

The suitability of idea management systems for radical innovation in the front-end of open innovation

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ABSTRACT

Aided by the rapid development of information technology, idea suggestion programs have taken a massive leap forward from physical idea suggestion boxes to online interactive idea management systems that use crowdsourcing to capture and manage ideas. Combining this development with the front-end of innovation - that offers the real keys to success in the innovation process - and we find an interesting research topic. Idea management systems are online software-based frameworks that organisations can and should use to capture and manage their stakeholders' ideas. User-generated ideas are found to have a significantly higher score in terms of novelty and customer benefit than ideas generated by professionals. Key problems of idea management systems though are, among others, the focus on incremental innovation and the lack of successful radical innovations. This study aims to identify recommendations regarding the design of idea management systems that makes them (more) suitable for radical innovation. In order to do this, two models have been developed that show the differences in the design of idea management systems depending on the degree of innovation that is being managed. Four recommendations regarding the design of an idea management system suitable for radical innovation are brought forward. An early distinction regarding the degree of innovation is necessary, a well-structured standard template needs to be used for idea submission, different users need to be involved depending on the degree of innovation, and inspiration needs to come from the right layer of management.

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Keywords

Ideas, concepts, front-end of innovation, idea management systems, open innovation, radical innovation

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1. INTRODUCTION

Innovations are everywhere and have been around since the dawn of man. Innovation has become an increasingly important topic in the world we live in. It can be defined as the process of commercializing or bringing into common usage of an invention. There are different types of innovations, like product and process, and there are different degrees of innovation, like incremental and radical. A recent survey of McKinsey (2010) has shown that 84% of the responding executives agree that innovation is “extremely important” to their organisation’s growth. In the last decades, markets have globalized, become more competitive, and there has been a growing interest in radical innovation and specifically in how organisations can proactively generate these radical innovations (Veryzer, 1998). While a lot of empirical research has been performed on incremental innovation, the literature on radical innovation is lacking behind (Tidd and Bessant, 2009). Nevertheless, researchers and organisations unanimously agree that radical innovation is of vital importance for the growth and profitability of organisations (e.g. Calantone and Benetto, 1988; Kleinschmidt and Cooper, 1991; Kirchhoff, 1991; Ali, 1994; Höysä and Hyysalo, 2009; Story et al., 2011). But where do radical innovations come from and how should they be managed? I argue that an opportunity or idea is the beginning of any innovation. This idea could come from opportunity identification (Koen et al., 2001) or it could simply be an “eureka!”-moment after which an idea is developed.

The innovation process can be divided into three phases: the front-end of innovation, the development or new product development (NPD), and the commercialization phase. The latter two phases are generally well-structured formal processes that have been researched quite a lot. Organisations are generally good in managing these processes through best practice methods such as Stage-Gate®. An organisation that wants to be successful must be proficient in all three phases. However, Khurana and Rosenthal (1998) argue that “the real keys to success” can be found in the front-end of innovation. In other words, the proficient management of the front-end of innovation is the key to success in the rest of the NPD process. Koen et al. (2001) agree with Khurana and Rosenthal (1998) that the front-end of innovation deserves more attention and that it is the key to success in the last two phases of the innovation process. In my understanding, the front-end of innovation is about identifying opportunities and developing ideas - through for example creativity or any other method - and evolve these ideas into explicit and concrete concepts that are ready to be developed even further in the more structured development phase, with the ultimate goal of having a successful commercialization. The front-end of innovation is a highly unstructured, dynamic, unpredictable, and sometimes chaotic process for which some researchers argue that it should not or cannot be structured. I agree that the creativity process is not suited for being highly structured, however I strongly believe that organisations can improve their success when they demarcate the area in which they want their stakeholders to be creative. Like I mentioned in the previous paragraph, I assume that an opportunity or idea is the beginning of any innovation. Combining this assumption with the concept of the NPD process and specifically the front-end of innovation, I found the concept of idea management systems.

Everybody knows the typical idea suggestion box hanging in the office. This suggestion box - which allows employees to submit ideas to be reviewed (if ever) by an usually unknown person - can be seen as the forefather of idea management systems. Idea suggestion boxes still exist, but are desperately

outdated. In the early 1990s, organisations needed a more structural approach to their idea management process; they were looking for a framework that allowed them to capture, organize, select, and manage ideas from their employees and review these in a more structured way. These were rather simple systems at first, in which employees needed to hand their ideas in on a piece of paper. Nowadays, these frameworks are more advanced, dynamic, and interactive, and known as idea management systems. The rapid development of information technology has helped idea management systems to become increasingly advanced and sophisticated. The development of Web 2.0 - which allows more interaction between users and user-generated content - and the birth of the phenomenon called crowdsourcing led idea management systems to become a (generally) online framework through which users can interact with each other and with each other’s submitted ideas. Poetz and Schreier (2012) have shown that user-generated ideas score significantly higher in terms of novelty and customer benefit when compared with ideas generated by professionals. Another finding in this study was that ideas generated by professionals had a higher level of feasibility than user-generated ideas. These findings stress the importance of collaboration and cooperation between ‘the crowd’ and professionals on the matter of using those ideas for innovation purposes. Customers may come up with brilliant ideas, yet the development of a solid business case might be done better when this is done in cooperation with professionals with in-depth knowledge and expertise. This expresses the importance of involving customers and other stakeholders in an organisation’s innovation process. Meanwhile, Gartner (2010) expects idea management systems to be a mainstream topic in organisations by the end of 2016. Though, multinationals such as Dell, Starbucks, and Cisco, already have (had) their own online open innovation based idea management system through which the crowd is allowed to upload their idea and have it reviewed and improved by the community.

Idea management systems may sound like a success story with a bright future, managing the chaotic and unpredictable process of ideas in the front-end of innovation. However, idea management systems still face some key problems, primarily related to the human effort that is needed to manage and control the system, and the type and volume of ideas that are being submitted (Verespej, 1992; Carrier, 1998; Schuring and Luijten, 2001; Baumgartner, 2008; Bansemir and Neyer, 2009; Sandström and Bjork, 2010). These studies have shown that the key problems of idea management systems are:

- A large volume of submitted ideas,
- sudden peaks of submissions,
- high human workload,
- redundancy of ideas,
- large proportion of trivial ideas,
- focus on incremental innovation and
- a lack of successful radical innovations.

In this paper I will be focusing on the bottom two key problems. During the early 1990s, idea management systems became a popular addition to organisations’ continuous improvement systems - a type of incremental innovation. Back then, idea management systems assisted organisations with capturing and combining the knowledge of their employees to become more efficient at whatever they were doing. Small improvements helped to cut costs or be more efficient with materials or man hours. Scholars (e.g. Verespej, 1992; Schuring and Luijten, 2001; Fairbank and Williams, 2002) generally agreed with the notion that idea management systems are specifically suited for

incremental innovation rather than radical innovation. Carrier (1998) validated this notion with a multiple-case study on both small and large manufacturing companies. He studied the idea management systems of these organisations and found that the large majority of submitted ideas involved incremental innovation. Nevertheless, times have changed and so has innovation. Veryzer (1998), Christensen and Raynor (2002), and other scholars have spotted a growing interest in radical innovation and specifically in how organisations can proactively generate and handle these radical innovations. Furthermore, Chesbrough (2003) found that organisations are increasingly adopting an open innovation model “in order to become more innovative”. Basically this means that organisations are increasingly seeking knowledge and collaboration within their external environment, rather than solely in their internal environment. These findings will be further discussed in the next chapter.

In my opinion, there currently is a gap in the literature regarding the suitability of idea management systems for radical innovation in the front-end of open innovation. I believe it to be unclear whether the design of idea management systems has changed alongside the change in interest in the field of innovation and whether idea management systems nowadays are (more) suitable for radical innovation. The research question therefore is: *What recommendations should be taken into account when designing an idea management system in the front-end of the open innovation process in order to improve the management of radical ideas that are captured from the crowd?* The research goal of this paper is to provide organisations with a basic understanding of idea management systems, and more specifically deliver a set of recommendations regarding the design of idea management systems that enable them to be (more) suitable for radical innovation. I will be looking at this research question through a structural perspective. The structural perspective is focused on the design and organisation of systems for managing ideas, whereas the opposite - the behavioural or social perspective - is focused on the interaction between people and their relationship towards idea management (Jensen, 2012; Vagn et al., 2013).

The practical relevance of this paper is that it can be of interest for organisations that want to improve their front-end of innovation process with the help of idea management systems to successfully commercialize or bring into common use more radical innovations. Furthermore, this paper provides organisations with two simple model overviews that can be used to get accustomed with idea management systems. This paper is academically relevant for multiple reasons; First of all, there is no recent research that studies whether idea management systems are currently suitable for radical innovation. Second, this paper's results add to a small number of academic papers focusing on the combination of radical innovation and idea management systems. Third, this paper starts with a literature review of the innovation process, the front-end of innovation, and idea management systems. This can help other researchers with a quick and easy overview of the current literature on this topic and the concepts mentioned. In the next chapter, innovation, the front-end of innovation, and the NCD model will be considered.

2. INNOVATION

It was already shortly mentioned in the introduction: Innovation is of critical importance for every organisation and failure to innovate will eventually result in the death of the organisation (Chesbrough, 2003). But why is innovation so important for organisations? It is important because environments change over time and organisations need to adapt to those changes in order to survive and grow. Another reason why innovation is important is because it can lead to a higher efficiency, better products, new customers, and a higher profit. It can help organisations to gain a competitive advantage over their competitors and to stand out from the crowd or perform better than their competitors through for example process innovation. A living example of this is the German firm Würth. Würth is the world's largest maker of screws and bolts and despite low-cost competition from Eastern Asia-based firms - especially from China - they have managed to gain and maintain a competitive advantage over their competitors through an emphasis on product and process innovation (Financial Times, 2008).

While there is a clear consensus in the literature that innovation is of key importance for the growth and survival process of organisations, nearly all researchers and business people define innovation slightly different. Some even confuse innovation with invention, while they are absolutely not the same. Invention can be defined as “an idea, a sketch or model for a new or improved device, product, process, or system” (Freeman and Soete, 1997). Innovation on the other hand can be defined as “the process of turning ideas into reality and capturing value from them” (Tidd and Bessant, 2009) or “the commercialisation of an invention” (Rothwell and Zegveld, 1985). Conway and Steward (2007) have gathered and synthesised a wide range of definitions and define innovation as: “Innovation = invention + bringing into common usage”. They have deliberately chosen for the term “bringing into common usage” instead of “commercialization” in order to also include innovations in for example the nonprofit and public sector; innovations that are not meant to make a profit. In this paper the following definition will be adopted: Innovation is the process of turning ideas into reality and bringing them into common usage.

Furthermore, the term “innovation” is used in multiple ways. It can be viewed as “an output, a process, and a capability” (Conway and Steward, 2007). Innovation as an output means that innovation is seen as an end product (or service, etcetera) that is brought into common usage. Innovation as a process entail the various activities that an organisation performs “in translating an idea into an innovation” to bring it into common usage. These activities involve, among others, conceptualization, design, testing, and commercialization. Innovation as a capability is a term used on a more strategic organisational level. It can be seen as an indicator to a firm's level of innovativeness. Innovation as an output and as a process are most relevant for this paper. Innovation as a process because one goal of this paper is to provide organisations with recommendations concerning the design of idea management systems, which primarily plays a role in the front-end of innovation. Innovation as an output because the ultimate goal that I hope to reach with this paper is that organisations improve their innovation process which leads to an ‘improved’ output. In the next section multiple distinctions regarding innovation are considered.

2.1 Radical Innovation

Within the field of innovation, many distinctions about types of innovation and innovation models have been made. However, there is no need to define all of these here because innovation types such as architectural and modular are not important for this paper. I will only make a distinction concerning the degree of novelty of an innovation and the type of innovation model.

First, a distinction is made concerning the degree of novelty of an innovation: incremental versus radical innovation. Incremental innovation is defined as “providing minor or major improvements in functionality and performance to an existing innovation” (Conway and Steward, 2009). Incremental innovation is thus about improving already existing innovations, it is about doing what we already do better or as Tidd and Bessant (2009) explain it: “Do better, yet more of the same”. Radical innovation on the other hand is defined as “a major advance in the technological state-of-the-art” (Clark and Staunton, 1989) or “ideas that are new to the company or new to the industry” (Tidd and Bessant, 2009). Radical innovation is all about making a major advance or a leap forward that leads to new breakthroughs that change the rules of the game. Such an innovation could for example be discontinuous or disruptive, but it does not necessarily have to be. While classifying an innovation as either incremental or radical is a subjective process, the difference between both is quite clear. Incremental innovation is doing what we do better, radical innovation is a major advance that is new to the world (or organisation), redefines the environment, and/or changes the rules of the game. Typically, radical innovation involves a higher risk than incremental innovation because the level of fear, uncertainty, and doubt of the outcome of the innovation is higher.

Second, a distinction is made between the type of innovation model: closed innovation versus open innovation. A closed innovation model means that “all the innovation activities (...) are carried out in-house” (Stel, 2014). This means that there is no communication or collaboration with external stakeholders concerning innovation (e.g. R&D and NPD). Knowledge is kept within the organisation and there is no in- or outflow of knowledge with external parties. On the other hand we have open innovation.

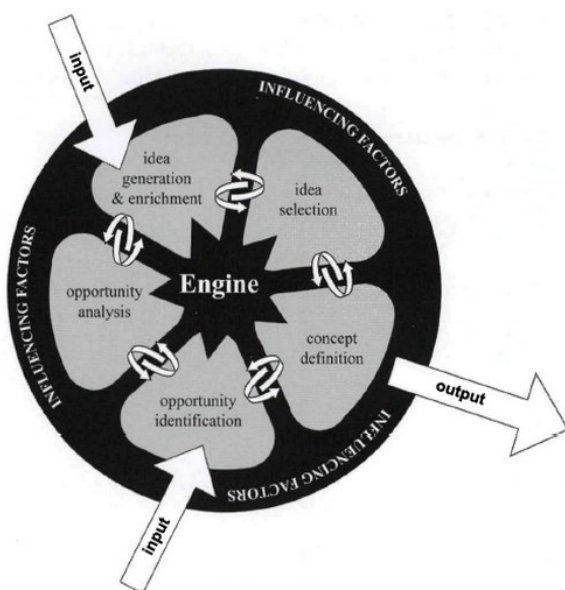


Figure 1. The NCD Model (Koen et al., 2002)

Chesbrough (2003) found that organisations are increasingly adopting an open innovation model “in order to become more innovative”. Chesbrough (2006) defines open innovation as “the use of purposive inflows and outflows of knowledge to accelerate internal innovations, and expand the markets for external use of innovation, respectively. Open innovation is a paradigm that assumes that firms can and should use external as well as internal knowledge, and internal and external paths to market, as they look to advance their technology”. In other words, open innovation is about collaborating with external stakeholders in order to improve an organisation’s innovation process. It is about “making the best use of both internal and external sources of innovation” (Di Gangi and Wasko, 2009). Sources of innovation are for example R&D and marketing (internal), but also customers and suppliers (external). In the next section the front-end of innovation and the New Concept Development (NCD) model are considered.

2.2 The Front-End of Innovation and the NCD Model

Khurana and Rosenthal (1998) argue that “the real keys to success” can be found in the front-end of innovation and Cooper (2011) supports this view with benchmarks: “Solid front-end homework ... [is] a key ingredient in a successful new-product process”. The front-end of innovation arguably presents the greatest opportunities to improve the overall innovation process (Day et al., 1994; Zhang & Doll, 2001), while it is also experienced as the most difficult phase to manage (Khurana and Rosenthal, 1998; Koen et al., 2001). The front-end of innovation is the first phase of the entire innovation process, which can be divided into a total of three phases: the front-end of innovation, the development phase, and the commercialization phase. The latter two phases are generally formal and well-structured processes which usually involve structured project management and Stage-Gate® toolkits. The front-end of innovation has also been called the “fuzzy front-end” in literature because it was seen as an unstructured, uncontrollable, unpredictable, and highly dynamic phase that is different in each organisation and environment (Khurana and Rosenthal, 1997). Koen et al. (2001) renamed the fuzzy front-end to the front-end of innovation after they developed a theoretical construct known as the NCD model with the aim of proposing a new and (now) widely accepted terminology for this specific phase in the innovation process. The main reason for this term change was that the name “fuzzy front-end” might inappropriately imply that this first phase of the innovation process is “undefinable, uncontrollable, and impossible to manage” (Koen et al., 2001). The NCD model makes the front-end of innovation more structured and controllable by giving it a face through a common terminology and a holistic view. The NCD model plays an important role in the positioning and development of my idea management system conceptual models later in this paper. I will first explain and discuss the model in this section.

The NCD model was developed with the intention to provide “a holistic view, insight and a common terminology” for the front-end of innovation (Koen et al., 2002). Before the NCD model was developed, there were no commonly accepted terms and definitions that described the front-end of innovation. This made it difficult to compare organisations’ performance in the front-end of innovation: Firm A called X Y, while firm B called X Z. Thus, the NCD model was developed so that a common language would be adopted which would make it easier to describe, research and improve the front-end of innovation. The NCD model is a circular and iterative model with no strict

sequence. The starting point of a project usually is either at the idea generation & enrichment or opportunity identification activity element. Projects “leave” the model from the concept definition element as a well-defined concept. A concept “has a well-defined form, including both a written and visual description, that includes its primary features and customer benefits combined with a broad understanding of the technology needed” (Koen et al., 2002). The NCD model consists of three key parts: a (controllable) engine that powers the five activity elements, (uncontrollable) influencing factors, and five activity elements. The definitions of opportunity, idea, and concept can be found in table 1.

The engine is at the center of the NCD model and provides power to the five activity elements. It consists of the organisational elements leadership, culture, and business strategy. It stresses the importance of for example senior management support for innovation. Multiple studies have shown that senior management support (or leadership) is critical for NPD success (Cooper and Kleinschmidt, 1995; Song and Parry, 1996; Swink, 2000). The leadership element operates alongside the importance of an innovation friendly organisational culture. Senior management should not discourage risk taking and should continuously support the innovation activities that are performed in an organisation (Tidd and Bessant, 2009). The road to success to a proficient concept is rarely known beforehand. There needs to be room to experiment in the front-end of innovation because of this and the experimental, unpredictable, and chaotic characteristics of this phase. Zien and Buckler (1997) identified important factors typical for a highly innovative organisation, including: continuous support from leadership towards innovation activities, the encouragement towards employees to participate in the innovation process, and encouragement towards a close interaction between employees and customers. Furthermore, Koen et al. (2002) stress the importance of the alignment between business strategy and innovation activities. The business strategy needs to direct the activities in the front-end of innovation in the right direction: the direction that fits best with the business strategy.

The (uncontrollable) influencing factors include environmental factors that influence the engine and/or the five activity elements. Examples of these influencing factors are customer trends, competitor threats, organisational capability, tax policy, environmental regulations, intellectual property law, socioeconomic trends, as well as Porter’s five forces (1979). While the influencing factors are considered uncontrollable, this does not mean that actions performed by an organisation cannot influence these environmental factors.

A strategic decision - “made in the engine” - may have influence on for example a governmental decision relating to environmental regulations. Uncontrollable is not the same as “non-influential”. Furthermore, these influencing factors are not merely negative, but can also have a positive impact on organisational innovation.

The five activity elements are:

- Opportunity identification
- Opportunity analysis
- Idea generation & enrichment
- Idea selection
- Concept definition

In the first activity element - opportunity identification - a possibly attractive opportunity is identified by a person or organisation. This could be done through formal methods like creativity techniques, informal methods like individual insights, or it could simply be an “eureka!”-moment by an individual. For organisations, this element may occur after a competitor’s action which leads to a new opportunity. An opportunity can be incremental or radical. An improvement to the manufacturing process might be incremental, while an example of a radical opportunity might be a shift to a new business direction.

The next activity element is opportunity analysis. In this element the informal assessment of the discovered opportunity is done. Do I think whether the opportunity is worth pursuing? Do I think the organisation possess the resources necessary to realize this opportunity? This element is the first step in trying to assess the level of fear, uncertainty, and doubt that is associated with a project. The essence of this element is to confirm whether the identified opportunity actually is an opportunity. Do we and do customers really want this? It is the informal and intuitive analysis of an opportunity.

In the next activity element - idea generation & enrichment- the discovered opportunity becomes a more concrete idea. An idea is captured after which it may be examined, discussed, improved, or torn down, while others come in contact with the idea and discuss about it. This can be done through very extensive direct contact with large groups of customers, or small 1-on-1 interviews with employees. Typically, this element outputs the identified opportunity as “a more completely developed description of the ‘sensed’ idea or product concept” (Koen et al., 2001). Furthermore, this element - like all others - may feed opportunity identification.

Opportunity	A business or technology gap, that a company or individual realizes, that exists between the current situation and an envisioned future in order to capture competitive advantage, respond to a threat, solve a problem, or ameliorate a difficulty.
Idea	The most embryonic form of a new product or service. It often consists of a high-level view of the solution envisioned for the problem identified by the opportunity.
Concept	Has a well-defined form, including both a written and visual description, that includes its primary features and customer benefits combined with a broad understanding of the technology needed.

Table 1. Definitions by Koen et al. (2002) in *The PDMA Toolbook for New Product Development 1*

The next activity element is idea selection. This is the activity where an organisation decides which ideas they believe are worth pursuing and further development. This element may look a lot like opportunity analysis, but it is not the same. Opportunity analysis is a more abstract assessment of an identified opportunity, whereas in the idea selection element this assessment is done with the help of more concrete selection criteria. This element may look rather simple and this may be true if one only has three ideas to choose from.

However, a key problem of idea management systems is that there usually is a large volume of submitted ideas. The challenge in this element therefore is how to make a “successful” selection while being efficient with regards to human effort. Idea selection in relation to idea management systems means that it is a selection by the decision makers (e.g. operations management or top management) to decide which concepts will receive a substantial investment for further development in the (new product) development phase.

The final activity element - concept definition - involves the development of a business case. A business case can be seen as the targeted outcome of the front-end of innovation. A business case is a well-developed concept of an idea that consists of estimates of “market potential, customer needs, investment requirements, competitor assessments, technology unknowns, overall project risk” and so forth (Koen et al., 2001).

I already mentioned in the previous section that the front-end of innovation comprises all the activities that are performed before the formal and well-structured development and commercialization phase. But when does the front-end of innovation exactly end or when is it completed? Khurana and Rosenthal (1998) argue that “the front-end is ‘complete’ when a business unit either commits a substantial amount of money to the funding and launch of a new product development project, or decides not to do this (the so-called go/no-go decision)”. Koen et al. (2001) define the scope of the front-end as “those activities that come before the formal and well-structured New Product and Process Development (NPPD) or Stage Gate process”. While Koen et al. (2001) argue that the definition of the front-end of innovation by Khurana and Rosenthal (1998) is too restrictive because they use the term “funding” and this might imply that ideas or projects do not receive any funding at all in the front-end of innovation, I do not agree with this notion. In my understanding, the term “funding” refers to a substantial budgeted funding of the project which allows the project to go into the development phase and not to a small amount of money being spent into the concept and technology development. In the next chapter idea management and idea management systems are considered.

3. IDEA MANAGEMENT SYSTEMS

In the previous section the importance and opportunities of the front-end of innovation were explained and discussed. Organisations that are highly innovative have a more proficient front-end of innovation. Considering the NCD model, we see that the front-end of innovation comprises of activity elements that start with either opportunity identification or idea generation & enrichment, leading to a more developed and concrete idea in the concept definition element. In the introduction I already mentioned that this paper is written from a structural point of view. This means, among others, that I will not be discussing or considering the creativity process that is present in the front-end of innovation and may be used to discover or improve opportunities or ideas. Instead, I will be considering the design and organisation of systems for

managing ideas or more commonly known as idea management. But what is idea management and what are idea management systems? This will be considered in the next sections.

3.1 Idea Management

Within every organisation there are people who have ideas. Not everyone expresses the ideas they have explicitly, but the ideas are there. Koen et al.(2002) define an idea as “the most embryonic form of a new product or service. It often consists of a high-level view of the solution envisioned for the problem identified by the opportunity”. The classical aim of idea management is to harness those ideas and the creative process involved in a structured way (Brem and Voigt, 2007). While this classical definition is specifically designed and suitable for closed innovation, it can be easily expanded into a definition more suitable for open innovation: The modern aim of idea management is to harness stakeholder’s ideas and creativity in a structured way. The goal of idea management is to capture, evaluate and improve ideas that have “the greatest potential to add value to the organisation” and remove bad ideas before going into the (new product) development phase (Baumgartner, 2008). This added value can be in all sorts of forms; from cost cutting and a better working environment, to breakthrough products that generate profits for an organisation.

Idea management is primarily important in the front-end of innovation because that is where ideas worthwhile to develop further are selected. This does not mean that idea management is only applicable to the front-end of innovation. The addition of a central idea database or idea repository to an idea management system can help organisations to find solutions for encountered problems in the development and commercialization phase of the innovation process. Idea management systems provide a framework or infrastructure for idea management in the entire innovation process and will be considered in the next section.

3.2 Idea Management Systems

Traditionally, idea suggestion programs such as idea suggestion boxes have been used to capture ideas from stakeholders like employees. In the early 1990s more sophisticated and interactive idea management systems have been developed to better harness stakeholder creativity for the sake of innovation and specifically (incremental) continuous improvement programs: idea management systems were born. Organisations were looking for a structural approach towards managing their idea management process and so they developed a framework that allowed them to capture, organize, select, and manage ideas from their employees. The rapid development of IT and the birth of crowdsourcing have boosted idea management systems towards being an interactive software solution rather than an idea suggestion box at the office’s reception. Before considering idea management systems in more depth, I will first introduce its predecessors. Gorski and Heinekamp (2002) developed an idea suggestion program typology in The PDMA Toolbook for New Product Development 1 (see table 2).

Idea Suggestion Box

The Scottish shipbuilder William Denny and Brothers is the founding father of the forefather of idea management systems: the idea suggestion box. In 1880, they placed a wooden box in their production facility in which their employees could submit ideas that would help the business. This type of idea suggestion program became very popular in the 20th century in Europe and the United States. It is easy and inexpensive to implement, though the main critic of idea suggestion boxes is that there

hardly is any interaction between the idea submitter and the reviewer(s). Furthermore, the submitter's input on the implementation of their idea is limited. Nevertheless, this type of idea suggestion program still remains in use in many organisations nowadays. Some organisations still use the traditional wooden box, where others have upgraded their wooden box to a idea submission form on their intranet. Some examples of (modern) idea suggestion boxes that are still used nowadays are displayed in appendix 8.6.

Kaizen-Teian Systems

Kaizen-Teian systems were developed in Japan after World War II. Loosely translated "kaizen teian" means "improvement suggestion". This pretty much describes the system as a whole. Kaizen teian systems focus solely on continuous improvement through rewarding employee participation. Small improvements that are suggested by an employee are rewarded with organisation-wide recognition and other intrinsic rewards, rarely with monetary rewards. This approach fits very well in the Japanese culture of honor and shame and has been and still is a great success there. Robinson and Stern (1997) measured this success and found that the average Japanese employee submitted eighteen ideas, with nearly 90% being implemented. On the contrary, US organisations only received one idea per five employees, with only 33% being implemented.

Employee-Driven Idea Systems

Employee-driven idea systems are a variation of the kaizen teian systems. The biggest change when compared to kaizen teian is that an approved idea is to be implemented by the submitter. This is also the largest risk of this type of program; an idea submitter may not have the expertise or knowledge nor be capable of implementing a (great) idea.

Idea Management Systems

The rapid development of IT and the birth of crowdsourcing in the last two decades have dramatically changed the nature of idea suggestion programs. Whereas the three previously mentioned traditional idea suggestion programs are rather linear and static, idea management systems are interactive and

dynamic. In the early 1990s, organisations used idea management systems primarily to capture, organize, select, and manage ideas from their employees. Other stakeholders were hardly involved. Nowadays, idea management systems typically are online open innovation-based systems that allow a high level of interaction between the idea submitter, the organisation, and other stakeholders. In general, they are aimed at capturing ideas from customers, but other stakeholders (like suppliers and employees) are also occasionally involved.

In 2002 - when Gorski and Heinekamp developed their typology - the web and its technologies were not so far developed as they are now, in 2015. The current idea management systems are sophisticated and advanced software solutions that organisations can buy and install on their servers or in the cloud. These software packages can be seen as a web-based infrastructure or framework supporting the idea management process. Idea management systems are a type of (open) user innovation community as defined by Gangi et al. (2010) as "electronic social environments that allow globally distributed customers to share their expertise and knowledge with one another and the organisation by commenting on existing products and services and proposing new innovations". User innovation communities can enhance the internal R&D activities through an interactive low-cost approach with (primarily) customers.

Whereas idea management systems were first introduced as an interactive idea suggestion program focused on capturing and collaborating on employees' ideas by employees, the birth of crowdsourcing drastically changed the scope of idea management systems from "employees only" to "everybody that is interested". The term crowdsourcing was introduced by Howe (2006) and he defines this as "the act of a company or institution taking a function once performed by employees and outsourcing it to an undefined (and generally large) network of people in the form of an open call". Relating this definition to idea suggestion programs, we can say that the function is that of idea suggestion (programs) is no longer performed only by employees, but by a large open network of people in the form of an modern, online idea management system.

Type of Idea Suggestion Program	Main (dis)advantages
Idea Suggestion Box	<ul style="list-style-type: none"> • Easy to implement • Inexpensive • Hardly any interaction • Input on idea implementation is limited
Kaizen-Teian Systems	<ul style="list-style-type: none"> • Promotes continuous improvement • Employee involvement promoted • Focus on incremental innovation • Program can be misused through submission of number of small ideas that could be combined to one idea
Employee-Driven Idea Systems	<ul style="list-style-type: none"> • Focus on continuous improvement • Employee involvement promoted • Submitter may not have the expertise to successfully implement the idea
Web-based Idea Collaboration Programs or Idea Management System	<ul style="list-style-type: none"> • Highly interactive • Automatic selection possible • Large volume of submitted ideas • Large quantities of trivial ideas

Table 2. Idea Suggestion Program Typology (Gorski and Heinekamp, 2002)

Multinationals such as Dell (see appendix 8.3 and 8.4) and Starbucks (see appendix 8.5) are examples of global organisations that have been using idea management systems and crowdsourcing with success. Dell launched their platform IdeaStorm in February 2007 as a way to interact directly with their customers. It allows customers and other stakeholders to submit ideas, collaborate, and vote on others'. The goal of Dell IdeaStorm is "to hear what new products or services you'd like to see Dell develop"(Dell, 2015). Since the launch, more than 23,000 ideas have been submitted, users have voted almost 750,000 times, over 100,000 comments have been made, and more than 500 ideas have been implemented. Starbucks has launched My Starbucks Idea in early 2008, offering an idea management system likewise to that of Dell. So far, almost 215,000 ideas have been submitted. Whereas traditional idea suggestion programs were primarily based on ideas submitted on a piece of paper in a wooden box, everything is done digitally now. The digitalization of idea suggestion programs opens up endless possibilities.

First of all, it allows organisations to easily involve more stakeholders in their innovation process. This corresponds with the increasing adoption of open innovation models by organisations (Chesbrough, 2003) in which external stakeholders (e.g. customers and suppliers) are actively involved in the innovation process of an organisation. This is a big difference compared with the other types of idea suggestion programs, which are based on the closed innovation concept. Second, idea management systems generally involve an online platform through which participants can submit their ideas, discuss, evaluate, and rank others', and receive feedback. Third, the IT-based approach allows using an idea database or idea repository in which all ideas can be stored and reviewed for future use. Finally, the same approach allows the use of numerous IT techniques, like automated idea selection tools. Ideas can for example be automatically disapproved when they receive a low evaluation score or be highlighted when they receive a high score. The danger with this approach though is that the human evaluators may not have the necessary skills or expertise to appropriately evaluate all ideas.

Whereas the scope of traditional idea suggestion programs is mainly focused at capturing ideas and implementing them through a rather linear process, idea management systems' scope is larger than those of the traditional programs. Nowadays, idea management systems may also cover the creative (ideation) process in the front-end of innovation, the development phase, and the commercialization phase. Idea campaigns can be used to focus the creativity of the community in a specific direction. These campaigns can be fed through findings in any stage (i.e. front-end of innovation, development, or commercialization phase) that management finds interesting to pursue.

The scope of idea management systems can be used to identify its general functions. In the models that are introduced and explained in the next chapter, I distinguish the idea management systems' scope in three phases: core, pre-core, and post-core, with the pre-core and core phase covering the front-end of innovation. Core functions of idea management systems are well expressed in a definition by Hrastinski et al. (2010): "An idea management system lets users suggest, evaluate, and discuss ideas openly or within predefined categories." These functions match with the NCD model activity elements of idea generation & enrichment, idea selection, and concept definition. Combining Hrastinski et al.'s definitions with the work of Baumgartner (2008) and Baez and Convertino (2012) I

developed four functions that I consider to be the core of any idea management system:

- **Capture**
The system needs to be able to capture ideas, either through user submission or through user meetings. This can be done with for example an idea card; a structured way of submitting an idea into an idea database.
- **Evaluate**
Evaluation is the process of deciding which ideas have the highest potential and are worth developing a concrete concept of. Evaluation can be done through user evaluation, but also with the help of automated IT-tools that judge ideas based on metrics (Westerski et al, 2012). Furthermore, expert evaluation is also used when deemed necessary and appropriate.
- **Collaborate**
Collaboration involves discussing, improving, and refining ideas with the goal of making ideas fit for further development. Discussion boards are used to provide a platform through which users can collaborate on ideas. These can both be designed structured and unstructured.
- **Select**
Selection is the process of deciding which concepts should receive substantial funding and should continue development in the development phase. It is not the same as evaluation! Evaluation is choosing those ideas that are worthy of concept development, whereas selection is choosing those concepts that should be developed even further in the development phase.

The pre-core function of idea management systems is what I call the **inspire** function. Inspiring involved stakeholders to submit ideas with for example the help of the aforementioned idea campaigns. Inspiring is all about focusing users creative thinking in the direction of the needs of the organisation. The post-core function - which is located in the development and commercialization phase - of idea management systems is what I call the **feedback** function. This function signifies the importance of having a central database that stores all the ideas, either successful or not. Ideas that are not selected now for good reasons may be the solution for a problem that is encountered three years later. Structural feedback is of key importance. Today's waste may be tomorrow's gold (Gold Rush, 2011). In the next chapter, two conceptual models that I have developed are being introduced and considered.

4. CONCEPTUAL MODELS

In order to reach my research goals of providing organisations with a basic understanding of idea management systems and delivering recommendations for the design of idea management systems that makes them (more) suitable for radical innovation, I have developed two conceptual models (see appendix 8.1 and 8.2): one designed for incremental and one designed for radical innovation. "A conceptual model's primary objective is to convey the fundamental principles and basic functionality of the system which it represents." (Strickland, 2011) The objective of the two models I have developed is to create a basic understanding of the fundamental functional design of idea management systems and use that to bring forward recommendations that make idea management systems (more) suitable for radical innovation. While I have developed both an incremental and radical conceptual model, the focus of the recommendations is on radical innovation. The conceptual model for incremental innovation is used to show the differences.

The model uses the activity elements of the NCD model as a basis for the process that happens in the front-end of innovation. These activity elements are displayed at the top of both conceptual models. Idea management systems are specifically suited for the front-end of innovation. This corresponds with the goal of idea management systems: capturing, evaluating, and improving ideas with the greatest value-adding success potential. The development and commercialization phase of the innovation process have a small yet not unimportant role in the models. Findings in those phases can be used as a source of inspiration for a new idea campaign, or as an answer to problems found in the idea enrichment and concept definition activity element.

I have decided to split the activity element “idea generation & enrichment” into two separate activity elements. This is done because in my understanding these activity elements can be clearly distinguished when considering them in relation to idea management systems. Idea generation is the process in which an opportunity becomes concrete (e.g. putting it in a structured way on paper or in the case of an idea management system submitting it on an idea card). Idea enrichment is the process of collaborating (e.g. examining, evaluating, discussing, improving, refining, burning down) on that concrete idea. There is another small difference when comparing activity elements used in the conceptual models with the original activity elements from the NCD model. In the NCD model, ideas or opportunities generally ‘leave’ through the activity element of concept definition. This is because Koen et al. (2001) assume that there is an organized view of all the ideas and opportunities. When looking at ideas and opportunities in idea management systems, this is definitely not the case. There are hundreds if not thousands ideas submitted simultaneously into the system, which makes it impossible to work out a full concept for all. Ideas are first evaluated, after which most popular (or highest ranked) ideas are fully worked out. This means that the idea selection activity element comes last. In this activity, which is performed by the appropriate decision makers based on the type of innovation, the most viable concepts are picked out to receive substantial funding to continue development in the next phase of the innovation process; (new product) development.

Furthermore, I have developed two separate models because of the differences between incremental and radical innovation and the implications this has on idea management systems and specifically the stakeholders involved in the different activities. Incremental innovation is “doing what we already do better”, whereas radical innovation is all about making a major advance or doing something new to the world/organisation, redefining the environment, and coming up with new things (e.g. products, business models). Already thirty-one years ago, Ettlie et al. (1984) found evidence that suggested that organisations should manage incremental and radical innovation differently. Their findings suggest that top management needs to express a greater support in the innovation process for radical innovation than they need to for incremental innovation. These findings were later enforced by Kelley (2009), whom held a longitudinal comparative case study with managers involved in innovation programs from twelve industry-leading multinational corporations over a three year period. Her findings suggest that organisations should have an adaptive and flexible structure that can both cope with incremental as well as radical innovation. Rice et al. (1998) found that a proactive approach of strategic management is vital for radical innovation. Other studies that stress the importance of treating incremental as well as radical innovation in a different way are Tushman and O'Reilly (2006)

and Magnusson and Martini (2008). Sandström and Bjork (2010) call an idea management system that treats incremental and radical innovation in a different way a “dual idea management system” and Lindroos (2006) calls this a “twin-track model”. The essence of both terms is the same: Dual idea management systems or twin tracks are systems that are designed so that ideas take a different path with different stakeholders involved depending upon their nature (i.e. incremental or radical). Typically, incremental ideas go faster through the process than radical ideas because they usually are simple ideas that can be easily implemented and do not need a lot of adjustments or approval from top management to be implemented.

Before introducing and discussing the models further, it is important to mention that these models are completely based on my own findings and creative thinking during my literature review, and the models are not in any way tested in practice. I am not claiming in any way possible that this model represents the perfect design of idea management systems. It should be used as a dynamic model that provides organisations with the fundamentals of idea management systems and it should be modified for specific organisational needs or circumstances. In the next (sub)sections the phases and elements of the models are considered in a chronological order, starting with the elements in the pre-core phase, followed by those in the core and post-core phase. After that the engine and the influencing factors are considered. Last but not least, an example of an idea being processed through the system is given. I will consider the incremental and radical model parallel. At each phase I will discuss and explain the differences between the incremental and radical model.

4.1 Pre-core

4.1.1 *Opportunity Identification and Opportunity Analysis*

In these two activity elements attractive opportunities are identified and informally analysed by stakeholders of the organisation that are involved in the idea management system. Examples of these stakeholders are employees, customers, and suppliers. Opportunity identification can be done through creativity methods like focus groups and brainstorming, but opportunities can also be discovered through individual insights. An employee may suddenly come up with a great way of improving the efficiency of a manufacturing machine. A supplier may come up with a radical new supply chain management technique that completely changes the rules of the game.

Ideas can be submitted after any kind of opportunity identification (e.g. brainstorming) but an extremely important role in the pre-core is addressed to the inspiring function of idea management systems in the form of idea campaigns. Idea campaigns can be used to focus the opportunity search in a specific direction or domain. Radical innovations are more strategic by definition and thus the inspiration is more likely to come from an idea campaign driven by strategic management (i.e. top management or the board of directors). A message from strategic management that contains a clear and compelling message of the direction the organisation is looking to go can inspire stakeholders to come up with ideas specific for that situation, instead of incremental ideas like an upgrade or modification of a product. Inspiration for incremental innovation on the other hand should be inspired by operations management (i.e. production management, marketing, sales, etc.). Production management could - for example - develop an

idea campaign specific for employees that work with an inefficient manufacturing machine. Employees are then stimulated to come up with ideas specific to improving the efficiency of that machine. Besides idea campaigns, idea inspiration can also come from other sources (like an individual insight). Additionally, spotting an opportunity may occur in any stage at any time. Users can also come up with a new idea when discussing or evaluating another. These new ideas are then submitted again using a new idea card. In the next section the core of the models is considered.

4.2 Core

The core functions of an idea management system (i.e. capture, evaluate, collaborate, and select) can be seen back in the elements and activities that are present in this part of the models. The function of capturing ideas is performed by the idea card and idea database and corresponds to the activity element of idea generation. The function of evaluation and collaboration is performed in the evaluation and discussion board and corresponds to the activity elements idea enrichment and concept definition. The selection function is performed in the “selection by decision makers” element and corresponds with the activity element idea selection.

4.2.1 Idea Generation

Idea generation is the activity element in which an identified and informally analysed opportunity becomes concrete. The main difference between an opportunity in the opportunity identification and opportunity analysis phase, and an idea in the idea generation phase is that the latter is not only present in someone’s mind but is concrete. This can be informal at first (e.g. on the back of a piece of paper so you don’t forget your idea). When submitting the idea to the organisation, the use of an idea card is recommended. An idea card provides the basis for good idea handling during the rest of the front-end of innovation process. The idea card used in Dell IdeaStorm can be viewed in appendix 8.4. The intent of an idea card is to ensure that all ideas that are submitted into the idea database are clearly structured according to a standard template. Di Gangi et al. (2010) found that Dell IdeaStorm users ignored submitted ideas that lacked a clear description and started to down vote these ideas. While commitment to an idea management system is voluntary, the lack of idea detail or idea description can be killing. The organisation nor other users understand the idea because of this and thus they are not able to contribute on the idea except leave some negative feedback or down vote. Typical details that should be defined during idea submission are a clear description of the idea, a clear description of the benefits, a clear description of the market (who is going to buy or use it?), a clear description of the costs (will it cost a lot or not?), and above all clear categorisation; this means that ideas should be put in categories based on the type of idea they are (product type, relevant department) and the degree of innovation they are (incremental or radical). By categorising ideas early as possible as either incremental or radical, the right stakeholders get in touch with the idea in the next activity elements: idea enrichment and concept definition.

Ideas - in the form of idea cards - are stored in a central repository: the idea database. The idea database is the living heart and an essential part of every idea management system. The idea database needs to be able to gather, process, store, and manage idea cards, and make them accessible for the right group of people at the right time. The idea database is an element that is in continuous use and of extreme importance for all activity elements once an idea has been submitted. During

idea generation, ideas are formally concretised with the help of the standard template of the idea card. They are put in categories selected by the idea submitter or the idea management system’s management. This categorisation - as stressed in the previous paragraph- is important because it can be used to direct ideas to the right collaborators and decision makers. During idea enrichment, concept definition, and idea selection, there is a constant flow of updates regarding the idea. Ideas are edited and modified after discussion, evaluation, and selection, and this is all stored in the central idea database.

The idea database is not restricted to the core of the model only. It can and should also interact with the post-core phase. Status updates of ideas in the development or commercialization phase too are stored in the idea database. This creates an idea management system that spans the entire lifecycle of an idea, from opportunity identification to commercialization of the concept. This is in line with the finding from Turell (2008) that Westerski et al. (2011) mention, which is that “CEOs often mention the need for idea management as one complete and repeatable process”. Furthermore, the idea database is not restricted to successful or accepted ideas only. Rejected ideas should also be stored. This allows for quantitative and qualitative analysis on a dataset composed of all ideas that ever were submitted and went through the system. This analysis can detect patterns and changes in stakeholders’ ideas which can then be used to identify new opportunities. It can also be used to find out what stakeholders consider important (Lindroos, 2006). The findings of this analysis can for example be used as inspiration for future idea campaigns.

4.2.2 Idea Enrichment and Concept Definition

In this part of the models, ideas are examined, screened, evaluated, discussed, improved, torn down, etcetera. The core functions of evaluation and collaboration are performed here. Idea evaluation is a critical step and can be described as the process of deciding which ideas have the highest potential or are most popular, and are worth developing a concrete concept of. Because of the distinction between incremental and radical innovation and the different stakeholders that are involved, there is a distinction in evaluation methods between incremental and radical ideas. Like I mentioned in the introduction of the models, researchers have stressed and underlined the importance of treating incremental and radical innovation in a different way and this includes evaluating and collaborating in a different way with different people on incremental and radical ideas. The aim of the distinction between incremental and radical evaluation is, among others, to prevent what Chesbrough (2004) calls “false negatives”. If radical ideas are managed and evaluated by the same stakeholders as incremental ideas, there is a chance that these ideas are filtered away because they do not fit in the current organisation’s strategy or business model, or inexperienced evaluators think the organisation would never adopt this idea.

By nature, incremental ideas - “doing what we do better” - are more simple and comprehensible than radical ideas. Hrastinski et al. (2010) surveyed multiple idea management system software products and came to the conclusion that these products use “rather simple idea evaluation methods”. Westerski et al. (2011) name a few of these systems like simple up/down-ranking and hybrid ranking systems (which is up/down ranking with a limited number of votes). Dell’s IdeaStorm for example uses a up/down-ranking mechanism. While in my understanding this type of popularity-voting is fine and works fine for incremental innovation, it is not suited for radical innovation. Radical ideas should be evaluated by

internal experts¹ because regular users (e.g. customers) typically do not have the knowledge or expertise to appropriately evaluate radical ideas. However, the clear distinction in evaluating does not mean that radical ideas can be evaluated by experts only. The distinction means that evaluation by the crowd is more appropriate for incremental ideas and evaluation by experts is more appropriate for radical ideas (Bessant et al., 2005).

The discussion board is also a core element of the models. The core function of collaboration is performed here. Ideas are discussed, improved, refined, combined, etcetera. The main activity in the discussion board is the development of a concept or business case as Koen et al. (2001) call it. Again, there is a difference in the model between incremental and radical innovation. In the incremental innovation model “Evaluation & Discussion Board” is displayed as one complete element, whereas in the radical innovation model there is a clear distinction between the evaluation and the discussion element. In the incremental innovation model ideas are evaluated by regular users (as expressed in the last paragraph) and they are collaborated on by the same regular users. The more simple nature of incremental ideas allows regular users that lack specific knowledge or expertise to still be able to collaborate on these types of ideas. In practice, this means that through an interactive discussion between regular users concepts are developed or improved. On the contrary, ideas in the radical innovation model are evaluated by internal experts and after they have decided that an idea is worth further developing it is the job of the moderator² to search for specific users that have sufficient knowledge and expertise to collaborate on the idea. Specific for radical innovation is the search for external experts. These are people who have extensive knowledge about a subject and are willing to share and use that knowledge in an open innovation type of way in an idea management system. Their knowledge is only used in the discussion board or collaboration function of the system. After all, they are external experts and they will not know a lot about the organisation and the organisational strategy. This implicates that they are unsuitable as a decision maker, but may very good collaborators. The discussion board can be designed in multiple ways. It can be a very open and unstructured element, like an online forum. It can also be a very structured element, in which every idea is developed according to a strict order. For example, first the benefits and drawbacks of an idea are thoroughly described and discussed. Second, the required technology is described and discussed. Third, the required intellectual property is discussed. Fourth, the market potential is analysed and discussed, etcetera.

¹ Internal experts are persons who work for the organisation and have a high level of expertise or knowledge concerning a subject. For example: new business developers, intellectual property managers, senior marketer, engineer, salesperson,, senior management.

² The moderator is a person, a group of people, or a department that is assigned to managing the idea management system’s process. Poor management of an idea management system “could have devastating consequences for an organisation” and it is the moderator’s job to act as an organisational representative within the community and to make sure there is a strong and healthy relationship between the organisation and its idea management system’s users (Di Gangi et al., 2010).

4.2.3 Idea Selection

The core function of selection is performed in this element. Selection is the process of deciding which concepts should receive substantial funding and are approved to continue further (technological) development in the more structured development phase. After a concept is approved to continue, it leaves the front-end of innovation. Concepts that are disapproved (or killed) may go back to the idea enrichment and concept definition part of the model to be improved, or stored for infinity in the idea database (e.g. for future reference or analysis purposes).

Like in the previous elements of evaluations and collaboration there is a distinction between incremental and radical ideas. In the models the distinction is made clear with the different stakeholders that are the decision makers. An incremental concept is selected by internal experts or operations management (of the relevant department). A change to a manufacturing machine may for example be made by production management. A radical concept is typically more strategic by nature, and thus it should be selected by other decision makers (i.e. top management or the board of directors). A well-evaluated and developed concept that implies a new business direction cannot be approved by the head of the marketing department but it should be approved by strategic management: top management or maybe even the board of directors. Concepts should be appropriately selected by different decision makers on the basis of the strategic implications of the idea. In the next section the post-core elements of the models are considered.

4.3 Post-core

The post-core elements of development and commercialization are the second and third stage of the innovation process and come after the front-end of innovation. When an idea gets selected by the decision makers, it is pushed forward to the (new product) development phase. Here a (project) team of experts picks up the idea and develops it further, with for example a prototype. In case of a radical innovation, more suited teams are gathered. A NPD or New Business Development (NBD) project team takes the lead while gathering other internal and external experts to continue development. The external experts could be the same experts as those in the discussion element.

The function of an idea management system in the post-core phase is not very extensive. Problems encountered in the development or commercialization phase of an idea can be used as inspiration for a new idea campaign. Furthermore, feedback information is sent to the idea database for archiving and analysis reasons. This is done from every core and post-core element in the model through the feedback loop. In the next section, the engine and influential factors of the models are considered.

4.4 The Engine and Influential Factors

The engine and the influential factors were already discussed in the initial explanation of the NCD model. The engine is at the center of the NCD model and provides power to the activity elements. It consists of the organisational elements leadership, culture, and business strategy. Important remarks to make with regards to the idea management systems are that senior management support is crucial for the innovation quality of an organisation and critical for NPD success (Cooper and Kleinschmidt, 1995; Song and Parry, 1996; Swink, 2000). Risk

taking should not be discouraged because discouraging it can have a negative influence on the creativity of stakeholders. Zien and Buckler (1997) identify other leadership and cultural factors that are typical for a highly innovative organisation. First, continuous support from leadership towards innovation activities is important. This means that all layers of management (and not only senior management) should support innovating activities. Not every employee or customer needs to be innovative, but they need to feel that they are allowed to and have the freedom to do so. Second, employees and other stakeholders should be encouraged towards participating in the innovation process. This can be done through (non-)financial incentives, but it can also be done through social incentives. Once a majority is actively participating in the innovation process, the rest is likely to follow. Third and very relevant for idea management systems, is the encouragement of a close interaction between employees and customers. A strong relationship between employees and customers strengthens the innovative capabilities of both groups. It also stresses the presence of employees in the idea management system. They are needed in the discussion to provide ideas with feedback and improvements that they know fit with the organisation.

The influential factors include environmental factors that influence the engine and/or the activity elements. While these are considered as uncontrollable by an organisation, this does not mean they cannot be influenced by actions performed by an organisation. Organisations should always try to bend these factors (e.g. tax policy, environmental regulations, and intellectual property law) to work in their favor - for as long as this is ethically and morally responsible of course. In the next section, an example of an idea being processed through an idea management system is given.

4.5 Example

Jon - a 21-year old student - is driving to his family in Amsterdam during a heavy snowstorm. On the radio, he hears a commercial from a company called RLJ, a multinational that produces hardware for the consumer market. RLJ is announcing that they have launched a new website on which consumers can submit ideas of what they would like to see be developed by the company. RLJ expresses in the commercial that they are looking to extend their market to other industries. Jon - who is a big fan of RLJ's products - notes the web address down and decides to visit it when he gets home.

During dinner, Jon talks with his older brother. He complains about how bad the touchscreen on his recently bought built-in car navigation works. Jon says he should just buy another with a better touchscreen. Jon disagrees, and argues that a car navigation with a capacitive touchscreen (which is generally used in high-end smartphones) is only available at a starting price of 1000 euros. Suddenly, Jon thinks back to RLJ's commercial. This might be a gap in the market that RLJ would be able to fill! He puts a note in his phone so he doesn't forget.

While driving back home, Jon keeps thinking about the opportunity he spotted. In the car, he starts an informal and intuitive analysis of the opportunity. RLJ has experience with high-end smartphones and tablets, so they know how to make good touchscreens. They also have experience with navigation devices for hikers. Jon believes that if RLJ combines this knowledge and expertise, they should be able to produce car navigations with good capacitive touchscreens in the price range of 250 - 750 euros.

The next morning, Jon visits the website of RLJ to submit his ideas. He creates an account, which requires him to agree with the general terms of service that, among others, covers intellectual property rights. RLJ has chosen that all ideas that are submitted are appointed intellectual property of RLJ. The submitters of ideas that get implemented are rewarded with a free product of choice. Jon starts filling in the idea submittal form. He needs to describe his idea, the benefits and drawbacks it has, the potential customers, and the technology that is needed. Jon also needs to put his idea in a category. The interactive idea card helps him with this. Jon selects 'New Business Development' and manually adds the tags automotive, navigation, and touchscreen.

Meanwhile, in the back-end of the system, the idea gets valued as 'radical', due to the new business direction this idea implies. RLJ currently does not produce car navigation devices. Looking from RLJ's perspective, the idea is a result of an idea campaign and has been successfully submitted into the idea database using an idea card. At the same time, other users are voting the idea up because they like the idea, while a moderator is sending the idea to internal experts for evaluation. The internal experts discuss the idea with each other during lunch, and find the idea viable and feasible enough for concept development.

Time passes, while internal experts are cooperating with customers, employees, and some external experts, to improve the concept of RLJ's built-in car navigation. A SWOT analysis is performed, competitors are mapped, and required technologies are researched. A few weeks later, the group of moderators believes the concept to be good enough described to be sent forward for selection by the decision makers. RLJ's top management and the board of directors consider the concept during their monthly meeting. They like the concept and agree to invest a substantial amount of money in the further development, starting with a professional business analysis and the building of a prototype. A project team consisting of both internal and external NPD and New Business Development (NBD) professionals is gathered to guide the concept through the next phases of the innovation process. A year later, Jon receives a brand new built-in car navigation as a reward for sharing his idea with RLJ.

5. CONCLUSION

This paper started with the following research question: *What recommendations should be taken into account when designing an idea management system in the front-end of the open innovation process in order to improve the management of radical ideas that are captured from the crowd?* The goal of this research paper is to provide organisations with a basic understanding of idea management systems and more specifically deliver a set of recommendations regarding the design of idea management systems that enable them to be (more) suitable for radical innovation.

The key problems of idea management systems that were researched in this paper are the focus on incremental innovation and the associated lack of successful radical innovations. In my opinion, the main source of these problems is that incremental and radical ideas get lumped together while they deserve a different and separate handling. To help give an answer to the research question, two conceptual models have been developed: one for incremental and one for radical innovation. These models express and depict the differences between the handling of incremental and radical ideas in idea management systems in the front-end of innovation. The difference is mainly in whom

you involve in the development of a concept. Koen et al.'s (2001) NCD model provides the basis for the models by representing the process in the front-end of innovation. In the next part of this concluding chapter a set of recommendations will be given. These recommendations should be taken into account when you design an idea management system and want it to be suitable for radical innovation. It can be of interest for innovation managers, idea management system developers and designers, and anyone else that wishes to implement an idea management system in their firm.

An early distinction regarding the degree of innovation is essential

Besides the categorisation on product type etcetera, the most important categorisation is done on the basis of the degree of innovation (i.e. incremental or radical). Research (e.g. Ettlie et al., 1984; Rice et al., 1998; Tushman and O'Reilly, 2006; Kelley, 2009) have shown that incremental and radical innovation needs to be managed differently due to their difference in nature. Organisations need to be able to adapt to different types of innovation and design their innovation systems accordingly. In idea management systems, this manifests itself primarily in the different stakeholders that are involved in the core elements of the idea management system. In case of a radical idea, more (external) experts are consulted. This means that by making an early distinction between incremental and radical ideas, ideas are more likely to get in touch with the right group of users. This brings me to the next recommendation.

A well-structured standard template needs to be used for idea submission

Ideas need to be submitted using a well-structured and developed standard template in order to make sure that all ideas that are submitted to the organisation meet a minimal required level of quality. It is proven that ideas that lack a clear description may be ignored by users, even if the idea itself is very good (Di Gangi et al., 2010). If users do not understand the idea, it is likely not to become popular among users and it gets trashed. A standard template for idea submission - the idea card element in the models - helps to make sure ideas meet a minimal level of quality. Idea categorisation is also important. This means that ideas are categorised by e.g. product type or business department. The most important categorisation - regarding the degree of innovation - was already mentioned above and is also part of a well-structured idea card.

Different users need to be involved depending on the degree of innovation

The differences between incremental and radical innovation also expresses itself in the different types of idea management system's users that need to be involved in the different elements. Incremental ideas get evaluated and collaborated with regular users like customers and employees, while in the case of radical ideas experts are already consulted in the evaluation and collaboration elements of the model. These experts can be internal or external. Internal experts are highly skilled or expertised individuals or departments who work for an organisation, while external experts do not work directly for the organisation and need to be actively sought by the moderators or management of the idea management system or overall innovation program. There is also an important distinction in the different decision makers in each model. Incremental ideas get selected by a lower layer of management than radical innovation, because of the more strategic implications that radical innovation generally has.

Inspiration needs to come from the right layer of management

Due to the differences between incremental and radical innovation and the implications this has, inspiration for idea campaigns needs to be come from a different layer of management. This is in line with the findings from Ettlie et al.: top management needs to be more involved in case of radical innovation. Idea campaigns aimed at getting incremental ideas (e.g. a more efficient process or machine) can be developed by operations management or even lower management in cooperation with innovation management. On the contrary, idea campaigns aimed at getting radical ideas (e.g. new products or a new business direction) needs to be developed by strategic management. A proactive approach by strategic management as found by Rice et al. (1998) is of key importance. This implicates that strategic management needs to have a clear long-term strategy and vision. They need to know in which direction they want to steer the organisation and use that knowledge to develop effective idea campaigns. A clear long-term vision also makes it a lot easier for internal experts to evaluate radical ideas. The organisational strategy can function as a framework of reference for them.

In the last paragraph of this conclusion, I want to spend some time on giving some other brief comments regarding idea management system. While the design of an idea management system is important, other elements are important too. It should never be forgotten that this system is merely a support for a human process. This means that focusing on IT only is not going to help you innovate better. Just as important are standard practices and guidelines, to ensure that the innovation processes in your organisation are aligned with your organisation's strategy, goals, and culture. Also, maintaining a healthy and strong relationship between an organisation and its idea management system users is of extreme importance. It can break or make your innovation efforts. Your community will not sustain itself, active interaction with your users is essential. Furthermore, I don't believe in structuring the process too much. Users shouldn't be dictated as to what to do and in which order. Creativity and curiosity need to be of topmost importance. Bad ideas aren't bad. They are part of the process.

5.1 Limitations and future research

In this paper, I have provided two conceptual models and accompanying recommendations with regard to the design of idea management systems. These models are a simplification of idea management systems in reality and they need to be viewed as such. The models do not show their relationship in the overall picture of the innovation activities in the front-end of innovation. This research is also limited by its lack of practical research. The model has not been tested or discussed with designers or developers of idea management systems. I would love to see future researchers test my models and see how well (or not) they represent reality. Nothing is made straight perfect, and neither are my proposed models.

While I have not done extensive practical research, I have of course browsed through current active idea management systems. This showed me that the key problems that were mentioned in the introduction are still relevant. Loads of trivial ideas and ideas that are redundant are being submitted every day. The other five key problems (i.e. a large volume of submitted ideas, sudden peaks of submissions, high human workload, redundancy of ideas, and a large proportion of trivial ideas) are definitely worth researching. Especially the high

human workload that is associated with the large volume of submitted ideas and the sudden peaks of submission needs to receive more attention. Perhaps further developed IT-tools and techniques help reduce the human workload. Westerski et al. (2010) for example argue that the semantic web (a component of Web 3.0, the successor of Web 2.0) offers possibilities to drastically reduce the human workload in idea management systems. Perhaps, in the near future, computers are so smart that they can evaluate and enrich ideas themselves.

The last point I wish to convey is that I would suggest more research to look at the design and applicability of idea campaigns. There has hardly been done any scientific research on this topic, though these idea campaigns are offered on relatively large scale by idea management system vendors. Future research on idea campaigns could for example study what the effect of certain design characteristics is on the outcome (i.e. the quality and type of the submitted ideas).

6. ACKNOWLEDGMENTS

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7. REFERENCES

Ali, A. (1994). Pioneering versus incremental innovation: Review and research propositions. *Journal of product innovation management*, 11(1), 46-61.

Baez, M., & Convertino, G. (2012). Designing a facilitator's cockpit for an idea management system. In *Proceedings of the ACM 2012 conference on Computer Supported Cooperative Work Companion* (pp. 59-62). ACM.

Bansemir, B., & Neyer, A. K. (2009). From idea management systems to interactive innovation management systems: Designing for interaction and knowledge exchange. *IDEA*, 1, 1-2009.

Baumgartner, J. (2008). *An Introduction to Idea Management*.

Bessant, J., Lamming, R., Noke, H., & Phillips, W. (2005). Managing innovation beyond the steady state. *Technovation*, 25(12), 1366-1376.

Brem, A., & Voigt, K. I. (2007). Innovation management in emerging technology ventures—the concept of an integrated idea management. *International Journal of Technology, Policy and Management*, 7(3), 304-321.

Calantone, R. J., & Benedetto, C. A. (1988). An integrative model of the new product development process. *Journal of Product Innovation Management*, 5(3), 201-215.

Carrier, C. (1998). Employee creativity and suggestion programs: an empirical study. *Creativity and Innovation Management*, 7(2), 62-72.

Chesbrough, H. W. (2003). *Open innovation: The new imperative for creating and profiting from technology*. Harvard Business Press.

Chesbrough, H. (2004). *Managing Open Innovation*. *Research Technology Management*, Vol 47, No. 1, pp. 23-26.

Chesbrough, H.W. (2006). *Open business models, how to thrive in the new innovation landscape*. Boston, Harvard Business School Press

Christensen, C. M., & Raynor, M. E. (2003). *The innovator's solution: Using good theory to solve the dilemmas of growth*. Harvard Business School Press, Boston.

Clark, P. A., & Staunton, N. (1989). *Innovation in technology and organization*. London: Routledge.

Conway, S., & Steward, F. (2007). *Managing Innovation*. Oxford University Press.

Cooper, R. G. (2011). *Winning at new products: Creating value through innovation*. Basic Books.

Cooper, R. G., & Kleinschmidt, E. J. (1995). Benchmarking the firm's critical success factors in new product development. *Journal of product innovation management*, 12(5), 374-391.

Day, G. S., Gold, B., & Kuczmarski, T. D. (1994). Significant issues for the future of product innovation. *Journal of Product Innovation Management*, 11(1), 69-75.

Dell (2015). About IdeaStorm. Retrieved May 2015, from <http://www.ideastorm.com/idea2AboutIdeaStorm>

Di Gangi, P. M., & Wasko, M. (2009). Steal my idea! Organizational adoption of user innovations from a user innovation community: A case study of Dell IdeaStorm. *Decision Support Systems*, 48(1), 303-312.

Di Gangi, P. M., Wasko, M., & Hooker, R. (2010). Getting customers' ideas to work for you: Learning from Dell how to succeed with online user innovation communities. *MIS Quarterly Executive*, 9(4), 213-228.

Ettlie, J. E., Bridges, W. P., & O'keefe, R. D. (1984). Organization strategy and structural differences for radical versus incremental innovation. *Management science*, 30(6), 682-695.

Fairbank, J. F., & Williams, S. D. (2001). Motivating creativity and enhancing innovation through employee suggestion system technology. *Creativity and Innovation Management*, 10(2), 68-74.

Freeman, C., & Soete, L. (1997). *The economics of industrial innovation*. Psychology Press.

Financial Times (2008). The nuts and bolts of innovation. *Financial Times*, March 5.

Gartner (2010). *Gartner's 2010 Hype Cycle For Emerging Technologies*

Gorski, C., & Heinekamp, E. J. (2002). Capturing employee ideas for new products. *The PDMA ToolBook 1 for New Product Development*, 219.

- Höyrylä, M., & Hyysalo, S. (2009). The fog of innovation: Innovativeness and deviance in developing new clinical testing equipment. *Research policy*, 38(6), 984-993.
- Howe, J. (2006). The rise of crowdsourcing. *Wired magazine*, 14(6), 1-4.
- Hrastinski, S., Kviselius, N. Z., Ozan, H., & Edenius, M. (2010). A review of technologies for open innovation: Characteristics and future trends. In *System Sciences (HICSS)*, 2010 43rd Hawaii International Conference on (pp. 1-10). IEEE.
- Jensen, A. R. V. (2012). A literature review of idea management. In *DS 71: Proceedings of NordDesign 2012*, the 9th NordDesign conference, Aalborg University, Denmark. 22-24.08. 2012.
- Kelley, D. (2009). Adaptation and Organizational Connectedness in Corporate Radical Innovation Programs*. *Journal of product innovation management*, 26(5), 487-501.
- Khurana, A., & Rosenthal, S. R. (1997). Integrating the fuzzy front end of new product development. *Sloan management review*, 38, 103-120.
- Khurana, A., & Rosenthal, S. R. (1998). Towards holistic "front ends" in new product development. *Journal of Product Innovation Management*, 15(1), 57-74.
- Koen, P., Ajamian, G., Burkart, R., Clamen, A., Davidson, J., D'Amore, R., ... & Wagner, K. (2001). Providing Clarity and a Common Language to the "Fuzzy Front End". *Research Technology Management*, 44(2), 46-55.
- Koen, P.A., Ajamian, G., Boyce, S., Clamen, A., Fisher, E., Fountoulakis, S., Johnson, A., Puri, P., & Seibert, R. (2002). Fuzzy front-end: Effective methods, tools and techniques. In *PDMA Toolbook for New Product Development 1*, ed. P. Belliveau, A. Griffin, and S. Somermeyer, 2 - 35. New York: John Wiley and Sons.
- Kirchhoff, B. A. (1991). Entrepreneurship's contribution to economics. *Entrepreneurship theory and practice*, 16(2), 93-112.
- Kleinschmidt, E. J., & Cooper, R. G. (1991). The impact of product innovativeness on performance. *Journal of product innovation management*, 8(4), 240-251.
- Lindroos, M. (2006). Developing Front-End idea management and information processing. *Innovation Management Institute Working Paper*.
- Magnusson, M., & Martini, A. (2008). Dual organisational capabilities: from theory to practice—the next challenge for continuous innovation. *International Journal of Technology Management*, 42(1), 1-19.
- McKinsey (2010). "Innovation and Commercialization; McKinsey Global Survey Results." *McKinsey Quarterly* 4.
- Poetz, M. K., & Schreier, M. (2012). The value of crowdsourcing: can users really compete with professionals in generating new product ideas?. *Journal of Product Innovation Management*, 29(2), 245-256.
- Porter, M. E. (1979). How competitive forces shape strategy.
- Robinson, A. G., Stern, S., & Stern, S. (1997). *Corporate creativity: How innovation and improvement actually happen*. San Francisco, CA: Berrett-Koehler Publishers.
- Sandström, C., & Bjork, J. (2010). Idea management systems for a changing innovation landscape. *International Journal of Product Development*, 11(3), 310-324.
- Schuring, R. W., & Luijten, H. (2001). Reinventing suggestion systems for continuous improvement. *International Journal of Technology Management*, 22(4), 359-372.
- Stel, F.G. (2014). *Turning Science Into Business 2.0: Innovation Management & Entrepreneurship*. Rijksuniversiteit Groningen.
- Story, V., O'Malley, L., & Hart, S. (2011). Roles, role performance, and radical innovation competences. *Industrial Marketing Management*, 40(6), 952-966.
- Strickland, J. (2011). *Simulation Conceptual Modeling*.
- Song, X. M., & Parry, M. E. (1996). What separates Japanese new product winners from losers. *Journal of Product Innovation Management*, 13(5), 422-439.
- Swink, M. (2000). Technological innovativeness as a moderator of new product design integration and top management support. *Journal of Product Innovation Management*, 17(3), 208-220.
- Tidd, J., & Bessant, J. (2009). *Managing Innovation: Integrating technological, market and organizational change*. Fourth Edition. Chichester: Wiley.
- Tidd, J., & Bessant, J. (2009). Developing an organizational culture that facilitates radical innovation in a mature small to medium sized company: emergent findings.
- Turrell, M. (2008). *Collecting Ideas from Consumers & Customers*, available at <http://www.youtube.com/watch?v=QVZLrcOJR6Y>
- Tushman, M. L., & O'Reilly III, C. A. (2006). Ambidextrous organizations: Managing evolutionary and revolutionary change. *Managing innovation and change*, 170.
- Rice, M. P., O'Connor, G. C., Peters, L. S., & Morone, J. G. (1998). Managing discontinuous innovation. *Research-Technology Management*, 41(3), 52.
- Rothwell, R., & Zegveld, W. (1985). *Reindustrialization and technology*. ME Sharpe.
- Vagn, A. R., Clausen, C., & Gish, L. (2013). Towards a new perspective of managing ideas in front-end innovation as actor networks. In *19th International Conference on Engineering Design* (pp. 181-190).
- Verespej, M. A. (1992). Suggestion systems gain new luster. *Industry Week*, 241(22), 11-18.
- Veryzer, R. W. (1998). Discontinuous innovation and the new product development process. *Journal of product innovation management*, 15(4), 304-321.

Westerski, A., Iglesias, C. A., & Rico, F. T. (2010). A model for integration and interlinking of idea management systems. In *Metadata and Semantic Research*(pp. 183-194). Springer Berlin Heidelberg.

Westerski, A., Iglesias, C. A., & Nagle, T. (2011). The road from community ideas to organisational innovation: a life cycle survey of idea management systems. *International Journal of Web Based Communities*, 7(4), 493-506.

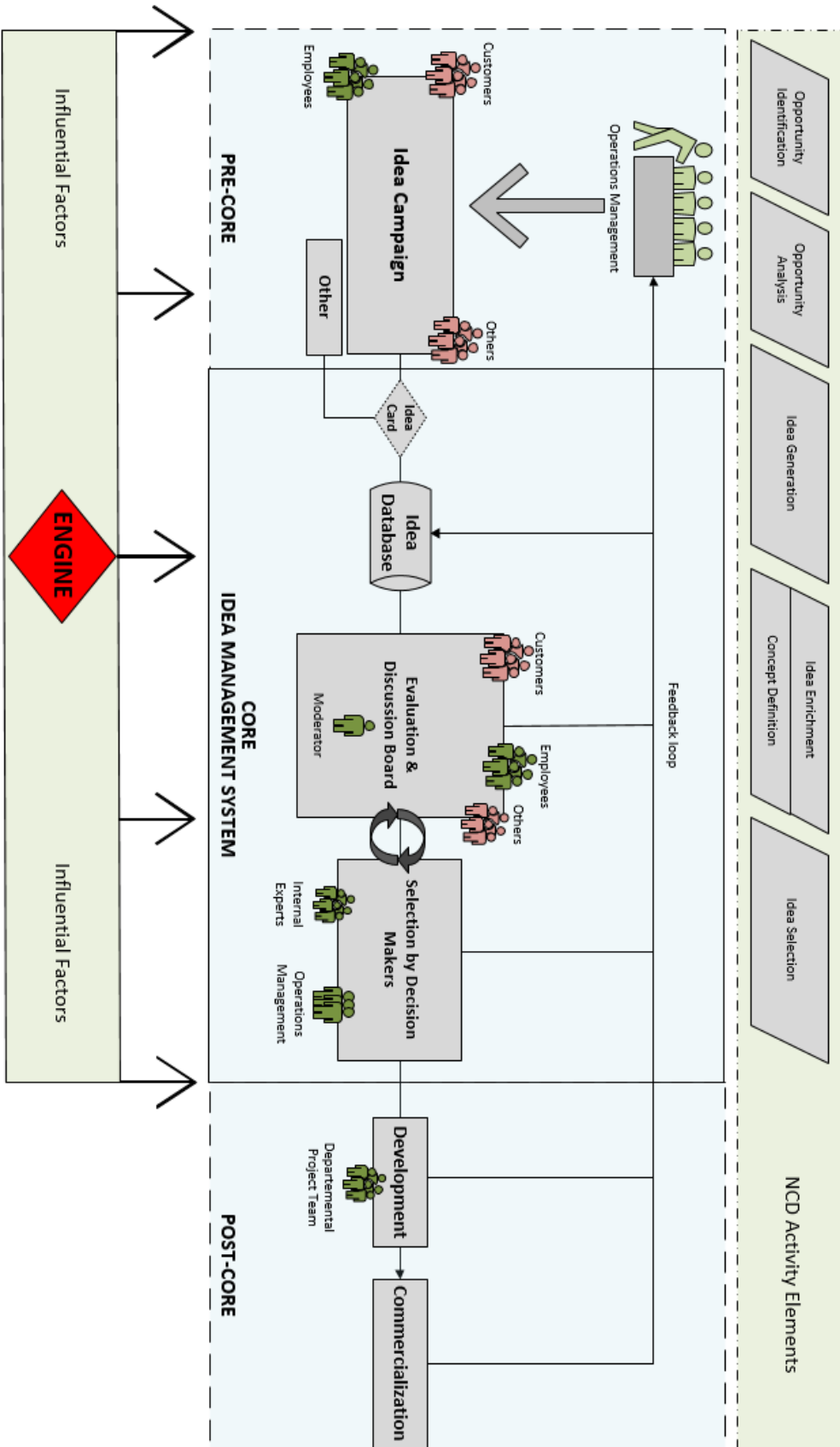
Westerski, A., Dalamagas, T., & Iglesias, C. A. (2013). Classifying and comparing community innovation in Idea Management Systems. *Decision Support Systems*, 54(3), 1316-1326.

Zhang, Q., & Doll, W. J. (2001). The fuzzy front end and success of new product development: a causal model. *European Journal of Innovation Management*, 4(2), 95-112.

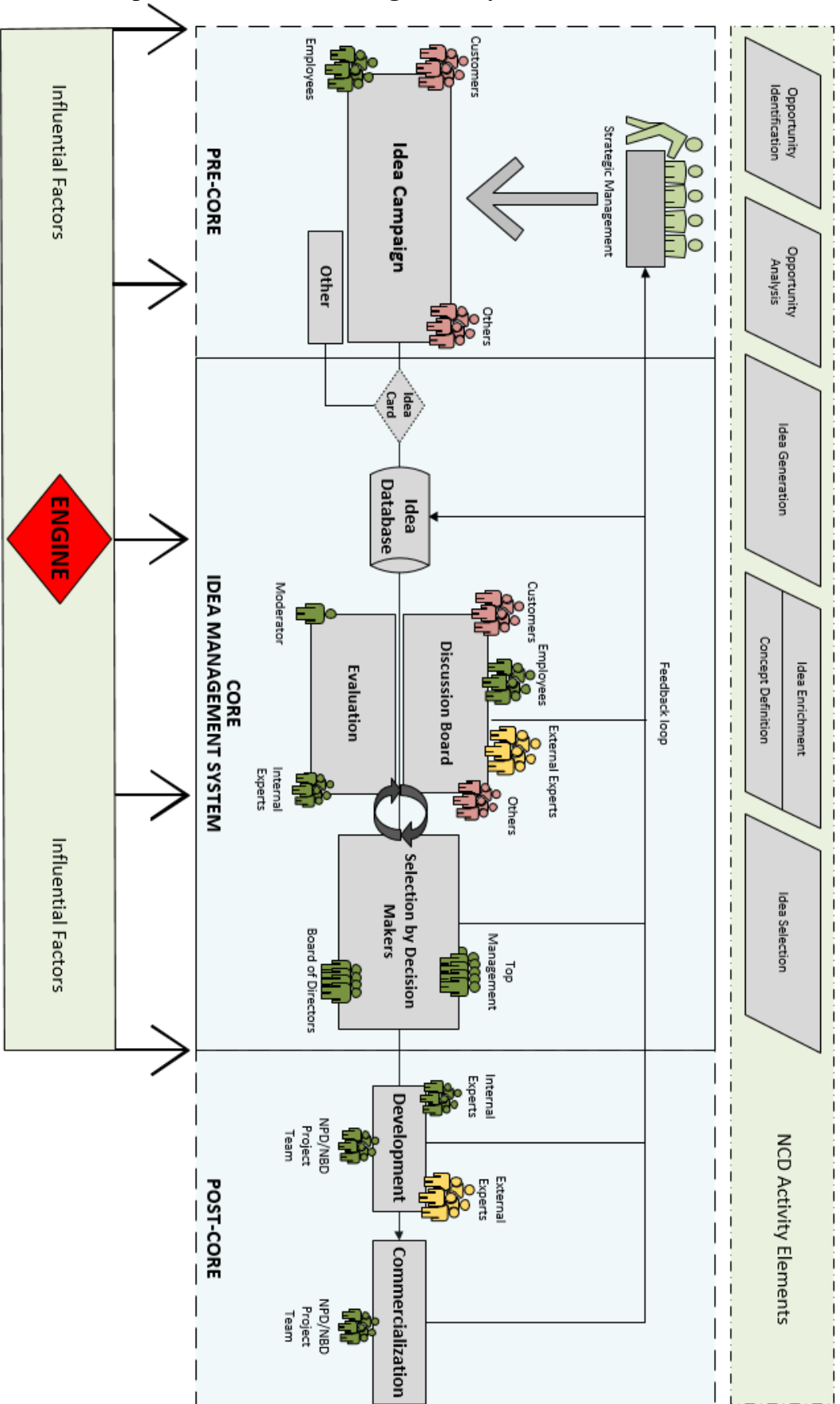
Zien, K. A., & Buckler, S. A. (1997). From experience dreams to market: crafting a culture of innovation. *Journal of Product Innovation Management*, 14(4), 274-287.

8. APPENDICES

8.1 Conceptual Model Idea Management System for Incremental Innovation



RADICAL INNOVATION



8.2 Conceptual Model Idea Management System for Radical Innovation

8.3 Dell IdeaStorm Homepage

IdeaStorm can help take your idea and turn it into reality.

OVER 23,554 IDEAS SUBMITTED. 747,418+ VOTES. 101,611+ COMMENTS. 549+ IDEAS IMPLEMENTED.

IDEAS


STORM SESSIONS

SUBMIT YOUR IDEA

Member Login | Join IdeaStorm

Featured

NFC-chip equipped laptops




Posted by: SonnydeRuitter

The latest smartphones nowadays are equipped with NFC chips, allowing smartphones to react whenever ...


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31 Votes | 10 Comments



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Alienware alpha UI changes

Posted by: 3creg3
Status: Acknowledged
Jun 9, 2015

i think the Alienware alpha has a good UI. That being said it lacks a few thing that would make it great. 1. I would love ...

2 Votes | 1 Comment




Make Keyboards with Fn Key

Posted by: Snikerdoodlz
Status: Acknowledged
Jun 8, 2015

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Alienware alpha UI changes

Posted by: 3creg3
Status: Acknowledged
Jun 9, 2015

i think the Alienware alpha has a good UI. That being said it lacks a few thing that would make it great. 1. I would love ...

2 Votes | 1 Comment




A universal fix to the "delicate proprietary chip" issue

Posted by: eMarkable
Status: Acknowledged
May 30, 2015

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8026 Points
108 Ideas
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sugarbear
4157 Points
70 Ideas
15824 Votes

Last Activity : Mar 23, 2015




jewishnose14
1141 Points
3 Ideas
268 Votes

Last Activity : Feb 10, 2015



StigtriX
1100 Points
30 Ideas
349 Votes

Last Activity : Jan 15, 2015



natakuc4
851 Points
49 Ideas
256 Votes

Last Activity : Jan 16, 2015

19

8.4 Dell IdeaStorm Idea Card

IdeaStorm

can help take your idea and turn it into reality.

OVER 23,554 IDEAS SUBMITTED. 747,418+ VOTES. 101,611+ COMMENTS. 549+ IDEAS IMPLEMENTED.

IDEAS

STORM SESSIONS

SUBMIT YOUR IDEA

Hi [Name] Welcome Back!

Profile Settings

Logout

Tell us your idea

Idea Title or Question

Description

Categories

Please select related categories below:

Dell Ideas

Product Ideas

Topic Ideas

My Activity

Your Recent Activity

Tips for Posting Your Ideas

- Choose a title that summarizes your idea
- Use the duplicate checker to avoid posting an idea that was already suggested
- Include a picture if it helps illustrate your idea
- Fully explain your idea in wording that can be easily understood
- Reply to questions or comments on your idea
- If you need assistance with Dell products please contact Dell Support for your region or post your issue on the [Dell Community Forums](#).

8.5 My Starbucks Idea Homepage

FAQ



My Starbucks Idea

[GOT AN IDEA?](#) [VIEW IDEAS](#) [IDEAS IN ACTION](#)

Hi there, [Sign In](#) to make a comment.

Share   
Follow us on [twitter](#)

Ideas so far

Search Ideas



PRODUCT IDEAS

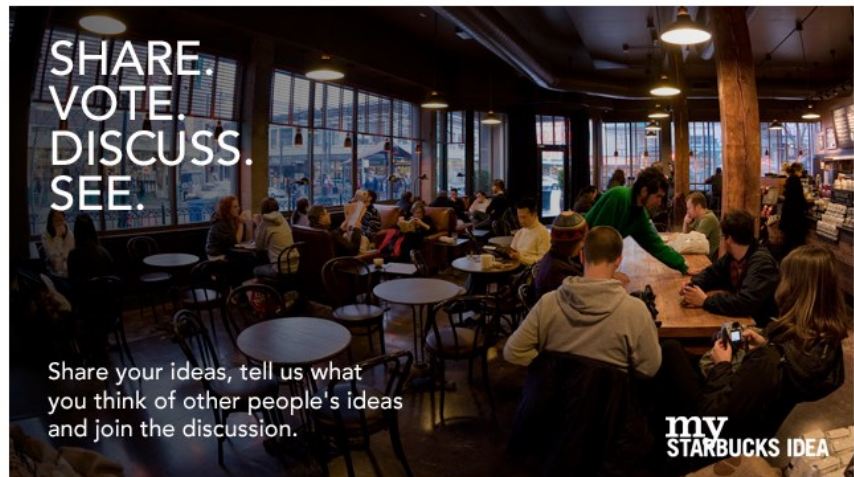
- 45,069 Coffee & Espresso Drinks
- 6,204 Frappuccino® Beverages
- 13,046 Tea & Other Drinks
- 22,356 Food
- 11,002 Merchandise & Music
- 23,018 Starbucks Card
- 5,613 New Technology
- 14,208 Other Product Ideas

EXPERIENCE IDEAS

- 11,527 Ordering, Payment, & Pick-Up
- 21,833 Atmosphere & Locations
- 14,464 Other Experience Ideas

INVOLVEMENT IDEAS

- 6,561 Building Community
- 11,105 Social Responsibility
- 6,576 Other Involvement Ideas
- 2,128 Outside USA



Most Recent Ideas

- 4 Min(s) Ago [Thai-style Peanut Chicken Wrap](#)
- 1 Hour(s) Ago [*Lets Have a PARTY IN SEATTLE...Invited people throughout the Starbuck...](#)
- 3 Hour(s) Ago [Baby Changing Tables](#)
- 3 Hour(s) Ago [Why can't you ship coffees from the Seattle Roastery?](#)
- 7 Hour(s) Ago [Please lower the sugar content in your Frappuccinos](#)
- 12 Hour(s) Ago [Bring back the mocha cookie crumble.](#)
- 15 Hour(s) Ago [jazzy turtle](#)
- 16 Hour(s) Ago [Layered Napoleon Frappuccino](#)
- 16 Hour(s) Ago [Can u do something about THE LOUD CELLPHONE SPEAKER CONVOS?](#)
- 16 Hour(s) Ago [A coconut mocha frappaccino????YESSSSSS!!!](#)

8.6 Traditional Idea Suggestion Programs

Submit Your Thoughts Concerning an Existing 3M

3M welcomes comments or suggestions you may have for improvements or new uses of existing **questions** concerning 3M Products, please use the **Contact 3M** link below.

You will not receive a reply to Your Comments.

3M Product Name and/or Number:

Your Comments:

Submit



Please share enough details about your idea for us to make an evaluation of its potential. If you have attachments that need to be included with your submission, please note that in your initial message. Should you have multiple ideas that aren't related, please make separate submissions (for example, an idea related to fountain dispensers and an idea for a new bottle would warrant separate entries).

Idea (required):

Characters Left: 2500

Please give a brief synopsis of the value this idea may provide.

Business Value (required):

Characters Left: 500

Include any relevant information about copyrights, patents or trademarks that are associated with your concept.

Characters Left: 500

Please provide details about your professional experience as it relates to your submission. (required):

Characters Left: 500