2010; Karlsson, 2010).

But the success of the tools is dependedent on many factors like working environment of the company (closed vs open) (Chesbrough, 2003), rigid boundaries between businesses (Dougherty & Hardy, 1996). It seems these factors add to complexity of the innovation process and makes it hard to be controlled by formal models and provide challenges for their successful working (Loch, 2000).It has also been discussed companies need to understand and reduce the ambiguity, learn from the failure and replicate best practices to gain favorable results. (Van de Ven, et al., 1999). This approach can contribute to the successful use of the tool. .

In short the potential of idea management tools in supporting innovation still needs to be investigated further. As in literature authors have discussed idea management tool from the perspective of the stakeholders, design, idea content and processes (Bailey & Horvitz, 2010; Montoya-Weiss, 2000). The academic literature lacks real life scenarios as examples when companies are in process of either adopting or about to adopt such systems. The assumed and actual data may be different. Keeping in mind all the finding from the literature the study aims to bridge the gap between theoretical concepts and actual use of the tool.

The results that are obtained from analyzing data from case companies, is reflected against the findings from the literature to understand the use of tool in real life and discover the factors that contribute towards the success or failure of the idea management tool. The same research design is visually reflected in figure 4.

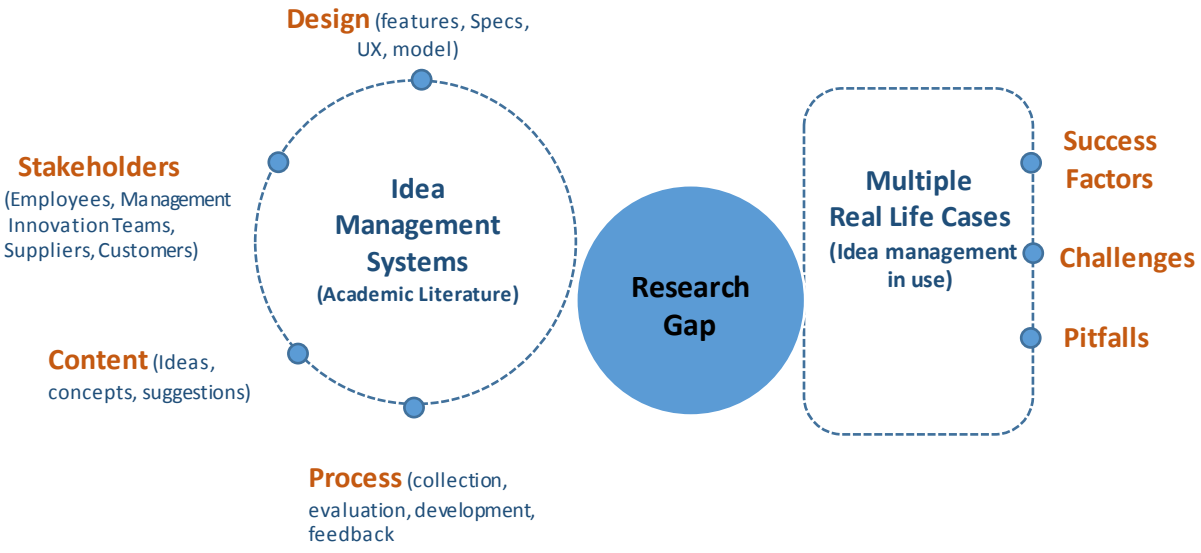

Figure 10: Research Gap

Chapter 3: Research Methodology

To the reader: *This section initially discusses the research design for the study along with the details of how the research was conducted, methods used for data collection and analysis. This Research uses qualitative approach of data gathering using interviews as primary source of data collection. Multiple cases studies are explored to seek answers for the research questions. The data is analyzed using content and narrative analysis by* Powell and Renner (2003)*, grounded theory approach by* Charmaz (2000) and theory building using multiple cases research by Eisenhardt and Graebner (2007). *The chapter is concluded by explaining the analysis of the data in detail along with the information regarding the case companies.*

3.1 Research Questions

This study not only aims to understand the actions in an organizational settings related to idea management tools and but also explores the reason why such activities occur and what are the assumed or real consequences in the end which contributed to gain a manifold answer to the main research questions for this thesis.

The main research questions for the study are:

1. What are the factors that contribute to the success of Idea management tools in an organization?

2. What are the biggest challenges faced by organization in successfully implementing the idea management tools?

3.2 Research Design and Methodology

The empirical part of research is made by creating a qualitative study of multiple real life cases. This approach provided the window to actual processes associated with implementation, deployment and development of idea management tools. The study of real life cases also help to understand the what, why and how questions that are associated with this research topic (Yin, 2009).

Although there are numerous techniques and methods for gathering data on requirements, interview allow to understand interviewee perception of reality by observing the way they answer to specific questions as it helps to understand the person in focus and the context of the information provided (Beyer & Holtzblatt, 1995). For the purpose of this research the interviews were conducted in a semi-structured format; the questions served as a guide line to discuss social, physical and virtual environments of idea management tools. In this context the multiple case organizations were selected to create a divergent or breadth study of success parameters of idea management tools as most of research

lacks the multiple perspectives on this topic. Also the research moved from the divergent to convergent phase as most common success factors needed to be identified and having multiple perspectives helped to create the generalization based on each specific case.

Secondly the existing literature on idea management tools mostly discusses single case company as the basis of their study. In context of the research questions; the real life examples to explain the actual use of the idea management tools and support processes that make them successful or provide challenges is not explicitly discussed in available literature. These reasons contributed to select multiple case studies to explore the above research questions.

In addition if interviews are conducted from multiple sources they can provide rich data for the questions that are being explored and understand the reason behind a response. This gives a broader view to real life design, execution and operational tasks that can contribute towards the success of the systems. Hence to gain rounded insights 13 interviews were conducted in total over the period of 2 months. Among these were 6 organizations familiar with the idea management and 3 software providers who developed the idea management tools for organizations. The details related to the case companies, interviewees and software vendors are explained in the later section.

3.1 Data Collection Methods and Case Companies

The primary data collection method used for this study is interviews. Multiple informants from different companies were interviewed for the purpose of the study. While all the secondary data regarding the back ground, core business, operations and business values of companies was gathered using the open source data available in form of publicly available annual reports and company's website.

As a primary data collection method these interviews were designed to be semi structured to gain as much information as possible in specified time. This approach was selected as this allows the person being interviewed to provide their own view point regarding a topic (Ghauri & Gronhaug, 2005). The purpose of this study is to identify factors that define success of idea management tools, the interviews were conducted with the mindset of gaining insight, into internal and external factors that influence these systems. So interview protocol was defined keeping in mind some of the bigger themes that explore the research question for this study based on the literature review, personal knowledge and inspiration from the work of the PHD student and instructor for this thesis.

The interview protocol had detailed questions covering numerous topics ranging from innovation policy of an organization, innovation activities, role of the interviewee in innovation activities to specific questions related to design, features and use of idea management tool and organization take on success and challenges associated to it . The detailed interview protocol is available in the appendix A. These

questions were created to structure the thought process of the researcher. The interview were intended to understand the norms, experiences and assumptions that were related to innovation activities & processes in the organization focusing particularly on the use of idea management tools and how such activities are supported . The design features and technology of idea management, ICT based tool was also explored by creating detail questions covering this topic. These questions gave window to discover the view point of the whole organization, top management and interviewee personal opinions related to above mentioned topics.

As mentioned before total of 13 interviews were conducted for this study. It was agreed with the informants before the interviews were conducted that their personal and professional information like names, positions and company will be kept strictly anonymous. Among them 10 interviews were conducted from the 6 International organizations representing the industrial, chemical, IT and manufacturing sector. The remaining 3, interviews were from the 1 international and 2 local Finish software solution providers of idea management tools.

The interviewees can be classified into three groups. (i) Had varied but managerial role in the innovation management team, where innovation management team from here on refer to a group of people focusing on innovation initiative and activities in organization. (N=7), (ii) Employees consisting of different business divisions who gave end user perspective regarding the practices, expectations and assumptions related to the use of the tool (N=3), (iii) representatives from the software solution providers discussing the view point of most important aspect that can make such idea management tool successful (N-=3).

No of Informants	Job Role	Industry
7	Innovation Management	Manufacturing, Chemical, IT
3	End Users of the Tool	Manufacturing, Chemical
3	Software Solution Providers	IT

Table 2: Role of Informants

Each interview lasted from 1 to 2 hours. All interviews were recorded and transcribed personally by the researcher. The word by word transcription material consists of 100 pages. The notes and responses of the interviewees were noted during the interview as well. During the wrap up of each interview the purpose of the study, research topic and discussion was summarized. As this is an important part of the interview conduction. (Beyer & Holtzblatt, 1995)

The case companies were selected based on the prior knowledge that they were acquainted with idea management tool in their organization. The participants for interview were contacted by sending an email and later on the phone, explaining the purpose of the research and asking if they will be interested to be part of the study. The participants voluntarily showed interest and spared the precious time to participate. It also became possible during the interviews, that the contact of other relevant personals were shared and contacted by the researcher to become part of the study. The case organizations for convenience can be described as:

(i) Companies that are using the idea management tools and have support processes in place.
(ii) Companies that are in transition phase where they have set of innovation activities related to idea management but they were in the process of either deployment of the ICT tool or gathering requirements to have a sophisticated tool in place that support such activities.

This created a very interesting dynamic which helped to explore the views of organization where a refined ICT tool is in place specifically serving the purpose of managing ideas as compared to organizations where such specific tool might be missing but there are activities, in-house solutions or other channels to serve the same purpose.

The research was broadened by interviewing three software solution vendors. These software solution providers created these ICT tools for purpose of idea management for several organizations. This helped to understand the tool design and change or transition phase when companies feel the need to use these tools and most common requirements asked from tool developers. The assumption, expectation and experiences regarding the role of software tools to manage ideas to produce value for organization were also discussed in the interviews.

As discussed before the interviews were conducted in an informal, semi structured discussion although the interview protocol was referred to time and again. This informal approach sparked conversation related to certain topics that were more relevant to the particular case organization. This also allowed questioning the context or reason behind any particular answer to gain insights. Some interviewees discussed certain topic in more detail while other focused on the intricate details of the idea management tool they are using. Similarly some software vendors discussed the values that interest customer to use their solution, while others discussed the importance of training and enabling the use of tool. These numerous viewpoints contributed to understand the idea management tools and understand the similarity and repetitive patterns to create a generalized view of the findings.

3.2 Data Analysis Methods

In this section the data analysis method utilized to analyze the interviews are discussed. Case studies provide great opportunity to create a generalization based on the environmental context and empirical data gathered (Eisenhardt & Graebner, 2007). In multiple case studies each case can be used to identify replications, comparisons and emergent themes to create a generalization and use recursion to create a generalized theory (Eisenhardt & Graebner, 2007). The same approach is used in the data analysis in this research. The data analysis took inspiration by combining narrative and content analysis technique proposed by (Powell & Renner, 2003); grounded theory by (Charmaz , 2000) and theory building using multiple cases research by (Eisenhardt & Graebner, 2007).

All these approaches convey the view point to understand the data for each case very thoroughly (Charmaz , 2000; Powell & Renner, 2003).Then using replication and iterative analysis to identify the emergent themes from each case can be implied to create a theory (Eisenhardt & Graebner, 2007). In grounded theory approach and Taylor & Renner method these themes in turn help to discover an emergent theory. In this study the combination of the above methods was used to do the data analysis and identify most occurring themes to present the results but no method is followed step by step or vigorously.

Since data was gathered in form of recorded interviews. These interviews were transcribed d to create a document with rich data in form of narration, notes and impressions. In the beginning the analysis focused on identifying the most commonly occurring themes and concepts from the data. As it was explained in the previous section 3 among 6 case organizations had an ICT based tool in place to manage ideas while the remaining 3 were still in different transition phases to deploy the tool. As the common themes were analyzed further to define preset codes or themes, these preset-codes were used then to code the transcript. This data analysis technique led to investigate the assumptions and experience related to the implementation, adoption, use and future use of the tool. To explain the phenomenon associated with the use of the tool the results of the research are presented using the emergent themes having maximum occurrence & co-occurrence at the end of the data analysis.

Based on the use of idea management tool in case organization, the analysis of data showed that two kinds of interpretations can be drawn out; (i) first that resulted in from the actual use of the ICT tools and (ii) second that showed expectations or assumptions before such tools become fully functional for organizations. The results are explained to study the assumed practices and their current practices related to the concept of idea management without ICT tool in place.

In analysis none of the approach or frame work is strictly followed. The framework are used to explain the tools and supporting processes that can help to explicate the use of idea management tools on macro level in organizational innovation context as well micro level in terms of features ,design and idea portfolio .

3.2.1 Interview Analysis

The interviews consisted of hours of recorded material which were listened repeatedly and transcribed word by word by the researcher. This generated as discussed before, 100 pages of transcript. The data generated as a result of these transcripts was analyzed rigorously multiple times to gain deeper understanding of the conversation in terms of meaning and context (Powell & Renner, 2003). The analysis began by consulting the literature review, interview protocol and previous research to identify the common themes related to the research topic. These emergent themes were then used to create preset codes; one common theme consisted of many preset codes. These preset codes were then used to code the transcript. The emergent themes were identified by utilizing the co-occurrence of different preset codes. The codes are shown in the table below.

Common Themes	Preset Codes	Explanation
Personal	Background, Job role, view point, actions	Personal information, definitions, actions and experience related to the research
Organizational	Innovation Initiatives, Innovation activities, Innovation team, idea portfolio	Organizational view point, assumptions, expectations and experiences related to the research topic.
Technological	Idea management tool, design of tool, features of tool,	Organizational and specific view points, actions, assumptions, expectations and experiences related to idea management tool.
Behavioral	Motivations, Success Factors, Challenges.	Organizational and specific viewpoints, assumptions, experience and actions.

Table 3: Common Themes and Preset Codes

In the first step, each line of the document was open coded. All the open codes were considered unique to begin with. Then these open codes were checked against the preset codes. The procedure was repeated and codes checked and re-checked several times .These preset codes were used as initial grouping for open codes but it was avoided to force each line into these themes. If there were some open codes that did not fit into the themes they were used as unique entities. Since each case presented some unique set of data. The open codes related to preset codes of idea management tools; explain the concept of actual vs assumed use, identified vs assumed success and challenges were re-examined. Specifically any co-occurrence of preset code with title of idea management tool was rechecked several times.

The software QDA minor was used to code each line of the transcript after manual coding was completed. This helped to calculate code reoccurrence and frequency of each preset code. To avoid biased results the whole process was repeated several times. This repetition was also used to identify if these themes and preset codes are most relevant to the data and if any specific theme is missed or over looked. This also helped to eradicate three preset codes because of almost no occurrence (N<3) and 100 percent co-occurrence with other preset codes.

The co-occurrence was examined at least three times against each open code. Then **13 Research Memos** were written for each case. These memos were based on the relationship between open codes and co-occurrence of preset codes. These research memos were used to cross examine each case for similarities and differences and then to identify the prime concepts or groups that are common in each case organization and software solution providers. Figure 11 shows the steps of the data analysis methods and emergence of most common themes later used to present the result in chapter 4.

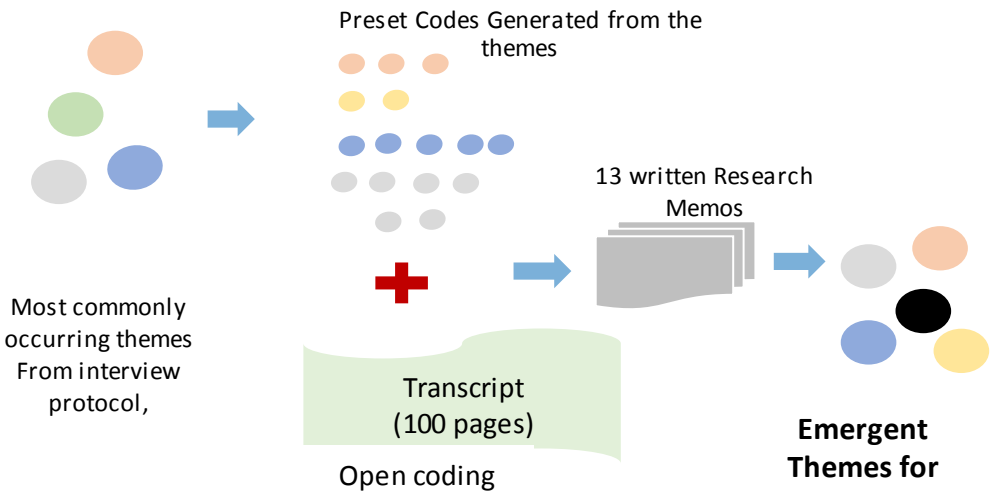

Figure 11: Data Analysis Methods

3.2.2 Procedure of the Study

The procedure of study followed an in depth literature review which helped to generate the theoretical interpretations related to the topic of the research. This is followed by studying the phenomenon in the practical situation which also generated enormous amount of data and rich interpretation. Theoretical interpretation helped to structure research design by incorporating the main attributes related to idea management tool. As the research continued the possibilities that appeared by exploring actual phenomenon from real life examples added to the theoretical interpretations. Thus a complete picture contains elements of theory and practical knowledge from tool use. It can be assumed that results generated by combining both approaches can be applicable across the organizations using or about to use the idea management tools.

Chapter 4: Results

To the reader: In this section the results of the empirical case study of this thesis are discussed. As mentioned earlier the data collection was done for the multiple case studies. Firstly the information and results related to each case company and their innovation practices related to idea management tools are explained in this section in detail. Then the combined results are presented using the emergent themes of the data. These emergent themes are represented in the Figure 12 along with the explanation of result representation.

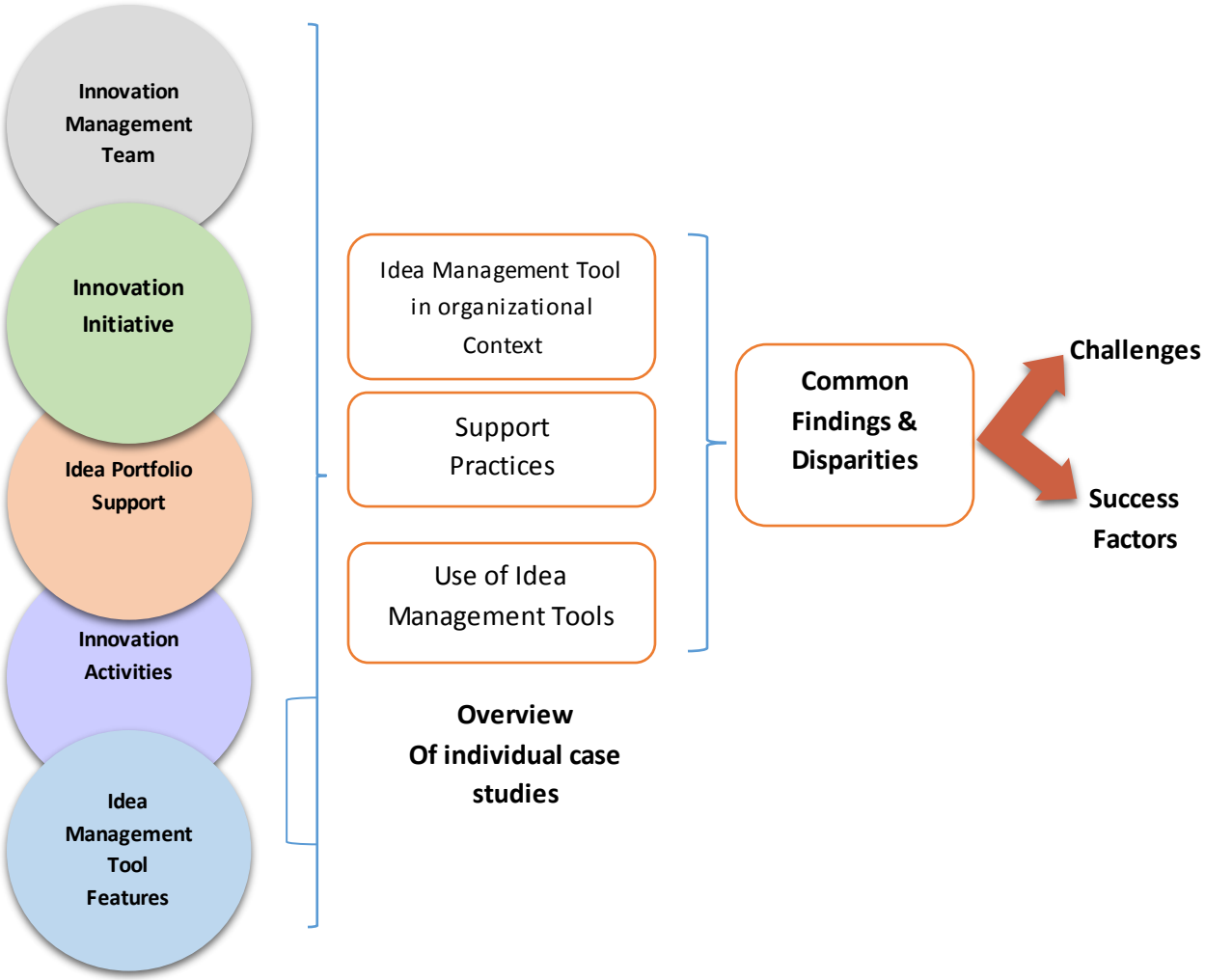

Figure 12: Framework for Results

Using these themes as inspiration for each case organization the results are discussed in terms of idea management tool use in organizational context. This means results show how these tools were adopted and what is the current status of the tools in particular case company? This is followed by discussion on support processes and use of the idea managed tools. Each of the themes had maximum occurrence in the data that is why they are used while explaining the result. Each of the themes is explained for the

cases in form of the table. Here it has to be noted elements in each case which do not fit to these themes are also explained by quoting them as "miscellaneous" in table 4. Below there is an overview of each defined theme.

Innovation Activities: *Refer to all the organizational and individual activities that are related to innovation processes, management of processes or idea management tool.*

Innovation Initiative: *Refers to steps or actions that are taken to introduce something new related to innovation in organization. This something new can be a tool, competition or promotional activities or team.*

Innovation Team: *Refers to all the team members associated with roles related to promoting, introducing, enabling or managing the innovation related tasks or activities.*

Idea portfolio support*: Refers to the ideas or innovations supported by the idea management tools exclusively. It also discusses different ideas received in the tool based on content.*

Idea Management Tools Features*: Refers to features, support processes and development model followed by an organization.*

There are cases (N=3) where these tools are still in transition phase with assumed characteristics of the tool that can only be tested in future. These cases are explained along with current organizational arrangement related to idea management. The disparity that arises from the actual use of tool and assumed use of tool is pointed out. The individual case studies are explained just as the overview to get familiar with the data. The unique and common processes and activities and the consequences of such activities are discussed in the later part of this section. The chapter is concluded by discussing the challenges and success factors that affect the use of idea management tools.

The terminology that will be used is explained here, the case studies from where data is gathered are referred to as Company A, B, C and so on while software solution providers as software solution providers A, B & C. Idea initiator is any employee who puts the idea forward for evaluation, say in an idea management tool or where the tool is missing through some other channel; innovation team is used to explain all the members of an organization who have are responsible for managing, promoting innovation activities and responsible for innovation initiative in organization. These activities can be managing idea management tool, facilitating the tool, coordinate with other businesses etc. These roles are described in detail in the section below and explained in the text when they appear for the first time.

4.1 Idea Management Tools in Case Companies

This research has gathered data from multiple case studies. To give users an overview of each case these organizations are briefly discussed, then the results that were obtained from each case are explained by explaining the support processes related to the tool, features of the tool and the content in terms of idea managed by the tool. As the focus of this research is the idea management tool the use of these tools are explained here in larger organizational context with other innovation initiative/activities. Unique and common findings in details in terms of context and consequences are explained for all the companies in separate section.

As discussed earlier 6 International organizations representing the industrial, chemical, IT and manufacturing section and 1 international and 2 local Finish software solution providers of idea management tools were studies for this research. The table below gives an overview for the reader regarding each organization, the informants that were interviewed and the state of idea management tool at the time of interviews.

Organization	Industry	Operation	No. Of Interviews	State Of Idea Management Tool
Company A	Manufacturing	International	3	Fully Functional
Company B	Chemical	International	1	Fully Functional – some changes planned soon.
Company C	Manufacturing	International	1	Fully Functional
Company D	Chemical	International	2	Transition phase-testing the tool
Company E	Chemical	International	2	Transition phase-requirement gathering
Company F	IT	International	1	Transition phase-planning

Table 4: Description of Case Companies

Organization	Industry	Operation	No. Of Interviews	Portfolio
Software Solution Provider A	IT	Local Finland	1	Many ICT based solutions.
Company B	IT	Local Finland	1	Focused on ICT based innovation management tools.
Company C	IT	International	1	Many ICT based solutions.

Table 5: Description of Software Solution Providers

Next the details findings related to each company are discussed.

Company A:

Organizational Context:

Company A is huge manufacturing company from Finland which is operating globally with more than 10,000 employees all over the world. The company deals with manufacturing industry and comprises of different business divisions. As a corporate level innovation Initiative Company A has formulated a strategy that involves support of innovation activities, cross business collaboration, enhancing innovation culture and managing all these transformational activities. Idea management tool is one of the most important parts of this organizational innovation initiative. The company has been using an idea management tool for more than two years. This is a corporate wide tool with access to all in the organization. The use of tool is promoted as a platform to manage day to day innovation activities and provide "some structure to fuzzy front end of innovation". The tool is used to handle and manage ideas until the recommendation phase. After this phase the ideas become responsibility of specific business division

Support Processes:

Idea management tool is supported by various practices and initiatives to enhance the use of tool. An innovation management team is created to manage, support and promote the tool company wide. The team includes like of innovation manager responsible for corporate level innovation strategy, innovation

coordinator who facilitates the idea process by acting as medium between idea initiator and idea evaluators and an evaluation team which is a group of nominated personals from different businesses who evaluate idea for further processing or recommendation. The idea management tool is promoted by the top management and innovation team alike. The company faces some challenges regarding the commitment of middle management who do not see the value of tool in day to day operations and prefer the traditional face to face, email etc. methods for idea sharing. Company A has given special attention to develop a feedback time for the idea initiator and this feedback time is perfected after testing several time periods. The thought behind this is to keep the idea initiator interested in their idea and keep them engaged by providing timely feedback where system is not converted to a "black box" with only input and no output. The company sees the value of input from customers and partners as very important for the innovation and idea management process but does not want to make external contributors like partners and customer as part of the tool contributors. They see it as a bottle neck in terms of tool merely becoming a complaint front for customers and it might not be possible for them to manage their expectations.

Inspirational practices are adopted to promote use of tool. These include several challenge based idea competitions like theme of the month, idea of the month. Winners of these competitions are rewarded and success stories are promoted to inspire and motivate people to participate. The company does not have an explicit rewarding system in place where each contributor is rewarded and people are incentivized using success stories and challenge based approach.

Idea management Tool Use

Idea portfolio managed by tool includes all product, service and business related ideas. Being a manufacturing company the product technology ideas are abundant. In view of organization idea management tool supports the incremental innovation as the idea submission and evaluation is standardized. The radical innovation requires evaluation for each idea separately and it can pose difficulty with standard evaluation in terms of lack of expertise or knowledge at the time of evaluation. Radical ideas add complexity to the system and thus are avoided. The tool does not support the collaboration between the idea initiator and other employees so this is seen as one of the challenge by the innovation team. Another useful feature company see for the use of tool is that it has successfully become an idea bank where ideas can be searched and utilized for later use.

In essence the company sees the value of tool in combination with these support processes. The tool serves as one element of the larger innovation initiative to bring the culture of innovation in organization and this was stressed by the informants several times.

Company B:

Organizational Context:

Company B is company from Finland operating internationally with more than 5000 employees. The company deals with chemical industry and is one of the key players in its field. The company has a corporate level idea management tool which is in use for more than 2 years. The tool has gone through several iteration and testing phase and there are still some changes that are in the pipeline to make it easier to adopt and use. It is a companywide tool accessible to all. The corporate level innovation strategy is still in pipeline for the company. The tool on the other hand was seen mainly by other employees as the platform for research and development to put ideas forward even after it was introduced to all the employees. To prompt the use of the tool company recognizes that it requires change in the attitude of top and middle management by actively promoting the tool and stressing its importance for organization and value it can bring. The innovation initiatives are being taken in this respect and importance of idea collection, sharing and bringing this culture of open innovation is promoted.

Support Processes

For Company B innovation initiatives are now in process as they have identified bottle necks in their current use of the tool. Company B also has innovation team with innovation manger and other members. The team has one full time member acting as innovation coordinator facilitating and promoting the use of tool and enhancing the culture of innovation while other employees dedicate some of their time to support innovation activities and tool. Then there is a nominated evaluation team of 9-10 personal who evaluate all the ideas that become part of the tool. Innovation coordinator does initial refining of ideas and delegate them to the responsible personnel. There is no fixed time to give feedback to idea initiator it depends on the idea content, so some ideas may require more detailed evaluation and collaboration than other. The company understands the value of input from customers and partners as very important for the innovation and idea management process and as future prospect they want to create some projects in the idea management tool with the suppliers and customers as we ll but right now tool does not have this functionality.

There is competition based approach to gather idea supported by the tool. Then there is a group of trained employees who act as facilitators and conduct workshops and brainstorming sessions to generated ideas related to specific area, project or new direction. These ideas from work shop are then

transferred to the idea management tool where others employees can also assess them. Other employees are then encouraged to participate by putting ideas to the tool, the facilitators and managers are supporting company's innovation initiatives. Company B also uses the success stories of ideas that reach the implementation phase or generated value for company as motivation factor for others to participate and see their work appreciated and implemented.

Idea management Tool Use

Currently Idea portfolio managed by tool includes all product and marketing ideas. In view of organization idea management tool supports the incremental innovation as the idea submission and evaluation is easier for incremental ideas with set of expertise and knowledge at hand. In this company the radical idea may require a large time to fully developed or understood and the evaluation may require external inputs from partners, suppliers and government. So tool is seen more suitable for incremental innovation. The tool support collaboration between all the employees. After idea submission the idea does not directly goes to evaluation rather there is a development period where other employees can build or comment on the idea submitted. Request for comments can be voluntary or it can be made by idea initiator or innovation coordinator.

In essence the company sees the value of tool only if there is a culture and innovation strategy that supports it. The company is at the phase where some of the practices related to the tool use are being changed. The company had the approach where ideas were not classified same as business divisions and it created confusion for idea initiators. So the changes are proposes and it is assumed that they can make the use of tool more frequent as it will be more easy to use and follow. For instance the ideas are not classified according to the business division where the responsibility of idea development and decision for implementation is delegated to the business units.

Company C:

Organizational Context

Company C is internationally operating Finnish organization with more than 20,000 employees. The company deals with manufacturing industry and is one of the biggest players in its field. Company has gone through recent transformation. The corporate level strategy has been reformed in terms of organization re-structure, defining new focus areas and business divisions, re-invention of current business and finding new business opportunities. Idea management tool was introduced company wide as part of this transformation few years back. It is a companywide tool accessible to all. Since the new strategy was defined the idea management tool was deployed to gather all the ideas and enhance cross

business collaboration and discussion. The important factor in Case Company C is that idea management tool is not considered as only source to provide ideas ,to truly promote culture of innovation other more traditional means to share ideas are also encouraged. The main reason behind such attitude is explained to promote the culture of innovation, openness where the medium to share ideas is not important but rather ideas being shared bring real value for organization. So idea management tool is not the only channel to share ideas but serve as one among many. Also all ideation and innovation is directed by the strategy or new business areas communicated to the employees by top management. So each idea submitted to the tool has to fit the current strategy.

Support Processes

For Company C the idea management tool is a platform that is very open and flexible. There is innovation manager (same role as innovation coordinator) whose responsibility is to manage the tool and processes on corporate level but there is delegation of responsibility to different business divisions to deal with ideas that are submitted to them. The evaluation team is also selected or nominated by the businesses. Which means the ideas initiator can submit ideas to the divisions owned by each business unit. The fate of idea from there on is responsibility of each business. The business divisions are accountable for evaluating and providing feedback to the idea initiator. There is no fixed time to give feedback to idea initiator it depends on the processes followed by each business unit. As some ideas may require more detailed evaluation and collaboration so each business unit has their own process to follow the idea through the idea management tool and then decide if it should be implemented right away or then put on hold or need more research.

Not having very strict rules and time lines for idea evaluation is explained by the fact that although the idea management tool is corporate wide, the actual ideas require evaluation from most relevant people who have knowledge regarding the idea. In this sense the businesses are free to define their own processes and time line to evaluate ideas and provide feedback. The company stressed the value of input from partners and customers as very important for their innovation processes as for their projects, they work in collaboration with them using technical or other knowledge or support. Based on this fact they are really looking into the prospect of using the tool to do joint projects with customers and partners in future.

To motivate employees for participation there is competition or challenge based more directed ideation supported by the tool. Businesses or individuals can create challenges in the tool and ask for participation from everyone in the organization. There are also corporate wide competitions with small rewards but

the company wants to create a culture of innovation where ideation is based on the intrinsic motivation to contribute for the organization instead of using external motivators.

Idea management Tool Use

Currently Idea portfolio managed by tool includes product, internal process and business re invention ideas there is not so much focus on service related ideas. In view of organization idea management tool supports both the incremental and radical innovation. Although it is widely understood that company has existing assets in terms of knowledge and equipment which can be best utilized by incremental ideas ,as these ideas can become part of existing projects and does not require extensive support in terms of money and resources. On the other hand the radical ideas need to be fully developed and evaluated as based on the industry they might require huge investment and resources and time to generate return on investment. So idea management tool support both kinds of ideas, it is the decision making to implement the ideas that create challenge. The tool support collaboration and discussion between different businesses. All the ideas in the tool are by default visible for everyone in organization but there is a possibility to make small groups within the tool to develop ideas together before sharing. This feature can be used by employees if they do not want to share their ideas openly.

In essence the company sees the value of idea management of the tool as part of the transformation that is directed by the company's strategy. The tool is only effective if it has support processes and organizational culture and attitude to support innovation.

Company D:

Organizational Context

Company D is Finnish organization operating globally with more than 2000 employees. The company core business is related to chemical industry. The company has a strategy that focused on aggressive growth, cost saving and efficiency in products and service. Innovation is considered as part of company's portfolio to attain the strategic goals. The company has created an innovation plan and road map as an innovation initiative. The deployment of idea management tool as a companywide platform to gather ideas and support innovation efforts is part of this plan. At the time of interview the tool was still in the testing phase and will become fully functional for whole organization in the future.

Support Processes

Although the idea management tool is still in the testing phase, there are support practices s already in place to collect ideas from existing solutions and enable the tool once it is launched. The company has an

innovation team with members from all the business units. Few team members are fully dedicated while other members spend 10-20 percent of their work time to the innovative efforts. All the innovation team members were selected by interviews and then formally trained in the workshops to learn about the innovation tools, processes and facilitating innovation and idea sharing practices in organization. The company has a road map and set goals to attain the most benefits from the idea management tool. The company already has some in house idea sharing solution based on existing tools, word spread, emails or company page where anyone can post and share ideas. These ideas are taken care of by innovation team members to evaluate or take these ideas and present them in the business meetings. The innovation initiatives including launch of an idea management tool is supported by the top management where the importance of sharing and openness is communicated to all employees. For idea management tool Implementation Company D has gathered requirements by research, testing several tools available in markets and benchmarking Finnish and other international companies. Like all other companies discussed above this company also want to make the tool available for customers and partners in future but not in the first phase.

The company has decided a time frame for the idea evaluation and feedback not to be more than 45 days. The evaluation team has also been nominated and it has representative from all different businesses. Employees can nominate themselves to evaluate an idea if they find it interesting and have the knowledge and expertise

One important aspect of that company wants to embed in idea management tool is trend tracking where the most relevant trends related to their business can also be shared in the tool. These trends can be a starting point for the company to identify the weak signals for future development or then see the problematic areas that need improvement.

Inspirational activities have already been happening in the company to make people aware of the idea management tool and support practices and allow them see the results of these competition in form of success stories. The company organized challenges in specific categories and best ideas were rewarded and shared with all the organization. Company understand the importance of building a culture of innovation by enabling openness and knowledge sharing to inspire people to ideate once the formal platform is in place.

Idea management Tool Use

Idea portfolio managed by tool will includes product, service, marketing and process improvement ideas. Although being a manufacturing company the product technology ideas are abundant as seen by others channels like in house idea management solutions, suggestion boxes, emails and company's intranet. The

company sees that idea management tool will be able to support both incremental and radical innovation. But like previous cases although the importance of incremental ideas is highlighted as company requires continuous improvement in the existing offerings the importance for radical new risks to expand businesses is also understood by management. So the idea is to make tool functional to support both kind of ideas. The radical idea may require more elaborated evaluation in terms of risks, available technology and commitment in terms of money and resources but employees will be encouraged to share both.

The tool is set to support the collaboration between the idea initiator and other employees. Other employees can give comments and thumbs up for the ideas. The company also plans to use the idea management tool as idea bank where the archived ideas are available can be searched and utilized for future projects.

In essence the company sees the value of idea management tool as very important aspect in the overall innovation initiative. Since they want to share knowledge between different businesses and countries the tool can be a one starting platform to achieve this collaboration. The real problems and challenges will become clearer for the company once the tool is in place.

Company E:

Organizational Context

Company E is Finnish organization operating globally with more than 3000 employees. The company core business is related to chemical industry. This organization is going through the transition phase where the focus is shifting to create and enable processes that engage employees and develop innovation culture. The company has an idea management tool but it is used in R & D and not in the whole organization. As an innovation initiative the company is developing support practices that can enable the use of tool and support continuous idea collection from the whole organization. These support practices are related to collection, evaluation and sharing of ideas. Company E has a perspective that ideas are circulating in the organization but they need a platform where they can be gathered, evaluated and managed to bring innovation culture by sparking idea sharing, cross business collaboration and collective decision making.

Support Processes

As an innovation Initiative Company has created a team called “innovation community” which comprises of representatives from all the business divisions. The members of team are spending some hours of their work time to further the innovation activities in organization. These initiatives include creating innovation road map, designing idea collection competitions, training and workshops for senior management and

developing the processes that can enable idea collection using Idea management tool. As mentioned earlier the company already has an ICT tool but it is not utilized efficiently for the whole organization. At the time of Interview Company is in the process of gathering requirement, designing the evaluation process and discussing the feedback time towards idea initiator. The company plans that the feedback time will not be longer than three months. The evaluation team will have representative from the all business divisions of the company, the evaluation time can vary depending on the content of the idea, and more technical idea might require input from technical experts as compared to a marketing idea. On similar note the company wants to have collaboration between their customers and partners as an option in future. But they discussed the need of processes and rules for the ownership of the ideas if they pass the screening and go to implementation.

Two companywide competitions have been conducted as innovation initiative to engage employees and ensure participation by promoting them throughout the organization. This was also used to introduce the tool to the employees as they were able to submit ideas for this competition through idea management tool. The evaluation was transparent in terms that all ideas and evaluation was visible to each participant and open discussion was encouraged regarding any issue from idea submission to selection. The success stories from these competitions were shared throughout the organization. These activities also served as testing or piloting the use of tool.

Idea management Tool Use

Since the requirements are still being gathered some of the key features that company plans to have are collaboration in idea development and evaluation. Which means an idea initiator can ask for the other employees to develop or contribute to its idea and develop it further. Similarly all idea will be evaluated in a joint effort from different business units. The idea submission and evaluation criteria are also standardized but they can vary based on idea content.

In essence the company sees the use of tool as an important platform which can gather ideas from all possible sources within the organization and at the same time bring culture of openness and sharing. Using the tool for idea competition served as testing ground for them where they were able to learn from experience and these learnings will become part of the company wide idea collection tool.

Company F:

Organizational Context

The company F is a technology company operating globally with more than 3000 employees. The company is in a transition phase of implementing a companywide idea management tool. Innovating and

coming up with new ideas is one of the company's core value and it helps to give them a competitive edge. The company has invested heavily in research & development projects over the years. The idea collection processes and tools are currently used only in R&D and not for all the organization. Due to the higher management (top down) and bottom up (employees) pressure to develop a platform where ideas from all over the company can be collected, the company felt the need to have an ICT based idea management tool. This tool can serve to collect, gather, develop and evaluate ideas not only from R&D but from other business units as well. The other reason to use this tool is to develop the culture of idea sharing and cross collaboration.

Support Processes

The company has a development team and support from the top management, who has gathered requirements and defined the features for idea management tool. The development team has developed processes that will provide feedback as soon as possible and no less than 45 days to idea initiators. Secondly the idea submitted will be readily followed to ensure that ideas made to evaluation after recommendation from the system. The evaluation team will consists of representatives from different business units where evaluation time can be dependent on the content of idea. Using partners and customers as part of the idea management tool the company see it might not be a very good option as they have highly competitive operative markets and ownership of idea is important for their industry so they do not see it as an option for now.

The company has been thinking about the methods to motivate the employees as part of the idea management tool development. Some of the features that are still being discussed but not implemented yet, are introducing the rewarding system, having competition or challenges to have target based idea sessions. But since all of this is in planning phase the real results of implementation will become clear after the tool is actually implemented and tested. The tool itself will support collaboration from the stage of idea submission to idea evaluation. The idea submission, evaluation and feedback will be visible to all employees. Idea will be evaluated based on the content

Idea Management Tool Use

The idea portfolio will consist of incremental and radical ideas. The company wants to utilize this tool specifically for radical ideas as according to them the incremental ideas can easily become part of the projects. These incremental ideas are being shared using existing channels of meetings, workshops, emails etc. To develop their business further they need transformational ideas. Similarly being a technology company most of the ideas are product or technology improvement. Once the idea

management tool become fully functional directed idea sessions or other methods will be used to get service ideas and insights from customers and suppliers.

In essence in company F, R&D is specifically making an effort to share and develop ideas. The company has identified the need that there are ideas that do not get a channel to be shared. After research and benchmarking many idea sharing processes it has been decided that an idea management tool can serve this purpose.

Summary of Findings

Now a summary of all the findings are presented in form of the table before proceeding further. The findings related to each company are explained from the perspective of the emergent themes as discussed in the precious section of this chapter , the unique attribute of a particular case company is explained under the sub heading of “miscellaneous” . In company the innovation initiative and activities, Innovation management teams, idea management tools features, idea management tool features, idea portfolio management, support processes and unique activities are explained. The companies with the fully functional idea management tool are represented by blue color while the one in transition phase of tool deployment are represented in orange.

Organization	Innovation Initiative/Activities	Innovation Management Team	Idea Management Tool Features	Idea Portfolio Support	Miscellaneous
Company A	Corporate wide Innovation strategy, Challenge based ideation, Theme of the month for ideation and idea of month rewarded.	Innovation team in place with innovation manager, innovation coordinator and cross business evaluation team.	Fixed feedback time to idea initiator, no collaboration between the employees supported by tool, standard idea submission and evaluation procedures. Support for target ideation in tool.	Mostly incremental ideas supported by tool due to standardize procedure the radical idea are difficult to judge.	Company does not see the use of tool open for partners or customers at one point, Commitment from middle management is seen challenge to increase the use of tool.
Company B	Corporate wide innovation strategy still in progress, Ideas from meetings and brain storming can be made part of the tool for future.	Innovation team with innovation coordinator and evaluation team consists of representatives from R&D and one business representative.	Tool lacks structure as the ideas are not categorized according to businesses, no fixed feedback time dependent of idea content, standardizes procedure for idea submission and evaluation although time of evaluation can vary. Supports collaboration in form of comments,	Tool ideally supports both innovation radical or incremental but in reality it is seem fit for incremental innovation to the company.	For future collaboration between customers and partners through idea management tool is an option.

			voting. Support for target ideation in tool.		
Company C	Change in corporate level strategy, innovation is driven by strategy. Idea implementation is responsibility of businesses	Innovation manager responsible for maintenance and use of tool. Business lines are responsible to nominate the teams for evaluation.	Open and not encouraged as only method for idea sharing. Evaluation and feedback time is responsibility of business lines. Support for targeted ideation in tool. The tool allows group work as well to support individual way of working.	Tools is ideally fit for both innovations as evaluation depends on idea content but generally due to availability of assets, lack of resources the radical ideas do not go further.	Company see tool as one channel of idea sharing and not the only channel. Evaluation and other procedures are not standardize companywide but depends on the business line idea been submitted to.
Company D	Companywide innovation plan and road map of activities including an idea management tool. Competitions and rewards and success stories being shared.	Innovation team with representative from each business and country, while separate evaluation team from different businesses.	Standardize evaluation, idea submission. Collaboration at each stage of the process. Competitions, target ideation support.	Tool is assumed to give support for radical ideas. But value of incremental ideas is necessary for the company.	In future collaboration between partners, supplier. The company will have trend tracking functionality in tool so that future prospect can be seen.
Company E	Corporate innovation policy and top and middle management	Innovation team called "innovation community".	Standardize evaluation, idea submission. Collaboration at	Mostly incremental but radical ideas will be	In future collaboration between partners,

	trainings and support. Companywide competitions are conducted to make employees familiar with tool before it is launched for continuous idea collection.	Representative from all different business lines and countries.	each stage of the process. Evaluation will be based on idea content and so does the feedback time but it will not be more than 45 days.	encouraged. The evaluation team can be flexible based on the content of idea.	supplier. Competitions served as testing for the tool use. Company had the same idea management tool for only R&D but lacked support processes and thus tool did not work.
Company F	Top down and bottom up pressure to develop a platform for idea collection, Innovation initiative to develop a tool.	Innovation coordinator and some members from R&D will help in enabling the tool. The evaluation team will be selected by each business.	Standardize idea submission and evaluation. Feedback time will depend on idea content.	Tool is specially assumed to support radical ideas. But both ideas will be favored.	The evaluation is content dependent. The company see that the open knowledge sharing with partners and customers can create issue of idea ownership.

Table 6: Emergent Themes and Findings

Next part briefly discusses the software vendors who provided the idea management tools for different organizations. These companies as software vendor develop the ICT based idea management tools for companies for all different businesses. Since this company has experience in providing ICT tools for many organizations. They were interviewed about what are the most desirable features that companies require in such systems and their view point regarding the success factors and challenges faced by companies in introducing and implementing the systems.

Software Solution Provider A:

The company is a local Finnish company providing numerous software solutions one of which is idea management tools. From this system providers point of view the system has to be simple to use and adaptable for organization. The system must provide an easy standardize way of submitting ideas and an

open evaluation procedure in place where idea initiator not only gets feedback or thumbs up from other employees but from management as well. One important aspect that the company discussed is the implementation of ideas after evaluation so ideas need not only be evaluated but also implemented to show the real results for the idea initiator as well as top management. Secondly training and enabling the employees to make them familiar with tool is very important aspect while adopting the use of tool.

Software Solution Provider B:

The company is a local Finnish company focusing only on developing and providing idea management tool to the companies. The company has numerous clients using their idea management software and many success stories to relate to. In their point of view unless there is a culture or attitude change in organization where employees feel encouraged to share idea openly there idea management tool cannot make impact. So companies need to focus on approach of building this culture or attitude first and then using the tool as a mean of platform where all steps are easy to follow and standardized. Although they have an opinion that each company has different day to day working methods and in this respect they provide very flexible software solution which can be adjusted according to the organizational needs. This software vendor argues the importance of using competitions and other directed techniques to make people familiar with tool is an intelligent initiative from the company as it allows them to see the results in very short period of time. Secondly they also believe that to show the value of tool the ideas have to go to implementation after evaluation or recommendation to calculate the return on investment for any organization. If company has numerous great ideas but not many go to implementation then the tool may lose its importance in long run.

Software Solution Provider C

The company is a Finnish company operating globally and providing software solutions to numerous organization and idea management tools is one of these solutions. The company sees idea management tool as an element that helps them to build trust with their employees and allow them to share their own experience with them They have a point of view that idea management tool is successful only if the expectations of all the stakeholders are managed properly. The reason why there is necessity of platform to gather ideas is communicated and employees and management are on the same page. This should also reflect in the attitude and culture of organization and this is possible when idea management tool generates value by actual implementation of ideas. Secondly they also support the idea of using tool more than just sharing ideas but also a predictor of future trends and identifier of the problem areas. This means using data analytics the company can identify the most discussed topics where ideas are shared

and identify that if there is a possibility of some new development in that area or else the ideas are mostly related to the issues which need eradication.

To summarize all software vendors, see the use of tool only if it is easy to use and help the innovation initiatives by creating a culture of innovation. For this purpose the enabling of all the employees by trainings, competitions, promotions etc. is necessary to launch the tool. But the same attitude should continue even when people become familiar with it. The role of managers and leadership is very important in the context of communicating and showing commitment towards the use of tool. Also they discussed that the idea management tool can be beneficial in long terms if ideas go to implementation and this is only possible if company make commitment towards the ideas that are recommended by the tools. Some of these findings are discussed in detail in success factors section.

4.2 Idea Management Tool: Most Common Support Processes and Features

In this section of findings features of idea management tool, the most common support processes and disparities are explained in detail. Since the findings presented in the previous section were more of an overview for each organization. Some points that are not discussed previously are part of this section along with success parameters and challenges.

4.2.1 Idea Management Tool in Organizational Setting

All the organizations being interviewed are huge established organizations except two software solution providers which operate locally. These organizations have been operating globally and have large number of employees working in them. Organizations have very clearly defined hierarchy and job roles for the employees. More over each organization had multiple business units with each having clearly defined functionality and their own hierarchical structure. This has created a formal working environment where each business unit was responsible for development efforts that lead to innovation of their own portfolio. Secondly it was also mentioned by several interviewee that each business may follow their own processes to implement ideas and thus there is no standard process at the organizational level for implementation of idea although some variation of development models like “stage gate” might be followed by various businesses. Company C clearly mentioned

“Some businesses are more flexible while other follows very strict stage and gate or some other model for development activities”.

So the collaboration between businesses although encouraged might be hard to achieve as they follow different developmental models, planning and project timelines. These boundaries somewhat have

created a rigid control setting where it can be seen as a closed atmosphere. This has to be noted that these conditions are also the key to understand, why there is a need to have a change is “culture” is mentioned by all informants. Thus the need to have a platform was identified to gather ideas. In all organization there is a very clear corporate level strategy. Each business has their own portfolio which may be governed by this strategy. Businesses are responsible for their own day to day innovation activities in terms of idea sharing and implementation but there are corporate wide innovation activities happening in form of challenges and competitions in each case company.

In majority of case organization prior to the introduction of idea management tools and the organizations still in transition phase research and development department might be considered as main source of ideas and innovation for the company. It was also clear that the sales, marketing and on field staff is considered as the ones facing the customers. Company A, B, E, and F specifically discussed that these employees are windows to the customer insights as they spend the most time with customers. All the employees are not involved in the innovation activities explicitly. Due to these findings companies have identified that many potential ideas do not surface as there is no platform for sharing them. Secondly existing solutions or ideas are not shared between businesses and thus there are cases of “reinvention of wheel” explained by informants.

This said it was clearly discussed by all interviewees that prior to the adoption of tool or beginning of transition phase to have a tool in future, all the case companies have identified this need that innovation cannot be centralized to one or few departments. They discovered a need of a common platform that supports “culture of innovation”, the term used by almost all the interviewees. This term “culture “from the context of interviews referred to practices that can create an atmosphere of openness, sharing and cross business collaboration to drive innovation activities.

This term culture is important to understand, as all the companies consider idea management tool just as the platform of innovation initiative. So they promote tool as a part of innovation culture and not the other way around. For all the organizations being interviewed there have been some more in house or other means or solution in use before the adoption of an ICT based tool. These include suggestion boxes, spread sheets, intranet, emails or facilitated joint brain storming sessions. Once the need for idea management tool was identified all companies have taken innovation initiatives to make the tool adoption successful. These initiatives include having some form of fully dedicated or partially dedicated set of employees from different business units called “innovation teams”. The role of the innovation team before the adoption of the tool was gathering requirements, researching the best idea management solution available, benchmarking other organizations and creating a road map of innovation activities. They also promote, enable, support, facilitate and help maintain idea management tool as part

of these innovation initiative once tool become fully functional. These are generic functions of innovation management teams common to most organizations.

Once Idea management tool is introduced it served as “front face to promote culture of innovation” as said by Company A. The launch of the tool is communicated using internal promotion in form of emails, newsletters or formal emails. All the companies see role of top management in adopting the tool quite important. All the companies have at one point used a targeted innovation technique in form of monthly, quarterly or yearly idea competition to promote idea management tool. Even the companies where the tool implementation is still in transition phase, has used this technique to make people familiar with the process of idea sharing, evaluation and feedback in short time period and build trust. Similarly all companies have used sharing success stories as one of the methods to motivate employees and use the tool where they can see the results. Similarly some organizations have created a two way discussion channel where idea initiator can actually discuss the feedback or evaluation.

4.2.2 Innovation Initiative and Activities to Support Tool Use

All the companies being studied identified the need in recent years to have a platform where they can collect, share and evaluated idea as part of a bigger innovation initiative. Here it was clear from the interviews that this transformation can be related to changing marketing conditions in case of some companies (C, D), finding new businesses (company A&E) or staying ahead of competition (company F). This is also validated from the fact that all the organizations either adopted an idea management tool or started a transition phase to adopt such tool.

If we look at the common practices related to idea management tool, the 3 case companies with tool in place have made all their business units well aware about the launch of the tool. The tool as mentioned is seen as “front face” of the “innovation culture “that company wanted to adopt and top management seemed committed to this cause right from the start. Several innovation initiatives have been used to engage employees in the process like competitions, trainings and idea sessions. The success stories of the ideas that have been implemented by using the tool are used to motivate employees and show to the management that tool generated value.

The companies still in the process of implementing the idea management tool have all started to promote the tool using initiatives like company-wide competitions (N=2), enabling or training the some employees from each business to act as the “catalyst” and motivate others (N=2) and creating a facilitation team to help employees become familiar with the tool in the first place (N=2)

The challenges lie in the fact that not all the businesses units are active to use this kind of software. The reason given was lack of motivation, using other channels for idea submission or not having access to the

work station. Some companies (A&B) want to eliminate this problem by using solutions like mobile application to submit idea anywhere. While other argued that real issue is not having enough interest to use the tool rather than the channel. Some see that tool is part of all other available methods of idea sharing so tool can serve as one channel for sharing ideas but not the only one. Other channels should also be part of the big innovation initiative.

4.2.3 Features of Idea Management Tool & Support Processes

The features for each company's idea management tool have been discussed in the previous section case by case. The companies that already have idea management tool in practice have under gone changes, modifications and upgrades based on the requirements that were identified after initial launch of the tool.3 companies in different transition phase have identified the features they want to have in their idea management tools based on research ,consultation and benchmarking other Finnish and international companies

In general almost all companies introduced the tool and made it accessible for the whole organization. The idea management tool is seen as a platform which is open to all employees to share all different kind of ideas. The idea is to support knowledge sharing and collaboration with in the organization. The word 'transparent" is used by many informants (N=5) while other used the variant to explain the same concept which is "tool will be open for all employees all ideas, evaluations and comments will be visible for everyone in the company, no matter belonging to which business units".

It was quite clear that all the case companies have made the tool very easy to use and thus making sure all the employees are familiar with it. The end users (N=2) being interviewed from company A very clearly stated that tool is intuitive and easy to follow.

So the process follows submission of an idea to the tool where the submission is standardized in form of a form and idea initiator has to answer few questions or rate their idea based on some preset criteria. These most common criteria were technology feasibility, novelty and market or business value (N=4 cases). The argument to have these criteria was to make tool more intuitive and make the idea initiator thinks about the idea before submission. The questions or themes that are part of the tool are to help the idea initiator reflect on their ideas. As reflected in one of the quote.

"People can submit the idea to build an electric car; but the tool should help them to spend 15 minutes or so to think how and why to build an electric car and then submit the idea. That said there should not be 15 or 20 questions to answer before submitting any idea so it will take 3 hours just to use the tool, that is why there is need to find the balance"

Some companies followed more open approach where any kind of idea can be submitted without answering any question or rating it (N=2). All companies were flexible about the format of the idea to be submitted where an idea can be a simple text explanation but idea initiator can also add pictures, illustrations or supporting materials based on their personal preference. Each idea management tool has some division or structure based on the business divisions in the companies. The idea submission process is organized so that idea can be submitted to particular business division. In each business division there were sub division related to Idea portfolios of the company for example retail related ideas can come under the umbrella of sales and marketing. This helps in the later steps of evaluation and giving feed back to the ideas submitter. 1 company lacked this structure and identified it as a problem which confuses the idea initiator as they had trouble submitting the idea to right business owners. This also created extra work for the responsible innovation manager to do an additional sort and then direct ideas to relevant evaluation teams. So Company was in the process of changing the initial idea categorization and making it more in line with the business units of the company.

More over all the tools had the functionality to post challenges and use the targeted idea methods to motivate participation. These challenges and competitions can be corporate wide or some specific business unit or a person can also request to create them in the system.

In all except one case, people can comment and build on each other ideas or give ratings in form of thumbs up. In 3 companies idea initiators can ask others to comment of give feedback on their idea. This was termed as “idea development period” by the informants and it can vary from organization to organization but it lasted at most from 15 days to one month. Comments and ratings were primary communication methods supported by the tool. This allowed the evaluation teams to prioritize the ideas for evaluation because it showed the most popular idea in the tool. Idea development by using commenting approach can also spark interest of other employees in the idea and can help in evaluation process as discussed by 2 informants. But if commenting or development affect the actual decision it was not clearly mentioned by any informant, but one company discussed that it might be possible that an idea that is not beneficial for company or do not fit strategy gets a thumbs up so in that case evaluation is based on the content of idea and not the thumbs or comments it received.

Related to the voting and commenting the companies see that the tool can be used for forecasting or trend tracking related to their industry and this is an important benefit for the use of the tool. One company discussed that trends of their particular industry can be seen tracked by adding tags or key words to the idea that are most relevant to current developments. Secondly some companies also discussed the areas that receive most ideas can be weak signal or future opportunity to exploit. Or it is also possible that this area has some issues and needs to be fixed In short the tool can be utilized for this

purpose but most companies are not exploiting the full potential of data analytics (N=2) companies have some processes associated with this feature of the tool. But most company sees this as a future prospect.

Most companies had an "innovation coordinator" who is mostly part of innovation team and looks after maintenance, prescreening, facilitating the tool use. In two organizations the innovation coordinator was responsible for sorting and then delegating the ideas to the relevant evaluation individual or team. For instance a very specific technical idea might go to the development team while a retail idea may go to marketing team. While in 1 out of 3 companies the idea coordinator does not perform the delegation of idea to evaluation team it is responsibility of the businesses line to evaluate ideas once they are submitted to the tool.

All the companies have evaluation teams that have representative from different businesses. These evaluation teams are pre nominated by each business unit. All the evaluation, comments and screening is visible to everyone in the organization. The collaboration between different businesses could occur at the evaluation stage as well. 1 company still in the transition phase also wanted to support open dialogue after evaluation in case if an idea initiator is not satisfied with the result or feedback.

After idea submission and evaluation in the next stage idea can have three fates (i) can be recommended for implementation (ii) needed some research before further continuation (iii) archived for the future use. All the companies discussed that there is no "rejection "status for any idea .The reason explained behind this decision was to avoid demotivating people and giving negative feedback using the tool. Secondly this can affect future participation. Even the archived ideas might have use in future.

The ideas that are recommended by the evaluation team were directed to the specific business divisions they belong to in all case companies. This means resource allocation, taking them forward is solely responsibility of the business lines. Innovation management team is not involved with the implementation decisions in almost all cases. The idea once evaluated and given feedback is responsibility of the businesses.

The feedback time is discussed as very important part of idea management tool smooth operation. All companies see it as a practice that builds trust of the person using the tool. As they see the fate of their idea in time from relevant experts. This shows that their idea is evaluated by using the knowledge and company took responsibility to evaluate it. So timely feedback is considered an important aspect to make the tool work efficiently. It seems the average feedback time for each case company is 1 to 2 months and all the companies strictly discussed not delaying it more than 3 months. 3 Companies (B,C,F) discussed the idea content can be a factor that determines the feedback time with some ideas requiring more elaborate evaluation than others. Nonetheless all companies agreed that an initial form of feedback and

response can keep the idea initiator engaged and interested in the process and build the trust to make them use the tool again.

A benefit that is created for companies by continuous use of the tool is the value it generates in form of an idea bank. Companies have many ideas being stored in a database after constant use of the tool .As informants discussed they can take advantage of these ideas in later years and searching or browsing through ideas can be really beneficial for the current and future projects.

4.3 Consequences of the Ides Management Tools Use

After discussing all the details regarding the use, design and support processes of idea management tools and the innovation initiatives and activities in organizational context. This section discusses empirical findings and generalizations related to idea management tools although they might be used in different settings or circumstances. These findings are gathered from all the interviews. It has already been discussed that not all the case company had fully functional idea management tool in place .There is no distinction made in discussing both the cases if the assumed practices are same as the actual ones. If there is a unique feature that is assumed to create a difference for some company; it is highlighted.

Based on all the case interviews a generic development model is created to reflect challenges and success factors of the idea management tool. Tools in all case organizations seem to have technical support processes that are related to submission of ideas, developing the submitted ideas, evaluating or rating the idea and then giving feedback or recommendation to idea initiator. This is shown in the figure below:

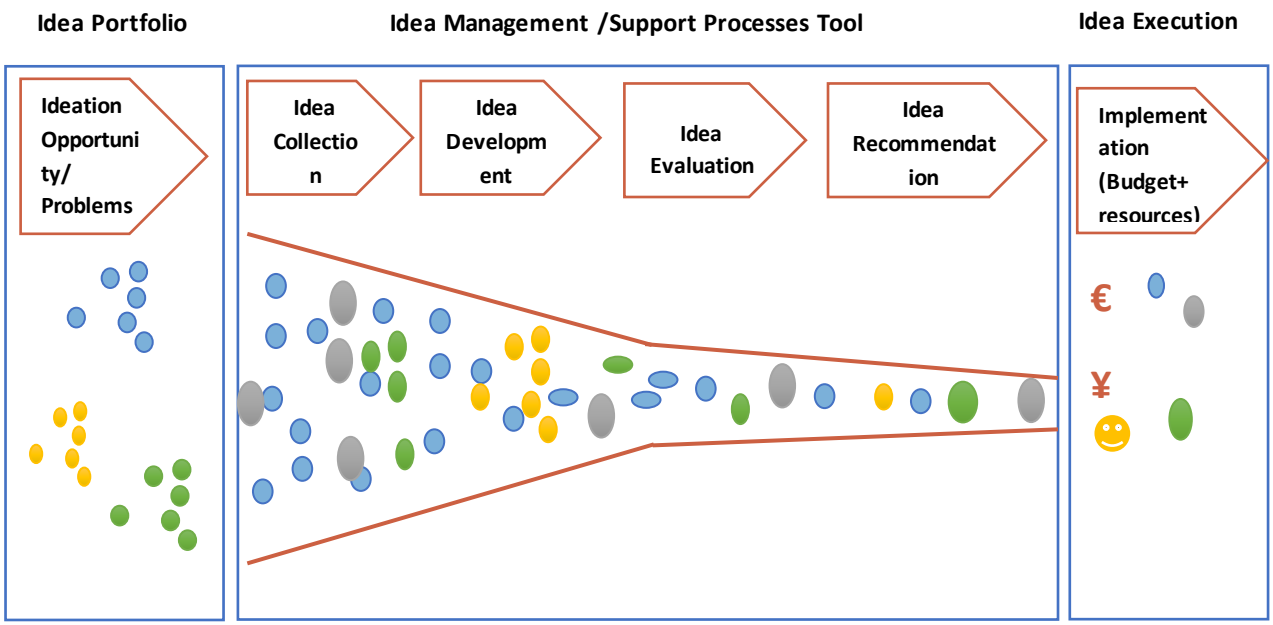

Figure 13: Development Model for Idea Management Tool

The consequences generated because of tool use and support processes are discussed in this section in form of challenges and factors that determine the success of an idea management tool.

4.3.1 Challenges in Idea Management Tools use

Informants readily discussed challenges they may be facing with use of idea management tool. Since these challenges create hindrance in the bigger innovation picture for companies they are important to discuss to understand the success factors for tool use. The organizations want to create open knowledge sharing "culture" or "environment". These challenges are discussed here for each section of idea development process discussed above:

Idea Submission & development phase Challenges:

Almost all informants discussed the lack of motivation from employees to use tool is one of the biggest challenge for successful implementation of the tool. The lack of motivation can stem from various reasons. Many interviewees discussed lack of time as one of the key factor that hinders the use of the tool. Since employees are busy in their operative day to day tasks it takes an effort to use the tool and put an idea.

Secondly there are other more common channels available to provide ideas like meetings, workshops or a running project where you can share your idea directly to management and get response or even get it implemented. Whereas idea management tool follows a standardize procedure to provide recommendation and it might not be a fast paced result as expected by idea submitter. So these channels are competing with idea management tool as many employees favor them over "a new tool" that has been introduced to be used.

Since all these organizations are operating globally informants reflected that a companywide idea management tool as an initiative does not bring same response from all the regions that company operates in. This can be due to cultural difference where in some countries the hierarchical barriers prevent people to share their individual ideas and they prefer group working. It was also pointed out by one informants that by using tool over some time, they have discovered while openness help create collaboration and allow knowledge sharing ; it is also possible that some individuals are more comfortable to work in small groups in this case a tool should be flexible to provide a group space functionality.

Another challenge is that employees are using numerous tools for various daily tasks in all of the case organization thus tool itself alone cannot create value for any individual. It is the bigger innovation

initiative and recognition of their efforts that inspires people to participate. Secondly the tool might be easy to use for a business line dealing with ICT or development but for sales or marketing employees there is a need of additional training and understanding to use such systems. This has to be understood and clearly communicated between the innovation team and responsible individuals.

One challenge discussed by some informants is that the idea management tool can become a channel to complain or submit work environment or service improvement ideas the examples were given "like apples in canteen", "red carpets for all office floors" or "create a summer calendar". Although these ideas pose challenge where idea coordinator has to spend some time to sort them and then forward them to the relevant personal, it is difficult to avoid them completely. Informants discussed that to create open sharing atmosphere the company has to deal with these ideas. Some informants discussed that content of ideas will improve once there is more direction and middle managers convey the "kind of ideas" they want to see in the tool from employees of each business units.

All organization except one allows the idea collaboration at the initial idea submission phase. In few cases (N=3) the idea initiator can ask people to comment. But it was pointed out by the informants that it is not necessarily easy to get comments from the community and experts. This posed a challenge "to build ideas together" aim which was one of the factor each company hoped to achieve through the use of tool. Similarly the companies believed that idea can be advanced or improved using this cooperation. So if it is not happening as regularly as it was supposed to, it is hard to get employees excited about ideas of others. It was also pointed out that commenting, giving thumbs up or rating the ideas helped to let the evaluators know how idea is perceived in the organization.

One informant discussed the challenge where the power is imparted to employees, they allowed the idea initiator to sell or pitch their idea so it can get votes. If an idea gets votes then it is prioritized in evaluation process. This might be a good possibility for evaluator to see the fate of ideas but the informant explained, there is also a challenge that an idea which does not bring real value for the company can get votes or thumbs up. As collective pressure can force the idea to be taken seriously by management but in real it might not be a right decision. This company after several of these cases concluded that the idea management tool should be transparent and decisions regarding fate of such ideas should be clearly communicated to the idea initiator.

Evaluation & Recommendation Phase Challenges

Motivation is also a challenge at this step of the process since idea evaluator are needed to perform this task as a responsibility other than then their usual work. Most of the interviewees discussed this as an important factor to make the whole process from idea submission to evaluation run smoothly. The idea

evaluator needs to be motivated as they might have to deal with for example, as mentioned by one organization for more than 100 ideas in time of three months and it takes effort and time to perform this task. Some informants mentioned that they don't ask people to evaluate ideas unless they're sure that the idea is at least somewhat good. In case of evaluation team the informants discussed they need to be inspired or excited by ideas and see the value of the tool because there is not much reward or extrinsic motivation for evaluation being discussed by any of the informants. In words of one informant:

"I would say motivate people to do evaluation .Hitting a good evaluation time means ideas get timely feedback or response and it is a job of idea evaluator which can become difficult with large organization and many divisions. The evaluators get a thank you or thumbs up but not same response as someone putting idea to systems it is difficult to make them understand what it in is for them"

Secondly it has been discussed that since companies use this tool as platform to collaborate between different units and this is especially required at evaluation stage. Informants discussed the reason for cross collaboration is to evaluate the ideas together and see the technical, market value of an idea at the time when it is in early stage. In actual experience this collaborative decision does not happen as it is expected to be. There might be some cases where it was mentioned by informants that different businesses were collaborating. The way of working of organizations by having boundaries with in business line had made employees comfortable working with own teams.

One company where two informants were interviewed and a software vendor (having their own idea management tool) discussed employees might not agree with the result of the evaluation. In this case the openness, transparency and attitude of the innovation management team are very important. There has to be an open platform that allows debate between the idea initiator and idea evaluator. So the decision making can be discussed and explained. One informant stressed that employees need to be clearly communicated that may be 10% of ideas can get positive recommendation and from that only 3 to 4% of ideas will be implemented. All ideas will not go forward and selected and that is part of the process.

Many informants also discussed the fact that they want to have a very specific time to give feedback to ideas. Ideally it has to be as soon as possible but the fact that ideas content may differ and this can create a problem to have a standardize time. For example two of the informants from different companies discussed that in case of their organization a transformational or radical idea needs more time to get evaluation, calculate the feasibility, risk and requirements. In that case it might take more time to get back to the idea initiator and this is just part of the process. So in these cases idea content can affect the feedback time quite a lot and it can pose challenge. As a consequence the user of the system might lose

interest. This also nullifies the purpose of the tool where ideas are submitted to be evaluated and employees understand that their opinion is valid.

Idea Implementation Challenges:

Many informants discussed that many products, service or business related ideas may be approved or recommended for implementation by the tool. But there is a possibility that most of them do not make to implementation. The time lag can between recommendation and implementation can be from 6 months to 3 years or more. In almost all cases after an idea is approved it is directed to the business line which makes decision on implementation and determine allocation of resources, costs etc. Ideas once recommended from the system become part of the other project management or process models for implementation followed by the organization. So the recommended ideas may not be implemented for a long time and there is no check point or linkage between the idea management tool and the implemented ideas status.

This is a major challenge and shows slow progress in terms of idea development process. This challenge may create the picture that company just have a platform where ideas are shared but the actual success stories are not as many as were expect. This also pose challenge for the top management as the lack of success stories can generate the perception of the tool, that it only provides soft values in terms of collaboration, discussion or joint decision making and the hard value in terms of cost saving or money making are lacking from the overall process.

4.3.2 Success Factors of Idea Management Tool Use

Each case company and software solution providers discussed the factors that contributed to the success of idea management tools. Most of these success factors are related to the challenges discussed above. So overcoming challenges can create a successful use of idea management tools and support processes. The success factors here are gathered from all of the interviews. Some of the points already discussed in the previous section are also explained here briefly as they contribute to the success of such systems.

An idea management tool with transparent and fair processes that ensure open discussion, collaboration and evaluation is not enough to bring value unless there is **commitment** from all the stakeholders involved in the process. This on a broader level includes top management, middle managers and employees representing all the business divisions of an organization. Together all of the stakeholders can create a culture and attitude change from having closed centralized idea sharing practices to an open, knowledge sharing ones using idea management tool as a platform to do so.

"For success of system it is important because system itself cannot win today it will need culture. Of course tool is one factor in the bigger picture but biggest factor is culture .actually culture and attitude of leadership and managers and then employees".

The **commitment** from the top management and middle management is an important factor in above context. The priority of why an idea management tool is important needs to be clearly communi cated to the employees of the company. The innovation initiative supported by tool should be part of the strategy (N=1) as was stressed by one informant,

"if the importance and priority of why we need to share ideas and have this culture is not understood and supported by the leadership and management then it loses its importance in the long run. "

So there should not be contradiction in the actions and words of the leadership and management. Many informants discusses middle management can be one crucial aspect to make the idea management tool successful as they are responsible for everyday tasks.

"Leadership and middle managers need to recognize the benefits it brings for the company, the benefits of having ideas, multifunctional teams and implementing the ideas to gain value by saving costs, making costs the importance of tool need to be understood by all. So keeping the culture alive for success it is probably attitude and commitment of organization. If it is promoted everywhere employees also want to do their part"

Communication and commitment also contributes towards the success of the system. It is also mentioned by informants that organization needs to understand that all the ideas that get recommendation might not become part of implementation or it might take time to see results from some ideas that are implemented already. So this need to be elaborated by the innovation management team and understood by the tool users. Similarly if some ideas do not make to implementation t hey are still part of the tool and process. It has to be clearly communicated that may be only top 5% percent of the idea can get to implementation phase. This does not undermine the soft values of the system which are collaboration, joint decision making and creating an idea bank for future project. The importance of **open communication** is also discussed from the point of the view of the tool working for instance if the tool and processes are not working and there are some bottle neck and p itfalls then it should be flexible enough to change and deploy new processes.

Feedback is discussed one of the most crucial success factor as well once idea is submitted it is important to receive a timely constructive feedback which helps to keep the idea initiator interested in their own idea. If a system does not have a process in place that provide the real feedback to the user it can be considered as "black box" with idea flowing in but no information or decision coming out.

Here it was also discussed that feedback does not only have to be an intermediate feedback that idea qualifies for implementation. There has to be some process and planning in place where ideas that get recommended from the idea management tool get actually implemented. This is vital for the continuous use of the tool and bigger innovation initiative companies aim to achieve. But this link between idea management tool and idea development models is missing as explained in detail in challenges part.

Inspirational events like idea challenges and competitions help employees and top management see the advantages of tool in a very short time. The results are visible and process is clear for all the employees and top management. Thus these events and sharing of the success stories can be one factor that can make tool more successful in terms of its continuous use.

From the idea management tool design point of view some informants discussed that it should be simple and easy to use. The idea initiator should have a very clear and easy structure available in the tool for submission of idea. Which means that the user can easily identify the business division idea belongs to so basically a tool user has to spend minimum time to submit idea.

One success factor that all companies see most important to the use of tool is **collaboration and collective decision making**. Each organization discussed the value of open collaboration between different businesses is the real parameter that determines if the tool is successful. This factor helps the decision making and support knowledge sharing and learning. The same features were discussed in challenges part which means this is perceived as success factor but in real practice the collaboration does not happen as much as it is assumed.

Also many companies see that tool can be used for forecasting or trend tracking related to their industry and this is an important benefit or success factor for the use of the tool. Many companies discussed that if they have ideas from a particular business or related to a specific topic then these ideas can be either weak signals or indications that it can be researched more. The fact that these areas might need attention either for improvement or innovating new products or services can help companies identify the problems and opportunities using the idea management tools. This also reflects that tool is used efficiently and predictions from the tool can bring some new focus areas forward.

Chapter 5: Discussion & Conclusions

To the reader: This chapter discusses the main findings from the empirical studies and reflects upon them in comparison from the previous literature research on this topic. The practical implications of the study are discussed and some suggestions are summarized based on the combination of academic research and study from real life cases. In the end the study is evaluated and prospects of future research are discussed.

5.1 Contributions to Existing Research and Main Findings from the Study

The utilization of multiple case studies to understand the idea management tools, support processes and deemed very useful as it helped to create a holistic picture with real life examples. Especially exploring the idea management tool in larger organizational context has not been extensively discussed in previous literature. This research helped to identify the relations between different stages of the idea management tools more clearly as well as the dependencies of each step on the stakeholders involved in the use of tool. The insights gained, helped in understanding the behavior of users in terms of commitment, expectations and motivation that changes their interaction with the tool. Additionally this approach also helped to see the idea management tools in context of big innovation initiative of organizations and dependencies of the process on working cultures of companies.

It was interesting to see that collaboration between the business units is identified as the most important factor by the companies to determine if the tool is successful or not. At the same time it was the biggest challenge because in real practice the collaboration does not occur as commonly as it was assumed. This insight from the case examples contradicts from the academic literature where collaboration in all the stages of idea management tool is debated to occur and supported by the design of the tool (Bailey & Horvitz, 2010; Karlsson, 2010). In this regard the issue rooted at the organizational level where it is seems people are familiar with their own way of working in confined divisions of business lines and thus cross business collaboration may require some efforts and commitment from all stakeholders as discussed by academic literature as well (Dougherty & Hardy, 1996). Reflection on the findings show that this culture of collaboration needs to established and enabled by training, consulting and joint initiatives.

Secondly being international organization many companies discussed that in different countries work culture and working methods are different. To make tool a company-wide success they need to consider this while planning and launching the tool. Special measures in terms of training enabling etc. need to be taken as idea sharing practices are not common in all these countries. This is a very important finding as it has not been discussed in literature as a challenge or success factor for the tool use. The picture created

in literature represent that the tool once launched with all the requirements gathered from the company will be adoptable by all employees (Bailey & Horvitz, 2010; Montoya-Weiss, 2000). But this was not the real case and difference in working culture of companies creates an additional barrier to make tool successful.

Since it was discussed that design of the tool can make it more acceptable to be used by the workforce (Bailey & Horvitz, 2010) .This was confirmed as the ease of use and simplicity with few intuitive features was requirement of all the organization for idea management tool. Here it is to be pointed out that idea management tool literature propose that tool should have technical support and processes to deal with complexity in terms of multiple ideas and projects (Karlsson, 2010). This was partly confirmed as in example of all the case organizations an innovation coordinator was present managing the tool, ideas and delegating responsibilities. Thus innovation managers were performing quite a lot of work and system was not independent.

Another aspect of the same point is that in literature it is discussed since employees are familiar with using the IT applications. The idea management tool will not prove difficult to adopt in everyday work (Karlsson, 2010). This was partly confirmed as it was evidently discussed that tool itself was easy to follow but the same response is not gathered from all the business lines, meaning the people in development or IT department became familiar with tool quickly as compared to the sales or on site staff. Some employees and business lines need additional trainings to make them familiar with the use of tool.

Another important finding is that the role of innovation management team has not been discussed in literature extensively. The role innovation team played included requirement gathering, benchmarking other organizations and solutions, facilitating and training the other employees. These roles seem to create difference for the case companies. As many informants discussed that it helped to plan, promote and activate the innovation initiatives in organization. It was clearly seen that successful launch, promotion and working of tool required support from the innovation management team. All case organizations had these teams as part of their innovation initiative and it has been discussed that these teams bring value by enabling the use of tool and helping the overall innovation activities. These finding contradicts the literature where it is discussed that tool should be made as independent as possible and role of the management team can be eradicated by designing the tool to be intelligent (Montoya-Weiss, 2000).

In another view point the literature does not discuss any clear boundaries between the idea portfolios to be managed in the tool (Bailey & Horvitz, 2010). Similarly idea management tools are supposed to deal with the complexity and challenges that occur in all stages of front end of innovation (Bailey & Horvitz,

2010). In real cases it was clearly seen that most tools in case companies were used to support incremental ideas as the radical ideas added complexity to the system in form of additional evaluation efforts and time. Though all organizations wanted to or said that the idea management tool can support radical ideas the reality was different. Contradictions to literature tools were not very helpful in reducing complexity in dealing with radical ideas specifically in evaluation phase where additional support was needed to decide the fate of such ideas.

One important part that was a bottle neck for the use of tool was that recommended ideas from the tool do not see the implementation green signal from organization. It shows either the lack of commitment from the personals responsible for the implementation or then the rigid organizational boundaries, planning and set budget do not allow the businesses to make quick decision for implementation as discussed in literature as well (Garud, et al., 2011). This issue could be resolved by having an interface and follow up between the idea management tool and the project management processes and responsible personals. Here it is also interesting the fact that all recommended ideas can never be implemented should be elaborated and communicated to all the stakeholders. This is also partly linked to the existing literature where it is discussed that companies should prioritize the ideas and implements some percentage of ideas to show the tool is generating value (Bailey & Horvitz, 2010). But one point has not been discussed in detail in literature that some of the ideas may never get implemented and only adds to company's idea bank.

As far as the role of stakeholders is concerned the findings show that top management and leader ship commitment is as important as the employees. In literature related to idea management tool the use of tool is discussed as bottom up channel for ideas and role of management is not stressed enough (Turrell, 2003). Real findings reflected that without the commitment of management the tool cannot be successful in long run as idea implementation decision (that involves cost and resource allocation) need their support. Secondly by implementing tool the companies provided the channels for idea sharing to employees but the support processes does not impart power to the community. Which means it might be possible that voting and ratings do not affect the evaluation decision at all as this has not been discussed by any of the case company. Evaluation is based on set criteria and the ratings can help to prioritize the ideas, happening in few cases. It can be noted that in open source software examples discussed in literature review intelligence of community is utilized by giving them some form of power for example virtual money or reward or a batch where ,commenting and collaborating to other's ideas become valuable for them as well. The experts also use the voice of community in making the decision and evaluating an idea. But this was not the case in these organizations.

The role of having an open platform was also discussed by all case companies where the re is no practical example in any case organizations using idea management tool in collaboration with their supplier and customers. It was revealed by interviews that companies agree with the approach that external contributors to the process of innovation are as important as the employees of an organization (Karlsson, 2010; Chesbrough & Crowther, 2006). But due to intellectual property issues, customer expectation and technical requirements they do not want to implement this functionality in tool right away. As a future prospect many companies discussed that role of partners and customers can be added to the tool but the owner ship of ideas will be agreed upon beforehand.

Another interesting finding is the use of the idea management tool for trend tracking or identifying the weak signals or problematic areas this has not been discussed in existing literature related to idea management tool but this is common feature of many open source soft wares (example: OpenIdeo and Ideastorm by Dell). Since two of the case companies we re already using this concept .This feature can be helpful to detect the weak signals and trending topics. The functionality available in the tool can provide window to the management and innovation team to see the most commonly discussed topics or themes. Such idea can be assigned key words and tracked to group the similar trends.

In summary idea management tools can be of great prospect for the organization if they are supported by processes and organizational innovation initiatives.

5.2 Practical Implications of Study

It had been discussed and stressed that idea management tool alone cannot generate any value for an organization it has to be supported by the processes and structures. Nevertheless in larger context these tools can be very meaningful for the organization. It is evident that when companies use combination of activities where tool can also be part of the bigger innovation initiative it can generate more participation, ideas and collaboration. The competitions challenge based ideation; theme or idea of the month can create engagement from the employees. These inspirational set of activities help to see results of the how tools and process work in a short period of time and can help to serve the underlying purpose like trust building around the tool use and management of expectations of all stakeholders.

The role of innovation team is very important as well in this context as they not only help to maintain tool they are acting as agents that enable others in their business units in the use of tool. They also act as facilitators or intermediates between the idea initiators and evaluators. In this respect the role of innovation team from all business units can help keeping the active culture of innovation.

Feedback is also discussed as one of the key factor related to the use of idea management tool .As it helps to make the process more effective by managing expectations of all the stakeholders. The

constructive timely feedback is a one key parameter to make a system perform all the tasks. Also the importance of communication cannot be stressed more it should be clearly understood and communicated to the user the purpose the tool is serving for organization. It is highly possible that many ideas will not get implemented but still the reason behind the use of tool is to have a culture of openness and sharing.

The role of all the stakeholders is very important in making an idea management tool work. Commitment from the leader ship, top and middle management towards the use of tool and their support in this initiative is extremely necessary to make the process work. Since it does not make sense if the tool generate recommendation of ideas and none of them get to the implementation phase. Here the responsible people make decision regarding the implementation of the ideas can play an important role. As it is possible that there is a great effort and eagerness to participate in the beginning process where ideas are gathered and evaluated but as they are recommended for future there is lack of connection between the recommendation and implementation phase. This was seen in almost all the cases and thus a follow up process and structures can be formulated around this matter. There can be some implementation budget or fund that is dedicated to ideas that are been recommended from the tool this can help to show the real commitment and values. A follow up process between innovation management team and business units can also be quite beneficial in this regard.

Another aspect the idea management tool can help is the management of knowledge by creating an idea bank where all the ideas that are being shared can be stored. This is helpful as instead of repeating ideas an idea management tool can help to build upon existing ideas. Similarly the knowledge available in one area can be applied for another time as well. Tracking future trends to foresee problems or opportunities can be very beneficial for the organizations as it utilized their embedded knowledge in form of ideas to identify the weak or strong signals. This feature of the tool can be utilized more in practice.

5.3 Evaluation of the Study

Since due to time constraints the research focused on divergent data set with multiple case studies. This created a generalized breadth view related to expectations, assumptions and experiences related to the use of idea management tools. The research could have been more benefited from the in depth analysis of each organization i.e., a larger interview sample. Since the findings are discussed using the commonly occurring themes related to the topic, it would have been more insightful to interview large sample of users of idea management tools (employees) from each case organization along with middle managers and top management to understand their view point as well. Similarly collaboration is discussed as a factor that is crucial to make idea management tool successful so in this respect managers and

representatives from different business lines of each company should have been interviewed to gain deeper understanding of enacted practices.

Also the use of idea management tools and the practices may change over the span of time. A longitudinal study in this perspective where the data is collected in a longer time span would have produced a deeper understanding of how the use and support processes of tool change over the period of time and new processes that are formed. In this respect especially for the companies in the transition phase it would be interesting to see the actual implementation of the tool and observe the processes that are bound to be different then the assumed or current one. The findings in this thesis do not discuss the change that can occur in time which can be an interesting phenomenon to observe or study in this context.

Qualitative approach in form of Interviews was used for the primary source of data collection. A mixed method approach could have been better in validating the results. As it was not possible to get data or statistics from the idea management tool itself such logs or tool data could have been interesting to compare with the informants responses. Since each organization in the study is different the results would have been compared to understand the difference in use of tool. More over being the global organizations all the companies have offices and employees spread around the world to expand the view of the study such informants from different countries and tools statistics from each region could have also helped to understand the practices that differ because of the origins or country culture.

Nevertheless these limitations were overcome by imparting more time to research process. In this case they were reduced by carefully selecting the data sample in relation with the research question. The broader perspective was gained by interviewing software solution providers of idea management tools. All the case companies had some experience and practices related to idea management tools and the individuals being interviewed were active part of innovation management team in the organization. The analysis was done with rigorous repetition starting by word by word transcription of all the interviews and coding and re-coding manually and using software support. This approach was used to make sure that the results are not biased and provided deeper insights and helped to create the generalization based on common practices and identify the uniqueness for each case organization.

5.4 Future Research

The research is based on 6 International organizations which are key players in their respective fields with years of experience, operations and history that has created their current organizational setting. Since this research focused on the view point of few personals from the organization so one future research implication can be in depth study of these organizations from the perspective of conditions and change of

practices related to idea management tool use. Which means that some of the organization already have an idea management tool in place while others are in transition phase so it will be interesting to do a longitudinal study over a period of time to gain insights how practices related to idea management tool come into existence in case of new tool adoption or change over time as the tool become familiar. This topic is not discussed thoroughly in research in previous literature and this study also only capture the view point of informants in specific time but it can be explored further. Interviewing many personal from organizations that may or may not use tool, observing the use of tool and getting the real data from the tool can serve this purpose of understanding in detail. Studying them over time will help to study change in the processes and tool usage and this can create a good addition to the idea management research.

Here it has to be mentioned the collaboration practices are discussed almost all informants as both challenge and the necessary for the success. Since idea management tool is designed to support collaboration but real practices differ from the intended or assumed ones. This phenomenon can be investigated in detail and can serve as important direction for future. Secondly the behavior of different countries in response to the tool use can be investigated in detail. If same processes and practices are should be used all over the organizations or they can be localized based on the country of origin to have full benefit of the tool. This can be an important direction to explore for future.

Secondly this research studies the managerial perspective related to idea management tool in extension to this study the role of the innovation management teams can be an important topic to explore. Since all the companies have innovation management personals or teams. One future prospect of research can be to observe or study these teams to investigate their roles as innovation agent. It can be studied how helpful these teams are to create cross business understanding and collaboration and enabling the innovation culture for other employees. Secondly based on the literature it can be investigated if employees become fully functional in adopting the innovation initiative in form of idea management tools does the role of the team will diminish? This can be interesting phenomenon to for further research.

Another future prospect of research is to see the value of tool in trend tracking and identifying weak signals and opportunities. Using data analytics and business intelligence concepts the real data from the tool can be analyzed and compared to the company projects or general strategy to understand the relation between the ideas that are abundant and innovations they can create. Another aspect that can be studied from this prospect is that since companies see lack of motivation to participate as one of the biggest challenge the tool data can be used to identify the most active businesses and understand the practices that are followed there and lacking in the other business units .The study of these practices will be important aspect to investigate.

5.5 Conclusions

To summarize this study observed that idea management tools provide prospects for organization to use the collective knowledge of the employees at their disposal to generate, develop, and implement ideas and achieve innovation objectives. These idea management tools in each case company provided a platform to support overall innovation initiative of an organization and help in identification of the opportunities by capturing, prioritizing, evaluating the ideas which otherwise do not get a channel to surface. All of the tools were designed to be used by the whole organization and this created a social setup of collaboration and community around the tool.

However it was discovered that the advantages from collaboration and knowledge sharing were not fully attained in any case organization and this has been identified as the challenge as well as critical factor for the success of tool. This can stem from the fact that idea management tools are relatively new concepts for all the organizations being studied (not a single organization has tool in place for more than 5 years) the practices related to tool use require change in attitude from the normal working methods in organization; where each business line is responsible for their own portfolio development to an environment of open idea sharing, collective decision making and using the power of employees in all these processes. This inability to make this attitude change can create a barrier in adopting these practices. All the stakeholders (employees, leadership, middle & top management) involved in the process of idea management tool use; need to understand the importance of the tool for their organization.

In short it was clearly discussed by all the informants that idea management tools alone cannot generate value for organization unless they are supported by processes that help to create environment & culture of innovation where ideas flourish, are fairly evaluated and put to implementation to generate short and long term benefit for organizations.

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Appendix

Interview Protocol

Background

Tell your organizational role,

Job, day to day working activities,

How is it related to innovation, innovation management?

Who are the people you work with mostly?

How do you interact with them?

Innovation Policy

What is innovation policy for your company?

How do you deal with innovation?

What is innovation for your company?

Who deals with it?

What kind of innovation do your company support or what ideas?

Or Is this a service development, product development / technology development, or something else?

Is it difficult to have many innovation types

How to deal with each?

Who deals with each?

What are motivating factors to innovate

How much do you develop ideas alone / together?

to what extent are you taking the ideas further formal / informal channels?

No Do you need to hide any ideas? Why? and why not

Idea Portfolio

How did idea move for your typical development phase?

Who are people taking part

Who manages them?

What are the models structures you use for it?

Innovation Structures

Discuss your thoughts on idea management tools

What functions they perform?

How are they use

Features, technology

Who controls or work with them

Who participates? And why

Share experiences?

When idea management tool use was began?

Is it successful? Why and why not

Challenges? What will you change?

Role of customers and partners

Invention vs innovation does it supports?

What inspiration activities are there for the tool use?

How are these communicated? The use of tool, tool promotion why is it necessary to have this innovation perspective.

Why did you feel the need to have idea management system in place?

Do you think it is beneficial?

Do you think it has brought value for your company?

did not get to know about the sub categories for process or business ideas.

how do you see the idea management tool functionality?

visibility for othes about the idea that is put in the system.

is collaboration conscious decision? Or does it can change future.

when it is visible to every one?

Why is benchmarking as a way to understand.

who owns the idea? in the system.

so invention system is actually not radical either.

What are the parameters to design such system? What kind of parameters is most important for companies?

How do you come up with specs and features in the first place? What is the back ground research involved.

How do you see innovation from the ICT system itself? What are the features asked the most or common in companies.do you also provide some sort of training?

How does idea management cycle work in your solution? What should it include in your opinion? How do you propose an eco-system?