Recommendations for non-medical innovation that creates higher patient satisfaction

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Recommendations to improve non-medical innovation that creates higher patient satisfaction

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Summary

(Nederlandse samenvatting in appendix A.4)

Developments in the Dutch healthcare sector, such as the new system of healthcare insurance, force the healthcare providers' to respond as competition has increased and demand has changed. The ability to innovate effectively and efficiently is becoming important. Furthermore, the focus is shifting from merely quality of care as competitive factor, towards patient satisfaction. Especially for hospitals this leads to challenges.

Non-medical innovation is very important for both quality of care and patient satisfaction. However, there is a lack of knowledge on the practices for non-medical innovation in hospitals. The aim of this research was to increase the knowledge on the non-medical innovation practices by answering the following research question: *What are best practices for non-medical innovation in Dutch hospitals that creates higher patient satisfaction?*

The best practices and relations from service innovation literature were combined in a "service innovation success factors model". This model was adapted for non-medical innovation through case study research in five innovation projects in Dutch hospitals. These projects all had the common purpose to create higher patient satisfaction. The findings from these case studies have led to a "non-medical innovation success factors model" for Dutch hospitals. This model describes the success factors for non-medical innovation, corresponding practices, influencing variables and relations, and so provides an overview of the important aspects in a non-medical innovation project.

However, due to the design of the research, no best practices could be found. But several commonly used practices for non-medical innovation in Dutch hospitals could be discovered, for example to involve at least a representative sample of the patient population in the innovation project, to use information about patients from all available sources, and to create a network of hospital managers to share innovation project solutions. Moreover, the case study findings have also shown support for the type of service as a moderating variable. The variable has influence on the non-medical innovation process, the level of patient involvement and the dominant content of patient information used in the innovation project. An important implication for Dutch hospital managers is that they have to determine the type of service that is being improved (customer-routed/SDL or provider-routed/GDL).

Further research should focus on expanding and testing the "non-medical innovation success factors model" from research perspectives: 'Best practices', 'contingency theory' and 'configurations approach'. Before testing the relations, the different variables should be better operationalized. The "service innovation success factors model", distilled from service innovation literature, could be adapted for other (healthcare) sectors and countries as well.

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Preface

This report presents the research methodology and results of the my master thesis assignment. The assignment (25 European Credits) was the final hurdle to receive the degree of Master of Science in Business Administration at the University of Twente, Enschede, The Netherlands. The assignment was initiated and sponsored by Acsense B.V., Hardenberg, The Netherlands. The research was conducted in the period July 2011-January 2012. In the appendix a personal reflection on the master thesis research can be found.

In the research process I have had the support of many people. I would firstly like to thank Johan Bel for the possibility to do my master thesis research at Acsense B.V. He has continuously supported and sponsored my research and provided valuable contributions to steer me into the right direction. He had the patience and trust in me to provide me the freedom I needed. I believe that the results of this research have value for Acsense B.V.

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1. Introduction

In this first chapter the research is introduced. This introduction will start with presenting background information on the development in the Dutch healthcare sector, healthcare providers' responses, hospital innovation and patient satisfaction, to show the necessity of this research. After that, the research problem and questions, the significance of the research findings and the structure of the report are presented.

1.1 Background information

Developments in the Dutch healthcare sector, such as the new system of healthcare insurance, force the healthcare providers' to respond to as competition has increased and demand has changed. The ability to innovate effectively and efficiently is becoming increasingly important. Especially for hospitals this leads to challenges. Furthermore, the focus is shifting from merely quality of care as competitive factor, towards patient satisfaction. In the next paragraphs the statements in this short summary are explained.

1.1.1 Developments in the Dutch healthcare sector

Hospitals are currently experiencing changes in their internal and external environment. Societal trends such as aging, internationalization, individualism and the rise of the information technology have changed the type and amount of healthcare demand (McKee & Healy, 2002; Poiesz & Caris, 2010). Currently, patients expect fast, cheap, individual and professional care and cure. Great progress in medical knowledge, technology and other means have increased the quality of care. These developments are also visible in other countries, such as in the European countries, the United States of America, Japan and Australia (McKee & Healy, 2002; Länsisalmi et al, 2006).

A development specific in the Netherlands is the governmental policy on the costs of the system since 2006 (Schut & Van de Ven, 2005; 2011). (See appendix for summary of Schut & Van de Ven 2005 & 2011.) In the old policy, every year the costs exceeded the fund, leading to a necessity for an increase of the funding and so higher premiums. This continuous increase in costs and premiums has led to a strong growth in public expenditures on healthcare. In the early 1980s the Dekker Committee designed a new healthcare system, based on the idea of a regulated market.[1] Healthcare providers should be competing for new patients and so constantly improving quality of care and keeping the prices as low as possible. To ensure accessibility to health care, all Dutch citizens are obligated by law to be insured at one of the insurance companies for the healthcare expenses of basic treatments. The insurance companies are competing for these customers. To keep the costs as low as possible the healthcare insurance companies have to negotiate with healthcare providers for the prices of the treatments[2] (Schut & Van de Ven, 2011).

[1] This idea is also applied in the privatization of other public sectors, such as education and public transport. It is known as New Public Management. See, for example, De Boer et al (2007) and Pollitt (2011).

[2] This only accounts for prices of treatments in the so-called B-segment. The A-segment contains necessary care that should be available to everyone in the Netherlands. To prevent price increase and fluctuations the prices in this segment are fixed and set by the Dutch government. The proportion of treatments in the B-segment is

1.1.2 Healthcare providers' responses

The effect of all these developments is that healthcare providers and insurance companies have to compete for patients and they have to look for cost efficient methods that combine low prices with high quality of care to attract and retain patients.

Dutch healthcare providers are responding by reorganizing, budget cutting and becoming more cost efficient. Leadership in these organizations has shifted from governance to management (Van Leeuwen, 2008), for example through marketing, innovation and supply chain management. Services and procedures are being improved and created to fulfill the needs of patients.

Patient satisfaction about the care and cure processes and outcomes is becoming an important key performance indicator (Poiesz & Caris, 2010; Ruiter et al, 2011). The attention from the providers' leaders for patient satisfaction is growing with websites, such as Independer.nl, and newspapers, such as Algemeen Dagblad and Elsevier, publishing rankings based on patient satisfaction and quality of care. Hospitals have to innovate to increase the overall quality of care and patient satisfaction.

Especially for hospitals that provide the most urgent and important care, this attitude is contrary to the medical specialists' ideas and logic of working. Instead of focusing on the quality of care for the individual patients, the focus now has to be on speeding up the process, cost efficiency, marketing, etc. Furthermore, hospitals are an important part of the Dutch healthcare system as 25% of the national expenditures on healthcare are on hospital care (CBS, 2009).

1.1.3 Hospital innovation

Several studies show that hospitals are primarily innovating with the aim to increase the quality of care. Djellal & Gallouj (2007) compare four perspectives from literature on innovation processes in hospitals. The first three perspectives (production function, set of technological and biopharmacological capacities, and information system) are used predominantly in hospital innovation literature. The fourth perspective sees the hospital as a complex service provider. Innovation attempts have been less frequently studied through this perspective. This limitation in scope in literature reflects the innovation focus of hospitals. Focusing too much on, for example, medical procedures, the service provision aspect of a hospital is neglected. Hospitals should listen more to their patients to discover their needs and wishes. Taking the perspective of a hospital as a complex service provider will lead to new directions for innovation to include other services, clients and actors.

Hospital innovation can be divided in medical innovation and administrative innovation (Wu & Hsieh, 2011). Wu & Hsieh (2011) define medical innovation as "… a new technology or a new method for effective diagnosis, treatment, and prevention of disease" (p. 228). In contrast, they define administrative innovation as "… a new service process for internal or external work" (p. 228). However, the number and impact of innovations and improvements is limited as hospitals especially innovate through medical innovation. Administrative innovation is somewhat neglected. Wu & Hsieh (2011) however find support for their hypothesis that administrative innovation (further referred to

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growing from 10% in 2005 to 70% in 2012. The Dutch Healthcare Authority (NZa, 2011) has calculated the maximum proportion at 85%.

as 'non-medical innovation') has a bigger effect on the quality of care than medical innovation. Quality of care thus can be improved even more through non-medical innovation. In the Netherlands, the Healthcare Innovation Platform (ZIP, 2009) also states that much improvement is especially possible on the organizational level. Non-medical innovation is therefore very important, not only for the quality of care, but also for patient satisfaction.

The specific attention from the hospital sector towards medical instead of non-medical innovation, might be caused by a lack of knowledge on the used practices for non-medical innovation and performance measurement in hospitals (Länsisalmi et al, 2006; Salge & Vera, 2008). Quality of care is the dominant indicator of innovation success and, as said above, the primary goal. Other indicators, such as patient satisfaction, cannot be objectively measured and receive too little attention. To improve the patient satisfaction, it is necessary to understand the concept, measurement and improvement processes. For example, Länsisalmi et al. (2006) state that involving users and other actors in the development of an innovation may reduce uncertainty about innovation outcomes and thus stimulate the initiation of innovation projects by hospitals towards non-medical improvements.

1.1.4 Patient satisfaction

As stated in paragraph 1.1.3, it is necessary to understand the concept of patient satisfaction. Customer satisfaction about services can be defined as the gap between the expected value of an offering and the perceived value, such as presented in the Synthesized Quality Model by Brogowicz et al. (1990). The expected value is influenced by external influences, traditional marketing activities and the company image. The perceived value is influenced by the technical and functional services offered by the organization, i.e. what is delivered and how it is delivered. The gap between the expected and perceived value is positive when the perceived value is higher than the expected value, which means satisfaction, or negative when the perceived value is lower than expected, which means dissatisfaction. Therefore, to improve customer satisfaction an organization can either lower the expected value or increase the perceived value.

Patient satisfaction is more difficult to determine by patients than customer satisfaction as they usually are treated only once for the same problem. Moreover, they do not have the knowledge to know what to expect from the healthcare provider. The expected value is therefore vague and built on personal elements, such as trust, friendliness, respect, hygiene and feelings (Sitzia & Wood, 1997). Secondly, patients are unable to compare the perceived service with the service of the competitor.

The consequences of this vagueness and incomparability are that hospitals have more freedom in the content of the service offering and the way of delivery and patients are not very keen to switch hospitals. Furthermore, the value of internal patient satisfaction researches, which are done in (almost) all hospitals to acquire information, is questionable, because the concept cannot be adequately measured and compared (Williams, 1994). But the vagueness and incomparability are disappearing as experiences become easier to share on websites and in newspapers. The healthcare system is becoming more transparent, which is the necessary condition for a perfect open healthcare market. This means that competition increases and patient satisfaction becomes more important and thus receives more attention.

1.2 Research problem and questions

In summary, non-medical innovation is very important for both quality of care and patient satisfaction. However, there is a lack of knowledge on the practices for non-medical innovation in hospitals. The aim of this research was to increase the knowledge on the non-medical innovation practices by answering the following research question:

What are best practices for non-medical innovation in Dutch hospitals that creates higher patient satisfaction?

To answer this research question, answers have to be found to the following sub-questions:

- *What are the most important factors in non-medical innovation that creates higher patient satisfaction?*
- *What are the best practices for each of these factors?*

Because too little is known about hospital innovation, especially non-medical innovation, the closely related literature about service innovation was studied. The factors and best practices from service innovation were combined in a "service innovation success factors model". Case study research in five non-medical innovation projects in successful Dutch hospitals was used to adapt this model to non-medical innovation. These projects had the purpose to create higher patient satisfaction. The three sub-questions therefore are:

1. *What are the most important factors in service innovation that creates higher customer satisfaction?*
2. *What are the best practices for each of these factors?*
3. *Are these best practices also used in successful non-medical innovation?*

1.3 Significance of research findings

The results of this research will be beneficial for both hospitals and patients as non-medical innovation has a bigger effect on the quality of care in hospitals than medical innovation and they will lead to higher patient satisfaction. Hospitals can use this higher patient satisfaction to attract and retain patients. For management science this research will provide a view on non-medical innovation in Dutch hospitals.

1.4 Structure of the report

The literature study has led to a theoretical framework that will be presented in chapter 2. Chapter 3 will present the methodology of the case study research to translate the model that resulted from this framework into the context of Dutch hospitals. In chapter 4 the results of this research are presented, which are discussed in chapter 5. Chapter 6 will present the limitations of the research. The conclusions, managerial implications and further research areas are presented in chapter 7.

2. Theoretical framework

The literature study to answer sub-questions 1 and 2 has led to a theoretical framework for the case study research. This theoretical framework is combined into a "service innovation success factors model" that will be presented in section 2.5. Before that, the literature that provided the basis for this model is presented in sections 2.1 (service innovation process), 2.2 (customer involvement), 2.3 (customer information) and 2.4 (service types).

These paragraphs represent the factors in the above mentioned model (sub-question 1). In each of these factors there are sub-factors for which best practices (might) exist (sub-question 2). The four paragraphs will present the factors and sub-factors, best practices and discussions about practices.

2.1 Service innovation and the process

Patient satisfaction is unambiguously related to fulfilling the needs of patients, which is essential in a service approach. Therefore a literature study in service management and service innovation literature was used to find best practices for service innovation that creates higher customer satisfaction. The first paragraph will show more support for the relation between customer satisfaction and services and shows that hospitals are service providers. The second paragraph presents a discussion on the existence of service innovation. In the third paragraph the literature on best practices and success factors for the service innovation process are presented.

2.1.1 Hospitals as service providers

Grönroos (2007) defines a service as "… a process consisting of a series of more or less intangible activities that normally, but not necessarily always, take place in interactions between the customer and service employees and/or physical resources or goods and/or systems of the service provider, which are provided as solutions to customer problems" (p. 52). If an organization therefore wants to improve customer satisfaction, service innovation literature provides the practices and guidelines for efficient and effective improvement projects.

Hospitals are in their essence service providers. Miller (1997) defined a hospital as "… an institution that provides beds, meals, and constant nursing for its patients while they undergo medical therapy at the hands of professional physicians. In carrying out these services, the hospital is striving to restore its patients to health" (p. 5). Their primary activities contain the typical characteristics of services (heterogeneity, inseparability, perishability and variability (Zeithaml et al, 1985)[3] and non-transferable ownership (Lovelock & Gummesson, 2004)), and the hospital's mission, "… to restore its patients to health" and thus solving a problem of the patient, is a service.

[3] Lovelock & Gummesson (2004) comment the widely use of this paper by service management scientists by providing examples of services which do not contain these characteristics and products which do. They therefore state that the separation of goods and services may not be so evident and perhaps should be removed, changed or improved. To improve the separation they reintroduce a fifth characteristic: Non-transferable ownership.

2.1.2 Does service innovation exist?

There is a discussion in literature on the existence of service innovation. Service innovation is defined by Toivonen & Tuominen (2009) as "… a new service or such a renewal of an existing service which is put into practice and which provides benefit to the organization that has developed it; the benefit usually derives from the added value that the renewal provides to the customers. In addition, to be an innovation the renewal must be new not only to its developer, but in a broader context, and it must involve some element that can be repeated in new situation, i.e. it must show some generalizable feature(s). A service innovation is the process through which the renewals described are achieved." (p. 14).

In the included addition, the repeatability of a service is highlighted. This is however in conflict with the service characteristic 'heterogeneity'. As every situation is different, services cannot be repeated. In theory, service innovation therefore cannot exist (Sundbo, 1997).

However, an important distinction must be made between incremental improvement to the existing service or a radically new service. A radically new service is something that can be repeated in many other occasions, although some minor adjustments are necessary to fit the specific situation. Therefore service innovation does exist.

2.1.3 Service innovation process

The service innovation literature is dominated by books and papers describing practices and guidelines for New Service Development (NSD), and the similarities to and differences between New Service Development and New Product Development (NPD). Much literature is about the NSD process.

In figure 1 the two variants of the NSD process model by Alam & Perry (2002) are presented. Alam & Perry (2002) find that the process is mostly *linear* (left figure), but that some activities, such as 'business analysis' and 'formation of a cross-functional team', are sometimes executed *parallel* (right figure), especially by smaller organizations to speed-up the process.

In the hospitals not only new services are developed, but services are being improved as well to solve problems. A typical business problem-solving approach is presented in table 1.

#	Activity
1	Problem identification
2	Create a problem-solving approach
3	Problem analysis
4	Generate solutions
5	Decision-making
6	Implementation
7	Evaluation/feedback

Table 1: General business problem-solving approach (Geersink & Heerkens, 1994)

If the models of the NSD process (e.g. Alam & Perry, 2002; De Jong et al, 2003; Van der Aa, 2000) are compared with general business problem-solving approaches to find the similarities and differences

between development of new services and improvement of existing services, the major similarities are the existence of an initiation activity (strategic planning and problem identification) and idea generation, development and implementation activities.

In general business problem-solving approaches however the project is evaluated/reflected upon after a number of months or years. This activity is missing in these NSD process models. The absence of this activity can be explained by development in a service being a constant process as new knowledge is acquired in the process and used to provide a better service to the next customer. *Reflection and evaluation* is therefore embedded in service provision itself.

A synthesis of the NSD process model activities and the general business problem-solving *activities* can be found in table 2. The goal of this "synthesized service innovation process model" is to explain the process of both new service development and service improvement.

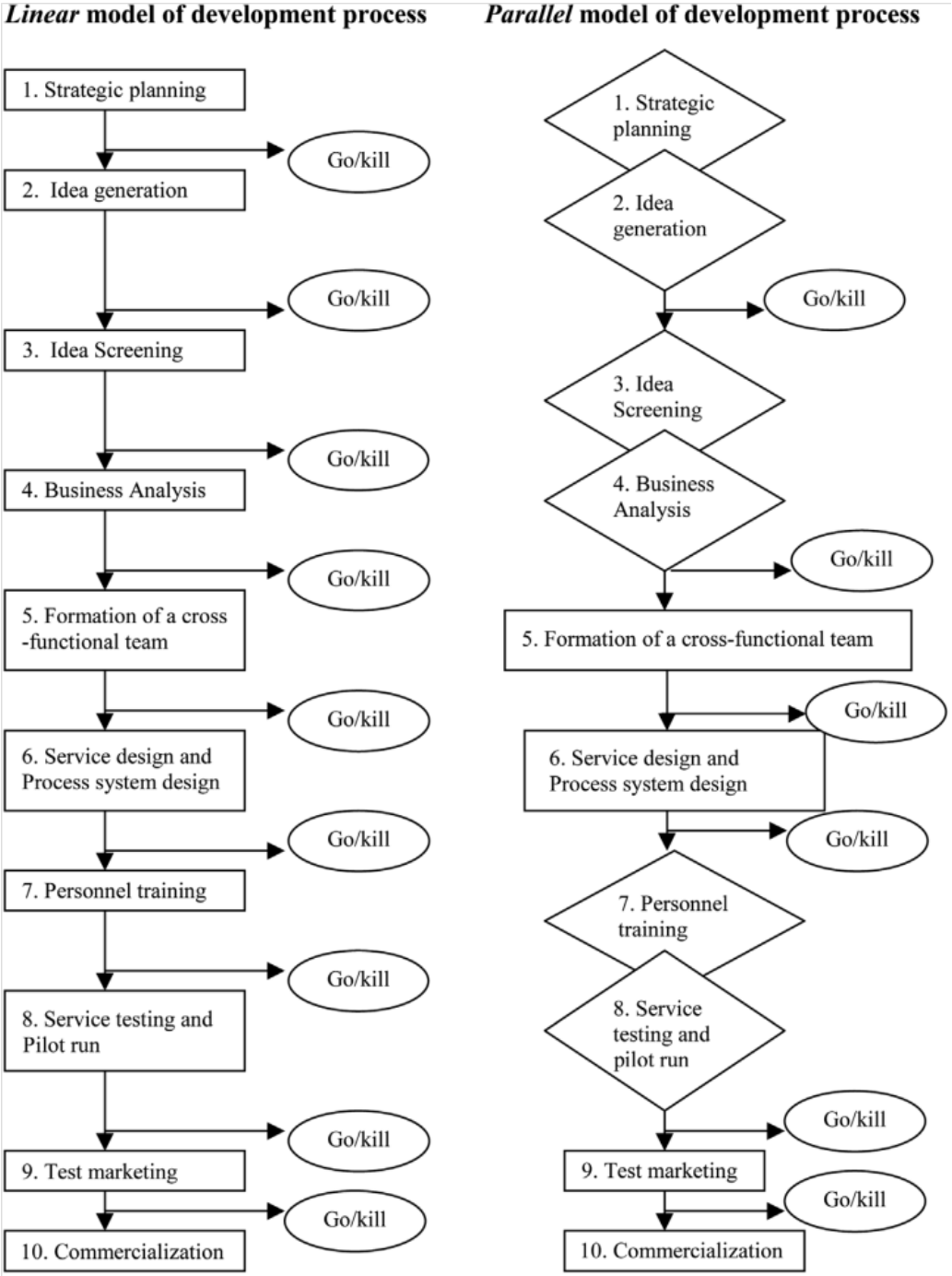
#	Activity
1	Initiation
2	Formation of cross-functional team
3	Problem analysis
4	Idea generation
5	Idea testing
6	Decision-making
7	Development
8	Training of personnel
9	Implementation
10	Evaluation/feedback

Table 2: Synthesized service innovation process model

Alam & Perry (2002) and Kuusisto & Riepula (2008) find that *speed* of the service innovation process is very important for service organizations, because services can be imitated very easily as they often require no major investments in new systems or technology.

Moreover, there are discussions on the nature of the service innovation process. And which approaches are best or under what conditions is not clear (Johne, 1993). The fact that some authors do not mention all the activities and the separation between the phases in the NSD process in detail, shows that the process is *iterative*, and that activities may overlap.

A second discussion is about the *level of formalization* of the NSD process. Authors such as Edvardsson et al (1995) and De Brentani (1989) found evidence that a strictly planned and formulated process is positively related to the speed and performance of the innovation process. Others, such as De Jong et al (2003) and Crevani et al (2011), find that the absence of rules is positively related to innovation success, because it creates the possibility to iterate and removes the pressure of focusing on the speed and costs of the innovation process.



Key: *Rectangle box*: sequential stages; *diamond box*: overlapping/parallel stages

Figure 1: NSD process models (Alam & Perry, 2002)

2.2 Customer involvement in service innovation

Cooper & Edgett (1996) state that service innovation often fails because the innovated service does not meet the needs and situation of the customer. By involving the customer in the service innovation process, this problem might be overcome and the innovation process may be more efficient for several reasons.

Paragraph 2.2.1 will present the advantages and disadvantages of customer involvement in service innovation. Paragraph 2.2.2 shows the considerations for organizations that want to involve customers in service innovation.

2.2.1 Advantages and disadvantages of customer involvement

First, customer information provides clues about future needs and wishes of customers, in that way leading the development process into the right direction and so reducing time and costs (Rothwell, 1994). These clues also reduce the uncertainty during the development process and in this way stimulate cooperation and motivate employees (Gales & Mancour-Cole, 1995). Craig & Hart (1992) find that organizations are constantly looking to reduce this uncertainty. Third, Customer problems and ideas can inspire the innovation process with new and original ideas (Magnussen, 2003). And fourth, a customer problem can trigger the start of the development process, by working as a catalyst (Kuusisto & Riepula, 2008).

Magnussen (2003) states that two major disadvantages of customer involvement in the service innovation process, next to the costs of involvement, are that customers often present ideas which are original and valuable, but which are not producible, and that for customers the concept of service is not always clear. However, Magnussen (2003) also states that these two problems can be easily overcome. Producibility can often be reached by using internal professionals to brainstorm further on the customers' ideas. The second problem makes clear that services cannot be decoupled from the infrastructure of the user, which is used to provide the service. A mobile phone network service for a user for example, is coupled to the device characteristics. Users usually cannot tell the difference between what might be improved in the network or in the device. A service provider has to be aware that the service is always delivered through the infrastructure of the user. In fact, the organization can use this to improve the service by cooperation with the suppliers of the user's infrastructure.

2.2.2 Considerations for organizations

Organizations also need to consider *which* customers they want to involve, *how* and *how much*. Von Hippel (1988) recommends that organizations should look for revolutionary, expert users that have ideas for improvement of the existing product or service. But these so-called 'lead user' needs and wishes do not represent those of the entire population (Magnussen, 2003). Unfortunately, the largest proportion of users normally does not have the required technological and commercial knowledge to create potentially profitable and producible ideas (Christensen & Bower, 1996). But as technological and commercial knowledge most of the times is available in the organization, using technical employees to further brainstorm on their less profitable and producible customer ideas can be a very fruitful way to generate successful ideas (Magnussen, 2003).

Scupola et al (2009) and Von Koskull (2009) have researched the 'how' of customer involvement by identifying the roles that the customer plays in the service innovation process. By using the three roles of Nambisan (2002) (user, co-creator and resource) they find that the role differs per activity. In the start-up phases the customer is asked to provide feedback on the existing service as a *user*. After that, the customer is used as a *resource* of valuable ideas. In the development phase the customer can act as a *co-creator* in helping to develop the specific details of the service or products, which are tested with the customer, again, as a *user*. Kuusisto & Riepula (2008) add a fourth role of the customer as a *catalyst* for starting the process and to keep it going, because support from customers for the new product or service helps to get support from the necessary levels in the organization for the innovation project.

However, Sundbo (1997) found that the involvement of customers in innovation projects is weak and insignificant and Kuusisto & Riepula (2008) state that the intensity of customer involvement in service innovation projects is generally very low. Involving the customer simply takes too much time, effort and money to cope with the desired speed of the service innovation process. Organizations therefore rely on their own creativity and speculation about customers' needs and wishes. But in the end an organization always has to know if there are customers out there who are willing to buy the product or pay money to receive the service. Customers therefore have to be involved in some way. How can the involvement of customers become so effective and cost and time efficient that it will be beneficial for the financial success of the project?

2.3 Customer information

By looking at the advantages of customer involvement one can see that it is not the customers that create the advantages, but the information about the customers' needs, wishes and situations. Information provides the clues and so reduces uncertainty about costs, duration and outcomes of the development process. And it is information about problems and ideas that inspires the process and triggers the start.

The first paragraph shows that statements about customer information should be separated in statements about the source and the content of customer information. The second paragraph will show previous research findings on the use of customer information.

2.3.1 Source and content

Von Koskull (2009) states that a major distinction has to be made between information from customers, the *source* of information, and information about customers and the *content* of information. It is the content of information about customers that creates the benefits of customer involvement. The information about customers can be gathered as information from customers, but can also be gathered as information from other actors in the market, such as competitors.

2.3.2 Use

In her research Von Koskull (2009) found that acquisition and *use* of information about customers are often separated. She even found that much acquired information is not used at all. She therefore concluded that information acquisition should be better aligned with information use. According to Morgan et al (2005) and Rollins et al (2011) as well, customer information use in organizations is

limited. From the three types of customer information use (Knowledge-enhancing, symbolic and action-oriented), knowledge-enhancing and symbolic use are uncommon. Customer information is used primarily action-oriented; for decision-making purposes.

In conclusion, the expectation is that knowing what information to use in the decisions in the service innovation process leads to the benefits of customer involvement, in that way improving service innovation and creating higher customer satisfaction.

2.4 Service types

As customer involvement differs per service innovation project (Gruner & Homburg, 2000), activity (Kuusisto & Riepula, 2008) and service type (Howells, 2006; Sundbo & Gallouj, 2000), the service innovation process itself might also be dependent on the type of service being improved. The information about customers necessary in the decisions in the service innovation process may also be dependent on the type of service being improved. Already, service management science has discovered that the type of service is related to the corresponding type of service production and delivery processes and the nature of the service encounters (Collier & Meyer, 1998).

Paragraph 2.4.1 shows the service positioning matrix by Collier & Meyer (1998). This matrix is a commonly used classification of services in several types. The newly developed marketing paradigm Service-Dominant Logic (Vargo & Lusch, 2004), presented in paragraph 2.4.2, can be developed into a new service classification instrument which may replace the existing typology.

2.4.1 Service positioning matrix

Several authors such as Fitzsimmons and Fitzsimmons (1994), Kellogg and Nie (1995), Lovelock (1991) and Schmenner (1990) have tried to create classification schemes or service positioning matrices for service types. Collier & Meyer (1998) compare the service positioning matrices of Silvestro et al. (1992), Tinnila and Vepsalainen (1995), Kellogg and Nie (1995) and their own matrix and conclude that their matrix is best. The matrix is shown in figure 2. This matrix contains two dimensions. The horizontal dimension represents the extent to which the service provides in the needs and wishes of individual customers (left = high, right = low/none). The vertical dimension represents the amount of freedom of customers in choosing the service offering and way of delivery (top = high, bottom = low/none).

All services can be placed along the top-left to bottom-right diagonal. The top left corner shows *customer-routed services* in which the customer decides what service is received and how, the middle shows *co-routed services* (between the provider- and customer-routed services) and the bottom-right corner shows *provider-routed services*.

		Extent to which the service provides in the needs and wishes of individual customers	
		High	**Low/none**
Amount of freedom of customers in choosing the service offering and way of delivery	**High**	Customer-routed	
		Co-routed	
	Low/none		Provider-routed

Figure 2: Service typology positioning matrix by Collier & Meyer (1998)

2.4.2 Service-Dominant Logic

However, the service positioning matrix is based on the assumption of the existence of the separation between goods and services mentioned in paragraph 2.1.1. Lovelock & Gummesson (2004) suggest to remove this separation. Furthermore, Vargo & Lusch (2004) state that the existing marketing paradigm is based on the fundament of exchange of goods and money. With the development of services and its growing impact on national wealth this fundament becomes obsolete. They suggest to expand the existing marketing paradigm to include the characteristics of services and their exchange. They call this new paradigm: *Service-Dominant Logic* (SDL).

This new paradigm differs from the old *Goods-Dominant Logic* paradigm (GDL). According to SDL, in every provider-customer relationship specific knowledge and skills are exchanged. These knowledge and skills are necessary to solve a problem of the customer (needs, wishes and situation) and are therefore a service (Vargo & Lusch, 2004). The customer does not have these resources or does not have the time to solve the problem. Goods are in this perspective the carriers of the skills and knowledge. Moreover, customers are not passive receivers of value for money, that can be acted upon as other resources with strategic instruments, such as segmentation, penetration, etc., but are an essential part of the process to create value from skills and knowledge. In this perspective customers can be taught how to use the skills and knowledge provided to optimize the value. The relationship between the service provider and the customer has to be strong to share information about the problem of the customer and the use of the skills and knowledge.

Vargo and Lusch (2004) illustrate SDL with the example of a fisherman and a farmer. Furthermore, they show that GDL originated from SDL.

> *Specialization is meant to improve productivity. The fisherman can focus on catching fish, while the farmer focuses on farming. Both can optimally develop their skills and knowledge. They trade fish for wheat. The fish and the wheat 'carry' the specific knowledge and skills,*

because they can be produced only if that knowledge and skills are present at the producer. Instead of exchanging goods or products one can state that knowledge and skills are exchanged. After a while this direct exchange disappears with the introduction of money and tradesmen, and the fishermen and farmers develop their knowledge and skills to such a level that they can also provide their goods to other individuals and communities. They engage in competition with fishermen and farmers of those communities. The focus is now slowly shifting to producing better, cheaper goods and faster delivery. The starting point changes from helping each other with the specific knowledge and skills to producing goods and selling them for money wherever possible. The logic is now goods-dominant instead of service-dominant.

Nowadays there are so many providers whose goods and services are so easily comparable for customers that customers can look for the provider that delivers the good or service with the highest value, i.e. the best solution to the problem of the customer. Providers have to engage in a relationship with customers to share information and services. They have determine the specific problem of the customer. All customers are unique. This in contrast to GDL, in which the provider determines the good or service. Standardization of the production and delivery process is the result of continuous improvement towards higher product quality and efficiency. In GDL, all customers are the same.

GDL and SDL are the opposite ends of a scale. Organizations will be somewhere on this scale and they will continuously shift on this scale, sometimes in the direction of GDL, other times towards SDL. Logically, in innovation towards GDL the good or service or the process is being improved to make it better, cheaper or faster delivered, and thus higher value. In innovation towards SDL the range of specific problems of customers that can be dealt with is being expanded by developing more special knowledge and skills. The service-centered view (Vargo & Lusch, 2004) also states that the development of the relationship and communication with customers is a point of improvement to create higher value.

2.5 Conclusions and model

The literature study had the purpose to find in the service innovation literature the best practices for service innovation that creates higher customer satisfaction. The assumption in this research is that optimal innovation leads to optimal results. Several best practices for innovation could be identified, such as that the speed of the service innovation process is very important, that customers have to be involved and that customer information has to be gathered and used.

However, there is discussion about the practices as well. For example, it is not clear whether the service innovation process should be linear or parallel, whether it should contain an explicit reflection or evaluation activity or not, and which customers should be involved.

These discussions might be caused by the differences between the service types that are being developed and improved. It might not be the case that one practice or one combination of practices always leads to the highest service innovation success. This relation can be dependent on the type of service that is being innovated. The moderating variable “service type” has the power to moderate

the relation or even flip the outcome of service innovation from success to failure. The hypothesis therefore is that the practices of service innovation are related to the type of service.

In figure 3 the "service innovation success factors model" is presented. The best practices and discussions about practices are combined in three success factors: Service innovation process, customer involvement and customer information. These success factors have a relation with service innovation success. These relations however may be influenced by a moderating variable: Service type.

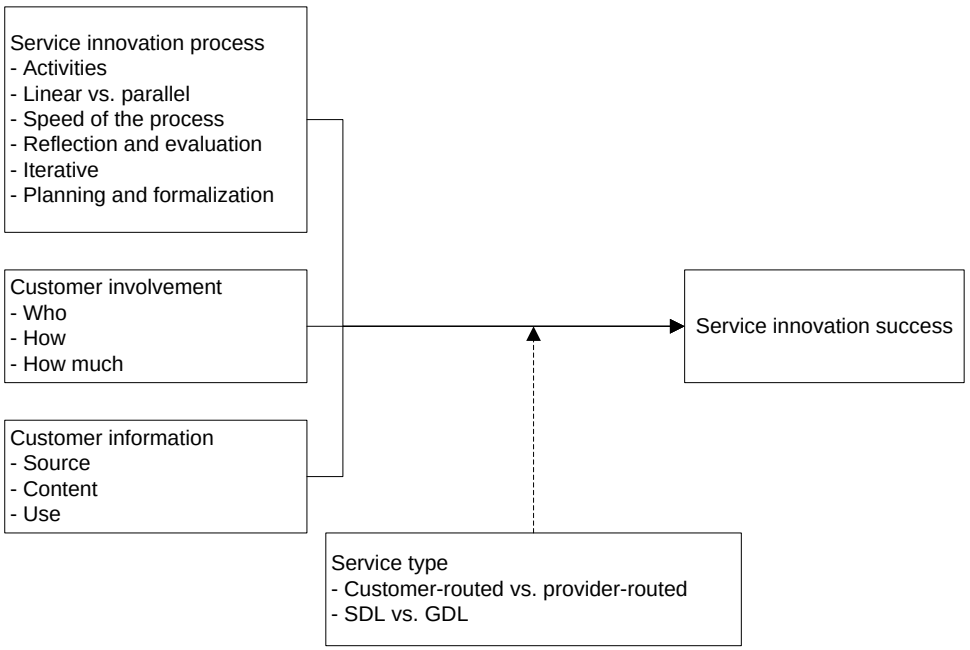


Figure 3: Service innovation success factors model

The practices and variables in this model will be operationalized and adapted to non-medical innovation through case study research to find support for the best practices from the service innovation literature and also to provide clearance about the best practices that are under discussion. Furthermore, indications are sought about the influence of the service type. Chapter 3 will present the case study methodology. In chapter 4 the results of the case study research are presented and discussed in chapter 5.

3. Methodology

This chapter presents the research methodology as applied in the case study research. Section 3.1 presents the operationalization of the practices and variables. Guidelines and procedures from the theory for case study research as presented by Eisenhardt (1989) and Yin (2009) were used. In section 3.2 an overview of case study research is presented. Section 3.3 presents the case selection methods. The instruments for data collection are presented in section 3.4. Section 3.5 shows the data analysis activities.

3.1 Operationalization

The practices and variables in the "service innovation success factors model" presented in figure 3 are operationalized to find support of the practices and relations. The first paragraph will present the operationalization of the service innovation process variables. In the second paragraph the variables of customer involvement are operationalized. The same is done for the variables of customer information and service types in respectively the third and fourth paragraphs.

3.1.1 Service innovation process

3.1.1.1 Activities

The New Service Development process models and problem solving approaches are to some extend similar, but also show some differences. In paragraph 2.1.3 a synthesis of both models is presented which is further discussed below. The cases study notes and documents are being used to find indications for the correctness of this new model, both the presence and the sequence of the activities. The activities in the model are operationalized as follows:

1. Initiation

In the initiation activity an identified problem or a strategic decision creates awareness and impetus in the organization that an innovation project has to be started. Management decides to free the financial and human resources necessary for the project.

2. Formation of cross-functional team

A team is formed to analyze the problem and/or to generate ideas. The team members are from different departments and backgrounds and they have different knowledge and skills.

3. Problem analysis and criteria determination

In this activity, the problem from activity 1 is analyzed or the unknown market is explored to identify the variables and relations. This leads to a core cause of the problem for which a solution has to be found or to a specific need or set of needs that has to be fulfilled. The findings are also used to determine the criteria for judging the idea or solution.

4. Idea generation

Ideas are generated that must provide a solution to the problem or reach the goals from the strategic decision.

5. Idea testing

The ideas generated in the previous stage are screened and the most promising ideas are tested on each of the criteria.

6. Decision-making

The decision is made to restart the idea generation activity or to continue with one idea or a combination of ideas.

7. Development

The ideas are further developed into actual designs, production plans and/or procedures.

8. Training of personnel

Personnel are trained on how to cope with these new products or services, plans and/or procedures. They are made aware of the necessity of the change. This awareness 'unfreezes' their routines in order to reduce resistance to change.

9. Implementation

By starting the new procedure the idea/solution is implemented in the organization.

10. Evaluation/feedback

After a certain time period feedback is received from the new product/service/procedure/etc. and it is evaluated. If further development is necessary, the project returns to step 7.

3.1.1.2 Speed of the process

According to Alam & Perry (2002) and Kuusisto & Riepula (2008) speed of the innovation process is very important in service innovation as the new services are fairly easy to imitate. An indication for this necessity of speed is the constant pressure from the Management Team to speed up the innovation process.

3.1.1.3 Linear vs. parallel

In the NSD model of Alam & Perry (2002) there were two variants: Linear and parallel. In the *linear* variant all activities of the NSD process are sequential and closed before the next activity is started.

In the *parallel* variant several activities are done at the same time, such as the generation of ideas and strategic planning. The parallel variant is one of the solutions mentioned in literature to cope with the demand for speed of the process. But it is not clear which of these variants is best.

3.1.1.4 Existence of an explicit reflection and evaluation activity

In problem-solving approaches the reflection and evaluation activity is clearly present, while in New Service Development this activity is often missing in the NSD process models. In paragraph 2.1.3 is already stated that is might be caused by the nature of services, where reflection is naturally embedded in service provision. Reflection and evaluation therefore might not be explicitly mentioned. The question therefore is, if an explicit reflection and evaluation activity should be part of the process, or that this activity is already implicitly present and needs no further attention.

3.1.1.5 Iterative

It is not clear from literature whether a service innovation process should be iterative or that no backward steps are allowed for an optimal process. In an iterative process, the team might decide to return to the previous step because the results from that step were not useful.

In a non-iterative process, activities are ended before continuing to the next step to never be executed again. This can be very useful in projects where there is a fixed amount of resources (time, people, money, space, etc.) available for each separate activity.

3.1.1.6 Level of planning and formalization

In literature there is discussion about the level of formalization and planning of the service innovation process. It is not clear what level is best. In processes where the level of formalization and planning is high there are strict tasks and deadlines for each of the activities. This speeds up the innovation process as there is much pressure from responsible actors in the organization. Furthermore, it forces the team to develop the ideas into specific designs and plans.

The strict tasks and deadlines are absent in projects with low level of formalization and planning. This might lead to success as this absence reduces pressure and so creates the space for flexibility and creativity, so leading to better ideas and solutions.

3.1.2 Customer involvement

3.1.2.1 Who

On the subject of customer involvement in service innovation processes, organizations have to consider who to involve. Von Hippel (1988) recommends to involve *'lead users'* (users that are ahead of the target market and personally adjust the service or product to their own needs). Magnussen (2003) comments that these users do not represent the needs, wishes and situation of the entire population of users. Christensen & Bower (1996) recommend to involve a *representative sample* of the user population, but according to Magnussen (2003) this must be in combination with commercial and technological specialist of the organization.

3.1.2.2 How

According to Nambisan (2002) and Kuusisto & Riepula (2008) organizations can use customers for four different purposes. By involving customers as *users*, they provide feedback on the existing and newly developed service or product. This perspective can also be used to identify the criteria customers use to judge the product or service. If customers are used as *resources*, an organization uses the creativity and user knowledge of customers to generate ideas. Third, by involving customers as *co-creators*, customers help the specialists of the organization to develop the idea by providing suggestions and continuous feedback during the development process. And fourth, if customers are used as *catalysts*, information about needs and wishes is not used in the actual service innovation process, but in the initiation activity or in the personnel training activity to create support for the project and the new service.

3.1.2.3 How much

Indications for a high level of customer involvement are qualitative interviews with one or small groups of customers. Indications for a low level of customer involvement are the absence of implicit or explicit data gathering, instead organizations use speculation about the needs, wishes and situations of customers. Large quantitative surveys indicate some level of customer involvement.

3.1.3 Customer information

3.1.3.1 Source

Information about customers can come from several sources, such as the customers themselves, competitors, suppliers, government and other actors.

3.1.3.2 Content

The content of information about customers' needs, wishes and situations can be primarily about the similarities or differences between customers. If information about customers is primarily about the similarities, then the gathered data is used to create general opinions, problems, criteria, etc. If primarily information about the differences between customers is used, then the opinion, problems, etc. of each individual person is used to determine the full set of opinions and problems.

3.1.3.3 Use

According to Morgan et al (2005) and Rollins et al (2011), customer information use in organizations is limited. From the three types of customer information use (Knowledge-enhancing, symbolic and action-oriented), knowledge-enhancing and symbolic use are uncommon. Customer information is used primarily action-oriented; for decision-making purposes. Indications for action-oriented use are that decisions are directly based on the new information. Whereas indications for knowledge-enhancing use are that the decision is already made, but that extra information is gathered to support the decision or to provide the information necessary for future decisions. In symbolic use, the information is used for decisions at all, but simply to justify to other actors the decisions that already have been made

3.1.4 Service types

To check the validity of the service classification by the interviewees the interview and document data is used to reclassify the services. If the service classification is valid, the result will be the same classification of the services in the types.

3.1.4.1 Customer-routed vs. co-routed vs. provider-routed

Collier & Meyer (1998) present their service positioning matrix to make a distinction between three types of services. *Customer-routed* services are services in which the service offering and the delivery channel are chosen by the customer. Indications for such a service are that the customers are provided a range of service offerings and delivery channels and that they are free to choose their own service. In *co-routed* services the customer and the provider make the choice together. A limited set of offerings and delivery channels is available and the customer is consulted by the provider to make the choice for one of the offerings and the channels. *Provider-routed* services are dominated by the providers. Only one service offering and delivery channel are available. The provider decides which route the customer has to take to receive the service they want/need.

3.1.4.2 SDL vs. GDL

In a SDL service each customer has his/her own individual needs, wishes and situation. The special skills and knowledge of the service provider are used to fulfill the needs and wishes for each specific situation. All customers are regarded as being different. In typical GDL services, the skills and knowledge of the provider are used to create the same product or service for all customers. All customers are regarded as being the same.

3.2 Overview of case study research

A combination of the recommendations from Eisenhardt (1989) and Yin (2009) for case study research was used to create the research strategy. In case study research, cases are selected on the basis of theoretical sampling: Cases that may provide new theoretical insights are selected (Eisenhardt, 1989). But, in contrast to her Grounded Theory (Corbin & Strauss, 1990) variant of case study research, this research has used an operationalization of practices and variables to find support and indications, as recommended in Yin (2009). The reason is that in this way the practices and relations model can be adapted for non-medical innovation.

3.3 Sampling and case selection

For sampling and case selection Eisenhardt (1989) advises to select multiple cases and to compare them with each other to assure the quality of the research by studying the entire array of situations. She advises to select these cases from each of the categories of an existing taxonomy or typology and to select multiple cases per category for within-category comparison. The typology of Collier & Meyer (1998) (customer-routed vs. co-routed vs. provider-routed) is used to make a distinction between several service types and to assure that entire array of services is included in the research. This in total leads to six cases in this research.

Theoretical sampling was aimed to find non-medical innovation projects in Dutch hospitals that have successfully created higher patient satisfaction. To increase the chance of finding these projects, hospitals were selected on the basis of improved hospital's patient satisfaction scores in the rankings of 2010 and 2011 by a Dutch newspaper: Algemeen Dagblad. These rankings were chosen as they were most up-to-date and easily available. The receptions of the ten hospitals which improved their patient satisfaction scores the most in this period were approached by telephone. It was assumed that in these hospitals there had been successful non-medical innovation projects that created higher patient satisfaction.

It was asked who in the hospital is responsible for creating higher patient satisfaction. Those persons were asked if they were willing to cooperate and, if so, interview appointments were planned. Information about the research and the upcoming interviews was sent by e-mail. (Appendix A2).

In the telephone interviews they were asked to mention several patient satisfaction improvement projects. The respondents were also asked to put the project in the position in the service typology positioning matrix by Collier & Meyer (1998) (figure 4) to determine the service type. The coordinates of this position are used to calculate a value for being customer-routed, co-routed or provider-routed, according to the following equations:

Customer-routed: $= x + y$
Co-routed: $= |5 - x| + |5 - y|$
Provider-routed: $= (10 - x) + (10 - y)$

The values represent the distance between the project and the optimal value of the type. Typical customer-routed services have the coordinates (0,0) = top left of matrix = values are respectively [0, 10, 20), co-routed services (5,5) = middle = values are respectively [10, 0, 10] and provider-routed services (10,10) = bottom right = values are respectively [20, 10, 0].

Projects were ranked per category and the first two projects per category were selected as the cases in this research. Respondents were called back to ask for the name, telephone number and email address of the project leader of these selected projects.

			Extent to which the service provides in the needs and wishes of individual customers										
			High										**Low/none**
			0	1	2	3	4	5	6	7	8	9	10
Amount of freedom of customers in choosing the service offering and way of delivery	**High**	0	Customer-routed										
		1											
		2											
		3											
		4											
		5					Co-routed						
		6											
		7											
		8											
		9											
	Low/none	10											Provider-routed

Figure 4: Service typology positioning matrix by Collier & Meyer (1998) with coordinates

3.4 Data collection

Data was collected in semi-structured telephone interviews with the project leaders and document analysis. Interviews were planned by calling the project leaders and asking them if they were willing to cooperate and if an appointment for a telephone interview could be made. In the interviews questions were asked about the problem, initiation, process, solution and about what information about patients was used and how it was acquired. Data was stored by taking notes and processing them afterwards into information in digital text documents. The duration of the interviews was approximately 30 minutes.

Documents were used in the within-case analyses to triangulate the statements of the project leaders. The documents were acquired by asking the project leaders if it was possible to receive copies from the questionnaires, notes and reports of the project. Those were sent by these project leaders by e-mail or by mail.

Also, in the interviews a question was asked to determine the underlying marketing logic of the service. The respondents had to assign a value between 0 and 10 on whether they agreed, from the perspective of the service, with the statement: "*Every patient is the same*". If the value would be 0, from the perspective of the service all patients are different in their needs, wishes and situation. The logic is therefore service-dominant (Vargo & Lusch, 2004). Vice versa, a value 10 would mean that all patients are the same and that they are offered the same service in the same way. Then, the logic is goods-dominant.

Ik wilde nauwkeurig genoeg het verschil zien
10 is een gemakkelijk getal vanwege het Nederlandse beoordelingssysteem

This 11-point scale was used for two reasons. Firstly, certain accuracy in the differences between the several projects was desired. This accuracy could not be reached with, for example, a 5-point scale. Secondly, in the Dutch education system a 0 to 10 measurement scale is commonly used, 0 indicating a bad or no score, 10 indicating an excellent or perfect score. It was expected that this scale would therefore be understandable for the interviewees and furthermore obtain the desired accuracy of the measurement.

3.5 Data analysis

For each case, the data of the interviews was split into the subjects asked in the interview (problem, initiation, process, solution and about what information about patients was used and how it was acquired). The data on each of these subjects was checked by data from the documents of that case.

Microsoft Excel was then used to create a table by which all cases could be compared on the operationalized variables, presented in section 3.1, within categories and between categories. As is shown in chapter 4, other variables were found as well.

4. Findings

In this fourth chapter the case study research findings are shown. The chapter will start by presenting the sampling and case selection results in section 4.1. In section 4.2 the case descriptions and within-case analyses are presented. The cross-case analysis, presented in section 4.3, has led to some interesting differences and similarities between cases. Patterns in the findings are presented in section 4.4, showing indications for the relations in the model.

4.1 Sampling and case selection

Of the ten hospitals approached, five were willing to cooperate in the research. In the other five hospitals the person responsible for patient satisfaction was not available or not willing or too busy to cooperate. However, one of these hospitals did sent the final report of a large internal patient satisfaction research that was conducted in the eight academic hospitals in the Netherlands in the period 2003-2009 (NFU, 2010).

The five hospitals in total provided 22 projects. Some typical customer-routed or provided-routed projects could be identified. The project distribution is presented in figure 5. All projects are placed somewhere along the top-left to bottom-right diagonal, which is similar to the results of Collier & Meyer (1998). The assigned values ranged from (2,3) to (9,10). Most projects however were located in the center of the matrix, signaling that there was a balance between customization and standardization.

			Extent to which the service provides in the needs and wishes of individual customers										
			High										**Low/none**
			0	1	2	3	4	5	6	7	8	9	10
Amount of freedom of customers in choosing the service offering and way of delivery	**High**	0											
		1											
		2											
		3			x	***1***			x				
		4			xxx				x		x		
		5				x							
		6						x			x		
		7					x	x					
		8				***5***						X	***3***
		9								***4***	***2***		
	Low/none	10								x	X	x	

Figure 5: Project distribution in service typology matrix

Six projects that clearly had the purpose to create higher patient satisfaction were initially selected. But, when the project leader of one of these projects was contacted, he stated that the project did not have the goal to create higher patient satisfaction but to improve a healthcare procedure

instead. No information about patients was used in that project. Of another project the project leader could not be reached at the moment of the telephone interview appointment and on later times. These two projects were replaced by the next two projects in their category. Of one of these projects the project leader could not be reached as well. There was decided not to select another case because not enough time for research was left. In total five patient satisfaction improvement projects were thus studied (see numbers in figure 3).

A final remark is that of one of the cases the project leader could not be reached to ask for further information.[4] Enough information was available through the final report of the internal patient satisfaction research in the academic hospitals to cope with this lack of information. This project was also applied in other hospitals, which was explicitly mentioned in the improvement projects of three of the eight academic hospitals. In that document also information about the use of information about patients was presented.

The five projects were:

1. *Calling patients:* The starting of a procedure in which the patients would be called by the department 24 hours after they had been discharged from the hospital in which they were treated. The goal of this new system is to answer questions from these patients about the upcoming recovery process and outcomes. This may reduce pressure on general practitioners (who answered these questions in the past) and create higher patient satisfaction as the patients do not have to take the effort to contact the general practitioners themselves.
   (Position is (3,3), values are respectively [6, 4 and 14] = Customer-routed)

2. *Visiting hours:* The opening up of visiting hours. Visitors were now able to visit their loved ones at any time, no matter at which department they would be treated. This will create a positive climate for care and cure. This shortens the recovery process, increases the chances of full recovery and creates higher patient satisfaction.
   (Position = (8,9), values are respectively [17, 7 and 3] = Provider-routed)

3. *New guidelines:* The creating of new guidelines on how to approach and treat patients by all personnel in the hospital, based on ideas of hospitality, respect and friendliness. As in project 2, this also creates a positive climate for care and cure, which shortens the recovery process, increases the chances of full recovery and creates higher patient satisfaction.
   (Position = (10,8), values are respectively [18, 8 and 2] = Provider-routed)

4. *Bread-buffet-cart:* The creation of a bread-buffet-cart to replace the old way of serving breakfast and lunch. The goals were to create higher patient satisfaction about the hospital's food and serving, to improve patients' diet and to reduce the amount of waste.
   (Position = (7,9), values are respectively [16, 6 and 4] = Co-routed)

[4] At the moment of the first call to make an appointment the project leader already started to talk about the project. The interview however was not yet prepared and so some subjects were thus not asked. Another telephone call was therefore needed. At that point the project leader could not be reached again.

5. *Attention for teenagers:* The increase of attention on the differences between teenagers and children in the children's care center. New information channels, treatment rooms, relaxation places, etc. were created for teenagers to cope with their specific needs, so creating higher patient satisfaction.
   (Position = (3,8), values are respectively [11, 5 and 9] = Co-routed)

4.2 Case descriptions and within-case analysis findings

The case descriptions of the five projects are presented in this paragraph. Information is presented in the order of the subjects of the interview questions: Problem, initiation, process, solution and about what information about patients was used and how it was acquired. After each case description the results of the within-case analysis are presented.

Project 1: Calling patients

Problem: Patients and their general practitioners complained that much uncertainty and unanswered questions about their sickness or injury and the recovery process remained after discharge from the hospital. Patients were not satisfied about the old situation in which they had to contact the general practitioners themselves if they had questions. The general practitioners in their turn complained that they did not have the time and knowledge to answer these questions.

Initiation: Implicit information about patient dissatisfaction was the reason to start with this project. The project was initiated by the Management Team.

Process: After the initiation of the project, the project leader (coordinator communication between general practitioners and hospitals) was made responsible for the project. He arranged some brainstorm sessions with other specialists to find a solution. The solution was copied from hospitals where it had already proved to be a success. At that time, the solution was a hot topic at hospital management conferences and meetings between specialists. It only needed some integration in the hospital's procedures.

Solution: The solution is a procedure that treats all patients the same by calling the discharged patients 24 hours after discharge to answer these questions. The specialists are calling themselves as they have the knowledge. The procedure has much freedom to provide support in special situations. Patients are invited to call the department at any time they want if they have more questions.

What information: The solution makes use of both the similarities and differences between patients. The solution is the same for all patients to some extent, but it has the flexibility on some aspects to cope with the individual needs and wishes.

Source of information: Information about patients' needs and wishes was based on experience and speculation from the project members. Implicit information about patient dissatisfaction about the old situation was the reason to start with this project. No explicit research was conducted. Some information was received by the hospital through conversations with the general practitioners. Quantitative research after a few months showed that patient satisfaction about the department had

increased after the start of the project. This was supported by the implicit information gathered in the calls.

As said before, other hospitals, including at least three of the eight academic hospitals, use the same procedure. In those hospitals the project is a success as well. One hospital mentions that the service is enlarged with answers to frequently asked questions on the website of the department. It is not known if this has an effect on the success of the project. It is not clear if there are differences between the solution of the hospital in the case study and the solutions of the other hospitals in the actual design and the success of the solution.

Within-case analysis has not shown any discrepancy between the data collected through the telephone interview and the document of the Dutch Federation of University Medical Centers (NFU).

Project 2: Visiting hours

Problem: The hospital needed to change their visiting hours to receive the mark of working in accordance to the guidelines of the foundation of which the hospital is a member. The goal of the project was to create full openness and freedom for the family and friends of the patients to get them more involved in the care process.

Initiation: The reason for starting this project was a request from the foundation. The Management Team initiated the project.

Process: After the formation of cross-functional team, a request was sent to the departments to create an open visiting hours system at those departments. This was however rejected by the departments. The team therefore decided to implement an organizational wide pilot solution. This was evaluated after some months and adjustments were made from a fully open system towards a semi-open system.

Solution: The pilot solution was that the hospital would be open always for family and friends of the patients. It had to be implemented fairly quickly, but this met resistance from the medical specialists in the hospital. The Management Team however decided to continue with implementing the new service. After some months the service was evaluated with personnel, patients and visitors.

They all agreed that the service was a failure. It had led to some major incidents in the hospital with visitors who were disturbing medical procedures, quietness, hygiene, etc. The visiting hours were again changed and the present situation much resembles the original visiting hours, but more exceptions for special situations can be made in the new system. The foundation recognized the specific situation of this hospital, and because the foundation's concept was still used to a high extend, the hospital received the foundation's mark.

What information: Because there was not much time, no research on the needs, wishes and situation of the visitors could be done. In the evaluation, especially similarities between patients and employees were used. But it became also evident from this information that there had to be some level of flexibility in the system to cope with the differences.

Source of information: The evaluation was extensive with focus group interviews with patients, employees and visitors and qualitative research among patients and visitors.

Within-case analysis: There was no discrepancy between the data collected through the telephone interview and the documents.

Project 3: New guidelines on how to approach and treat people

Problem: Several internal developments, such as reorganization, financial crisis, change of board, etc., have let the attention drift away from the patients. The management team was confronted with this development by lower ranks in the rankings published by newspapers and websites in the beginning of 2010.

Initiation: Management Team

Process: A project team, including managers, specialists and nurses from different departments of the organization, was formed. This team first had the task to analyze the problem. They discovered that patients were dissatisfied with the way they were approached and treated by personnel in some departments. Research had also shown that patients wanted to be treated differently. Therefore personnel had to be taught how to cope with these differences through workshops and employees were inspired by the hospital-management guru Fred Lee[5]. General guidelines about how to approach and treat patients were created. Departments are free on how to translate these guidelines into the actual action. The project is continued with more education on how to approach and treat patients, the creation of key values of the organization and core competencies for personnel and the putting in place of new data collection instruments.

Solution: No standard approaching and treating rules, maximum flexibility.

What information: Research had shown that patients were dissatisfied with the way they were approached and treated by personnel in some departments. Research had also shown that patients wanted to be treated differently.

Source of information: Quantitative and qualitative patient satisfaction research. The general patient satisfaction research was cancelled and replaced by specific research at the individual departments through anonymous postcards. On the postcards patients can write complaints and suggestions and assign a value for the level of satisfaction. The results from this research however are not reported to the management team to provide an overview of all issues in the organization. This is going to be improved in the beginning of 2012.

Within-case analysis: All data from the interviews was supported by the data from the documents. There were no discrepancies.

[5] Fred Lee has written the book "If Disney Ran Your Hospital: 9 ½ Things You Would Do Differently" (2004) about hospitality and the approaching to and treatment of patients by all hospital personnel. The book is a bestseller among healthcare managers and following the Fred Lee philosophy a fashion.

Project 4: Bread-buffet-cart

Problem: Five years ago, in the subject of hospital food there was a fashion to follow the idea of "If you see food, you want eat". This philosophy would improve patients' diets. A second goal of the project was to reduce the amount of food that was being thrown away. Furthermore, patient satisfaction about hospital's food had to be increased.

Initiation: Diet specialist and management team

Process: After the formation of project team (diet specialist, head nursing department and facility manager) an extensive research was done to analyze the problem and develop a solution. This solution had to be integrated in standard working procedures. It was implemented. There are concurrent feedback moments and adjustments.

Solution: One of the ways to accomplish all three goals (improve diets, reduce waste and create higher patient satisfaction) was to serve the food on buffet-carts. This hospital has done extensive research by asking patients and personnel what the best option would be for this cart. Since January 2011, the bread-buffet-cart is fully implemented in the hospital. There were difficulties to start with the project, because a new way of working and other working hours were required and the organization and her personnel were not structured to do that it way. These things had to be changed before the service could be put in place. From the beginning every few months a research is done in which patients are asked to answer questions about the service and the menu. The new menu is being discussed with the diet expert.

This solution only applies to the bread meals (breakfast and lunch). The hot meal of the day is not served in this way as the kitchen is still not appropriately structured to work in the way required. The menu of the hot meal however is extended to fulfill the specific needs and wishes of more patients.

This new service has led to more freedom for the patients, but the service provided is still determined by the management. The project leader has scored the project with a 5.

What information: In the research it was important to find similarities between patients, but also to create a menu that would provide the right food to everyone. Therefore differences between the needs, wishes and situations of people were needed.

Source of information: In the development stage extensive qualitative research with personal interviews and focus group interviews with both patients and employees, led to an optimal design and procedures. Feedback data from patients is collected through quantitative research.

A final remark is that a recent internal patient satisfaction research has not shown significant improvement in patient satisfaction about the hospital's food.

Within-case analysis: For this project as well, the documents support the data provided by the project leader.

Project 5: Attention for teenagers

Problem: In June 2010 the project was started after parents and teenagers had shown their dissatisfaction about the attention for teenagers at the children's department. They complained that they were approached and treated by personnel as if they were small children and that the procedures and materials were not fitted for the specific needs, wishes and situations of teenagers. Furthermore, the teenagers said that they wanted to be treated as individuals.

Initiation: The management team of the children's department

Process: After the conversations a project team was formed by the children's department. This team included pediatric specialists, nurses and a facility manager. A large research among teenagers, parents, personnel and other stakeholders showed many improvement areas.

Solution: The way teenagers are approached and treated by personnel, privacy during medical procedures and facilities for relaxation and entertainment were improved. In 2012 improvements will be made on other areas as well, such as programs for daily activities of teenagers.

The hospital has the policy to provide services for almost every situation. Materials and personnel have to be flexible to cope with that diversity. With the improvement at the children's department the range of possible needs that can be served has grown.

What information: The information gathered was both about the similarities and differences between the individual needs and wishes of teenagers, and between teenagers and younger children.

Source of information: Explicit information was the reason for initiation of the project. Extensive qualitative and quantitative research has discovered improvement areas. Implicit information has shown that satisfaction among teenagers has increased.

Within-case analysis: As in the other four projects, within-case analysis showed no discrepancies.

4.3 Cross-case analysis

Because the projects were selected on the criteria of the goal of the innovation (to create higher patient satisfaction), no typical customer-routed service was found. The project classified as customer-routed service (project 1), actually should be classified as a co-routed service based on the value (6 vs. 4). And, project 4, classified as a co-routed service, should be classified as a provider-routed service (6 vs. 4). Moreover, all projects are somewhat in the bottom-right quartile of the matrix. The classification of the services into the types of customer-, co- and provider-routed was therefore questionable.

Therefore, there is decided not to place them initially in separate categories, but to compare all five cases with each other. After that, the initial Collier & Meyer (1998) classification by the person responsible for patient satisfaction was checked by using the interview data. The same was done for the Vargo & Lusch (2004) classification of the project leaders. This is shown in paragraph 4.3.4.

The findings of the cross-case analysis are presented in this section and are summarized in table 3. Paragraphs 4.3.1 to 4.3.3 show the findings for each of the factors from the model. As mentioned above, paragraph 4.3.4 shows the reclassification of the services. The analysis has also led to other findings, which are presented in paragraph 4.3.5.

4.3.1 Service innovation process

4.3.1.1 Activities

In projects 1 (calling patients) and 2 (visiting hours) the activities 3, 4, 5 and 6 were at least not mentioned in the interviews. In project 1 activity 8 (training of personnel) was not mentioned as well. Furthermore, in project 3 (new guidelines) activity 5 (idea testing) was also not mentioned. It is however not clear if the not-mentioned activities are actually absent in the process or just not explicitly mentioned.

In project 4 and 5 all ten activities were mentioned.

No indications were found that activities have to be added or that some have to be deleted or split.

There is support that the sequence as presented in the model is correct. There are no indications that activities should be switched.

4.3.1.2 Speed of the process

Project 2 is the only project in which speed of the non-medical innovation process was important. In the other four cases no indications were found to support the statement that speed is important.

4.3.1.3 Linear vs. parallel

Three projects (3, 4, and 5) show one parallel in activities: The development of the service and the training of personnel. Feedback from personnel is used to develop the service in such a way that the service can be optimally delivered by personnel.

4.3.1.4 Existence of reflection and evaluation activity

In all projects, a feedback/reflection/evaluation activity was explicitly mentioned as part of the development process to optimize the solution/idea.

4.3.1.5 Iterative

With exception of project 1 (calling patients) the project leaders of all projects mentioned a loop from activities 7 (development) to 10 (evaluation/feedback).

		Projects				
		Project 1: Calling patients	Project 2: Visiting hours	Project 3: New guide-lines	Project 4: Bread-buffet-cart	Project 5: Attention for teenagers
Service innovation	1. Initiation	Yes	Yes	Yes	Yes	Yes

process						
	2. Formation of cross-functional team	Yes, but not clear if cross-functional	Yes	Yes, but not clear if cross-functional	Yes	Yes, but not clear if cross-functional
	3. Problem analysis and criteria determination	No	No	Yes	Yes	Yes
	4. Idea generation	No	No	Yes	Yes	Yes
	5. Idea testing	No	No	No	Yes	Yes
	6. Decision-making	No	No	Yes	Yes	Yes
	7. Development	Yes	Yes	Yes	Yes	Yes
	8. Training of personnel	No	Yes	Yes	Yes	Yes
	9. Implemen-tation	Yes	Yes	Yes	Yes	Yes
	10. Evaluation/ feedback	Yes	Yes	Yes	Yes	Yes
	Sequence	1-2-7-9-10	1-9-10-7-8-9-10	1-2-3-4-6-7/8-9-10-7/8-9-10	1-2-3-4-5-6-7/8-9-10-7/8-9-10	1-2-3-4-5-6-7/8-9-10-7/8-9-10
	Linear vs. parallel	Linear	Linear	Parallel: Develop-ment and training of personnel	Parallel: Develop-ment and training of personnel	Parallel: Develop-ment and training of personnel
	Speed of the process important?	No	Yes	No	No	No
	Existence of reflection and evaluation activity	Yes	Yes	Yes	Yes	Yes
	Iterative	No	Yes: Loop 7->10	Yes: Loop 7->10	Yes: Loop 7->10	Yes: Loop 7->10
	Level of planning and formalization	Low	Low	Some	Some	Low
Customer involvement	Who	Represen-tative sample	Represen-tative sample	Represen-tative sample	Represen-tative sample	Lead users and represen-tative sample
	How	Users and catalysts	Users	Users	Users	Users, catalysts

						and resource
	How much	Low	Some	High	High	High
Customer information	Source	Patients and general practitioners	Foundation and patients	Patients, newspaper rankings and Fred Lee	Patients	Patients
	Content	Similarities	Similarities	Differences	Both similarities and differences	Differences
	Use	Action-oriented	Action-oriented	Action-oriented	Action-oriented	Action-oriented
Service type	Customer-routed/ provider-routed - Assigned by interviewee – actual	Co	Provider	Provider	Provider	Co
	Customer-routed/ provider-routed - Assigned by interviewee – ranking	Customer	Provider	Provider	Co	Co
	Customer-routed/ provider-routed - From data	Provider	Co	Customer	Co	Customer
	SDL/GDL - Assigned by interviewee	SDL	SDL	SDL	Middle	SDL
	SDL/GDL - From data	GDL	GDL	SDL	GDL	Middle
Other findings	Uniqueness of solution	Copy	Copy	Unique	Unique	Unique
	Flexibility of solution	Maximum flexibility on some aspects, standardi-zation on others	Maximum flexibility on some aspects, standardi-zation on others	Maximum flexibility on <u>all</u> aspects	Segmen-tation with limited flexibility	Maximum flexibility on some aspects, standardi-zation on others
	Resistance and difficulties	No	Yes	No	Yes	No

Table 3: Cross-case analysis findings

4.3.1.6 Level of planning and formalization

The level of planning and formalization was rather low. Only in projects 3 (new guidelines) and 4 (bread-buffet-cart) some planning and formalization of the process was found, indicated by deadlines and targets. But it was explicitly mentioned by the interviewees that these deadlines and targets were not strict, but used as guidelines.

4.3.2 Customer involvement

4.3.2.1 Who

In all projects a representative sample of the user population was involved in the non-medical innovation process to gather information about patients. Only in project 5 (attention for teenagers) a group of lead users was involved as well.

4.3.2.2 How

In all projects the patients were primarily involved as users. In projects 1 and 5 patients were also used as catalysts in the initiation activity. Explicit information about the dissatisfaction by patients was used to initiate the project and to find support for the project. Furthermore, the lead users in project 5 were involved as a resource.

4.3.2.3 How much

Customer involvement in project 1 was low with only little communication with patients to gather data. In project 2 there was some customer involvement, with an extensive patient satisfaction research and interviews. Customer involvement in projects 3, 4 and 5 was high with much communication with patients about their opinions, problems, ideas, etc.

4.3.3 Customer information

4.3.3.1 Source

In all projects information came directly from patients. In projects 1, 2 and 3 information from other sources was used as well. Project 1 uses information from general practitioners, project 2 uses information from the foundation and in project 3 information was used from the newspaper rankings and from the book of Fred Lee.

4.3.3.2 Content

Projects 1 and 2 primarily use the similarities between patients. Projects 3 and 5 use the differences between patients. Project 4 uses both the similarities and differences in an equal amount.

4.3.3.3 Use

Information usage in all projects was action-oriented. The gathered information was only used to make decisions, not to support previous decisions by enhancing knowledge or not to symbolically comply with the demand of external actors to use information.

4.3.4 Service types

As was stated in the opening paragraph of section 4.3, project 1 (customer-routed service) actually was a co-routed service, and project 4 (co-routed service) actually was a provider-routed services.

The services therefore are compared on the topics: Assigned by interviewee (ranking and actual) and reclassification from data.

4.3.4.1 Customer-routed vs. co-routed vs. provider-routed

The service types of the services in project 1, 2, 3 and 5 changed when the data from the interviews was used to reposition the service in the matrix. Only the type of service in project 4 remained unchanged when comparing with the ranking classification. However, when comparing the service types from the results of the interviews with the service types from the actual case selecting values, the types in all projects changed.

4.3.4.2 SDL vs. GDL

When using interview data to reclassify the services, only project 3 kept the same service type. In the other four projects the service type changed radically (projects 1 and 2) or shifted towards the other type (projects 4 and 5).

4.3.5 Other findings

4.3.5.1 Design process and outcome of solution

In projects 1 and 2 the solutions were copies from the solutions of innovation projects in other hospitals, where the solution already proved to be a success. In projects 3, 4 and 5 the solutions were uniquely developed for that specific hospital.

In projects 1, 2, 4 and 5 the solution was a standardized service for every patient, with maximum flexibility of some of the aspects. In project 3 the solution was maximum flexibility of almost all aspects.

4.3.5.2 Resistance and difficulties

Two of the projects met resistance from personnel in the implementation of the solution: Project 2 and project 4. In the interviews and documents of projects 1 (calling), 3 (guidelines) and 5 (teenagers), no difficulties were mentioned.

The project leader of project 3 explicitly mentioned that to prevent resistance, the project team decided to inspire the personnel to 'unfreeze' routines, culture and work patterns. This was done with workshops, meetings and inspirational speeches by Fred Lee.

4.3.5.3 Competition between healthcare providers

There are indications that there is some competition between hospitals. Project 3 (guidelines) was started because of lower ranks in the rankings published by newspapers and websites. This was supported by a statement from the project leader that patients also start looking for foreign hospitals (Belgium) for the same procedures. This indicates that the hospital is feeling some pressure from its competitors. Moreover, the foundation's mark in project 2 (open visiting hours) indicates a certain quality level and way of working. The mark is meant for positive promotion to attract and retain both personnel and patients. The other three hospitals however did not implicitly or explicitly mention any information about competition. Actually, they cooperate by exchanging details about successful improvement projects, such as the calling of patients (project 1) and the bread-buffet-carts (project 4).

4.4 Patterns

The data in each row of table 3 are compared with the data in other rows to search for patterns. Four patterns were discovered. Further research can be done to find confirm or reject these patterns.

Pattern 1: Collier & Meyer (1998) and Vargo & Lusch (2004) match
There is some support that both service typologies match. In the projects where the data led to the classification provider-routed or co-routed, it also led to the classification GDL. In one of the customer-routed projects the classification was SDL, in the other one the classification was 'middle'.

Pattern 2: Uniqueness of solution and other factors
There are indications that the unique development of the solution is related to the presence of activities 3 (problem analysis) to 6 (decision-making). Furthermore, there are indication for relations with activities 7 and 8 being parallel, a high level of customer involvement, and the dominance of information about differences and similarities between patients in information usage (content of patient information).

Pattern 3: Service types are related to information and flexibility
Some support can be found that the service type (customer-routed/SDL vs. provider-routed/GDL) is related to the dominance of information about differences between patients in information usage (content of patient information) and the level of flexibility in the solution (maximum flexibility in some aspects or in all aspects).

Pattern 4: Resistance and the impact on behavioral change
Project 2, 3 and 4 meant a change in working procedures and behavior. In project 2 and 4 this led to resistance from personnel. In project 2, this resistance from employees meant extra effort and resources by the project team to develop and implement the solution. The resistance in project 4 delayed the project. In project 3 this resistance was prevented.

5. Discussion of findings

The case study research started from operationalizing the "service innovation success factors model". This model describes the success factors for service innovation (service innovation process, customer involvement and customer information) and the practices that are related to those factors, and the moderating variable 'service type'. The case study results were used to find support that these success factors are important in non-medical innovation as well and that the same practices are applied. Furthermore, the case study research was used to find clearance about the practices that are under discussion to see which are applied in non-medical innovation. Moreover, for the practices that were different in the projects, such as the linearity of the innovation process, indications were sought to relate these differences to the service types.

The results from the case study research are being discussed in this chapter. For each of the results there is stated if these results were expected and, if not, what might explain this. After that, recommendations follow for some practices, based on the best practices from service innovation literature.

The sections 5.1-5.4 represent the three success factors and the moderating variable. Section 5.5 shows how these results can be used to extend the theory on non-medical innovation practices.

5.1 Service innovation process

As expected, not all of the activities are explicitly mentioned in the interviews. This result is similar to the conclusions in paragraph 2.1.3, stating that activities are often hard to distinguish and that the process may be iterative, which means that activities are hard to discover. However, for all activities there are indications for their presence. This means that the ten activities in the "Synthesized service innovation process model" are correct for non-medical innovation, both the presence and the sequence of the activities. The ten activities are used to create a "non-medical innovation process model" (figure 6). As expected, the reflection/evaluation/feedback activity was present in each project.

The findings from this research greatly support the findings of Alam & Perry (2002). Similar to their results, there are strong indications that activity 7 (development) and 8 (training of personnel) are sometimes executed at the same time. The parallel execution of activities 7 and 8 is related to the dependency on input from personnel. This in turn might be related to the impact the solution has on working procedures and culture. In cases where much input from personnel is required for development of the solution, the activities are executed parallel.

There can also be stated that, as in the models by Alam & Perry (2002), 'initiation' (called by Alam & Perry (2002): 'strategic planning') and 'idea generation' are sometimes executed at the same time. This, however, only happens when the idea is copied from hospitals where it already has proved to be a success. In those cases, activities 3 to 6 (problem analysis and criteria determination, idea generation, idea testing and decision-making) are skipped. This can of course be explained by the fact that further research about the problem and criteria and expected outcomes of the solution, is not

necessary. Furthermore, the parallel activities 'idea screening' and 'business analysis' from the models of Alam & Perry (2002) are in the "non-medical innovation process model" combined into one activity: 'idea testing'.

In none of the projects the level of formalization and planning was high. Edvardsson et al (1995) and De Brentani (1989) state that one of the solutions to get the desired speed of the innovation process, is by formalizing and planning the process. As this desire for speed is caused by the fear of imitation by competitors (Alam & Perry, 2002; Kuusisto & Riepula, 2008) and that competition between hospitals is weak, there is no strong desire for speed. Therefore there is no necessity for formalizing and planning the non-medical innovation process. The result of this low level of formalization and planning is that the project team has much freedom, time and resources to develop the solution.

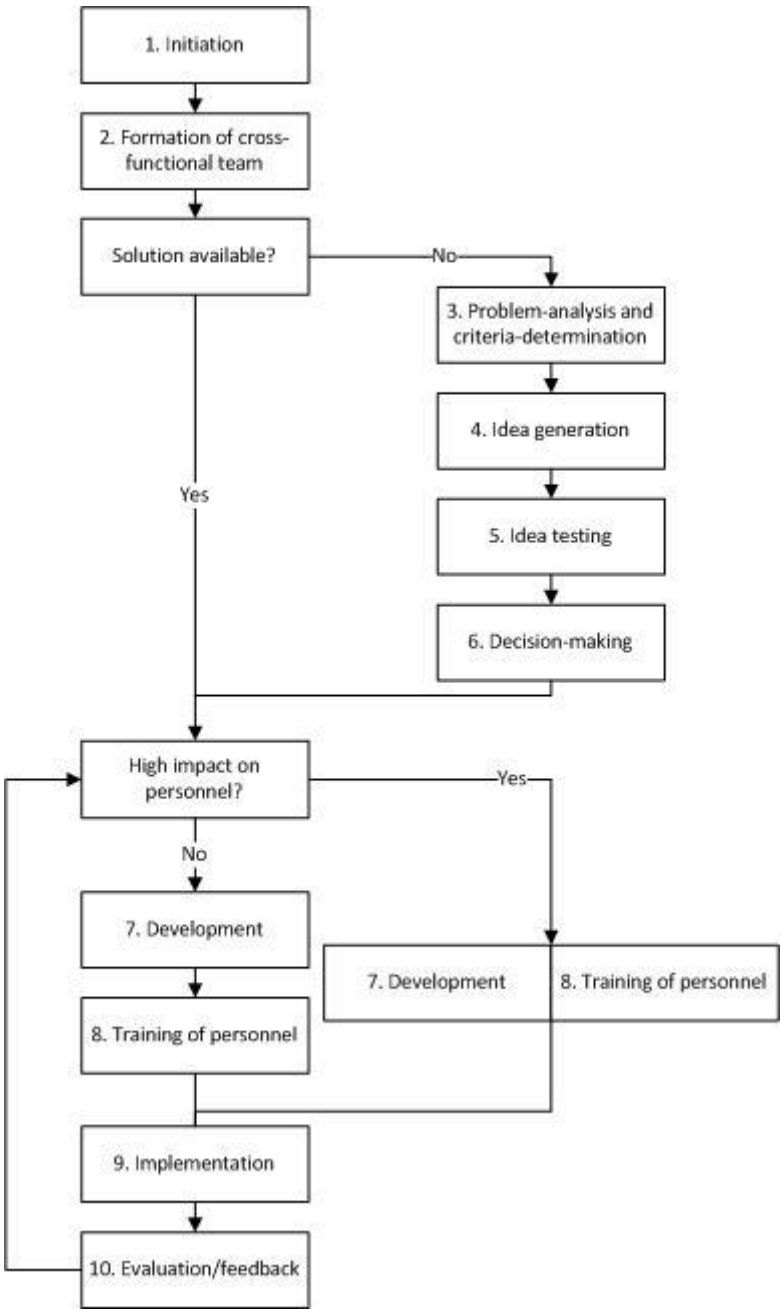


Figure 6: Non-medical innovation process model

There is a feedback loop, which includes the activities 7-10 (development, training of personnel, implementation and evaluation/feedback). As the first outcomes of the implemented solution become clear, these outcomes are used to provide new information to adjust or redevelop the solution, (re)train personnel, implement it and measure new outcomes. The presence of this feedback loop is as expected from the information in paragraph 2.1.3. Although this feedback loop represents that the process may be iterative, it is not clear if backward steps are commonly used between two following activities, for example between 'idea generation' and 'idea testing'. Clear indications for this were not found in the case studies.

For Dutch hospitals, this means that in non-medical innovation projects they should follow the "non-medical innovation process model". Two separation points are present in this model. The first is to determine if the solution is already available from other hospitals, which leads to skipping activities 3-6. The first separation point is to determine the impact the solution may have on procedures, culture, etc., which may lead to parallel execution of activities 7 and 8 when impact is high. They should put attention on the feedback loop. A final implication is that the level of formalization and planning of the process should be low, as a high level is unnecessary at this moment and hinders creativity and space for optimal development of the solution.

5.2 Customer involvement

Similar to the findings of Gruner & Homburg (2000) and (Kuusisto & Riepula, 2008) the level of customer involvement differed much between the projects and activities. Only once did a hospital choose to explicitly involve lead users in the non-medical innovation process. They were involved to generate ideas.

In each project a representative sample of the population was involved as users, to provide information about the problem. They also provided criteria for judging the ideas and feedback about the idea or already implemented solution.

In none of the projects patients were involved as co-creators. This in contrast to what was expected. Nambisan (2002) stated that customers that have the role of co-creators, provide suggestions and continuous feedback during development and so help develop the solution. This absence of this role might be explained by the fact that the information about the situations and delivery channels of patients is already available in the hospitals and that suggestions and continuous feedback from patients are therefore not necessary in the development activity.

Only in one project (project 5: attention for teenagers), patients were explicitly used as a resource, brainstorming about ideas for development. In the other four projects the solutions were already available, or the project team did not find it necessary to involve patients in the idea generation activity.

Project teams have to carefully consider if they should involve lead users in the innovation project. Although these lead users may have revolutionary ideas, they often do not represent the needs, wishes and situations of the largest proportion of the patients. But at least a representative sample of the patient population should be involved. Success of the innovation projects may even be

enlarged by not only involving patients as users, but also as co-creators in the development activity and as resources in the idea generation activity. But, this is dependent on the already available amount of information about patients' needs, wishes and situations and ideas for development.

5.3 Customer information

As expected, there was a difference between the dominant content of information about patients. In some projects the similarities were dominant, in order projects the differences between patients.

Furthermore, as expected, information about patients did not come only from patients. In projects 1, 2 and 3 information from other sources was used as well. Project 1 uses information from general practitioners, project 2 uses information from the foundation and in project 3, information was used from the newspaper rankings and from the book of Fred Lee.

In all projects the information usage was action-oriented. This supports the findings of Morgan et al (2005) and Rollins et al (2011) in which they state that is customer information is predominantly used for decision-making purposes. Indications for the other two types of information usage, knowledge-enhancing and symbolic, were not found.

Of course, when looking at customer information use of a single project, a researcher can never discover how the gathered information is used outside of the project, at other times and places. It is therefore obvious that indications for the other two types of information usage were not found. Therefore no statements about the efficiency of customer information usage can be done.

An important implication for hospitals is that they have to determine the dominant information content (differences or similarities) on forehand. As is shown in the next session, this dominant information content may be dependent on the service type. Hospitals should furthermore use information from all available sources and not only use information for direct decisions, but also to enhance knowledge about patients for future decisions and to find support for past decisions.

5.4 Service types

There are indications that the method used to determine the position of the service in the service typology matrix of Collier & Meyer (1998) is highly subjective. The same can be said for the positioning question that followed from the literature on Service-Dominant Logic (Vargo & Lusch, 2004). However, if data from the case studies is used to determine the service types, the both typologies share resemblance. This supports the validity of both service typology instruments to some extent.

Whereas there was expected that the service type would be directly related to three factors, i.e. the dominant content of information (differences vs. similarities), the non-medical innovation process and the level of customer involvement, only for the first relation direct support was found. There are indications that a customer-routed/SDL service is positively correlated to information about

differences between patients being dominant, this is opposite to the relation between provider-routed/GDL services and the dominance of similarities.

However, an indirect relation can be found for the other two factors as well, through the dominant content of information about patients and the uniqueness of the solution (see figure 7). That means that the service type influences directly the dominant content of information, which has a direct relation with the uniqueness of the solution. Customer-routed/SDL services are related to a dominance of differences, whereas provider-routed/GDL services are related to the dominance of similarities. Furthermore, in cases where information about differences was the dominant content, the solution was unique for that hospital. This uniqueness is directly related to a high level of patient involvement, the presence of innovation process activities 3-6 and the linearity of the innovation process. In conclusion, the type of service influences the level of patient involvement and the non-medical innovation process indirectly.

Furthermore, there are indications that the service type is directly related to the level of flexibility in the solution of the non-medical innovation process. Customer-routed/SDL services have maximum flexibility on all aspects of the solution, while provider-routed/GDL services have maximum flexibility on no or only some aspects.

No support of an influence of the 'service type' on the other practices was found, i.e the presence of reflection and evaluation, the process being iterative, the level of formalization and planning, which patients are involved and how, the source of patient information and the type of patient information use.

This means that project teams should determine the service type, because this directly influences the dominant content of information that is used, and the process and level of patient involvement indirectly. The service type is furthermore related to the desire to develop a unique solution for the hospital and the level of flexibility in the solution.

5.5 Extending theory

As said in the opening paragraph of this chapter, the case study results were used to check the appropriateness of the "service innovation success factors model" and best practices from service innovation for non-medical innovation, to find clearance about practices under discussion and to explore the influence of the moderating variable 'service type'.

The "service innovation success factors model", presented in section 2.4, has to be enlarged to include the discovered factors 'uniqueness of solution' and 'flexibility in solution'. Furthermore, some support for the influence of the service type on the relation between the success factors and innovation success was found. The "non-medical innovation success factors model", developed is this research, is presented in figure 7. This model describes the success factors for non-medical innovation, corresponding practices, influencing variables and relations, and so provides an overview of the important aspects in a non-medical innovation project.

Instead of the 'speed of the process' being a practice, it is changed to the influencing variable 'speed of the process'. It influences the linearity of the innovation process and the level of formalization and planning of the process. Furthermore, competition between hospitals was added as an independent variable, influencing this 'speed of the process'.

No support of an influence of the 'service type' on the other practices was found, i.e the presence of reflection and evaluation, the process being iterative, the level of formalization and planning, which patients are involved and how, the source of patient information and the type of patient information use. A final conclusion is that the service type classifications are related.

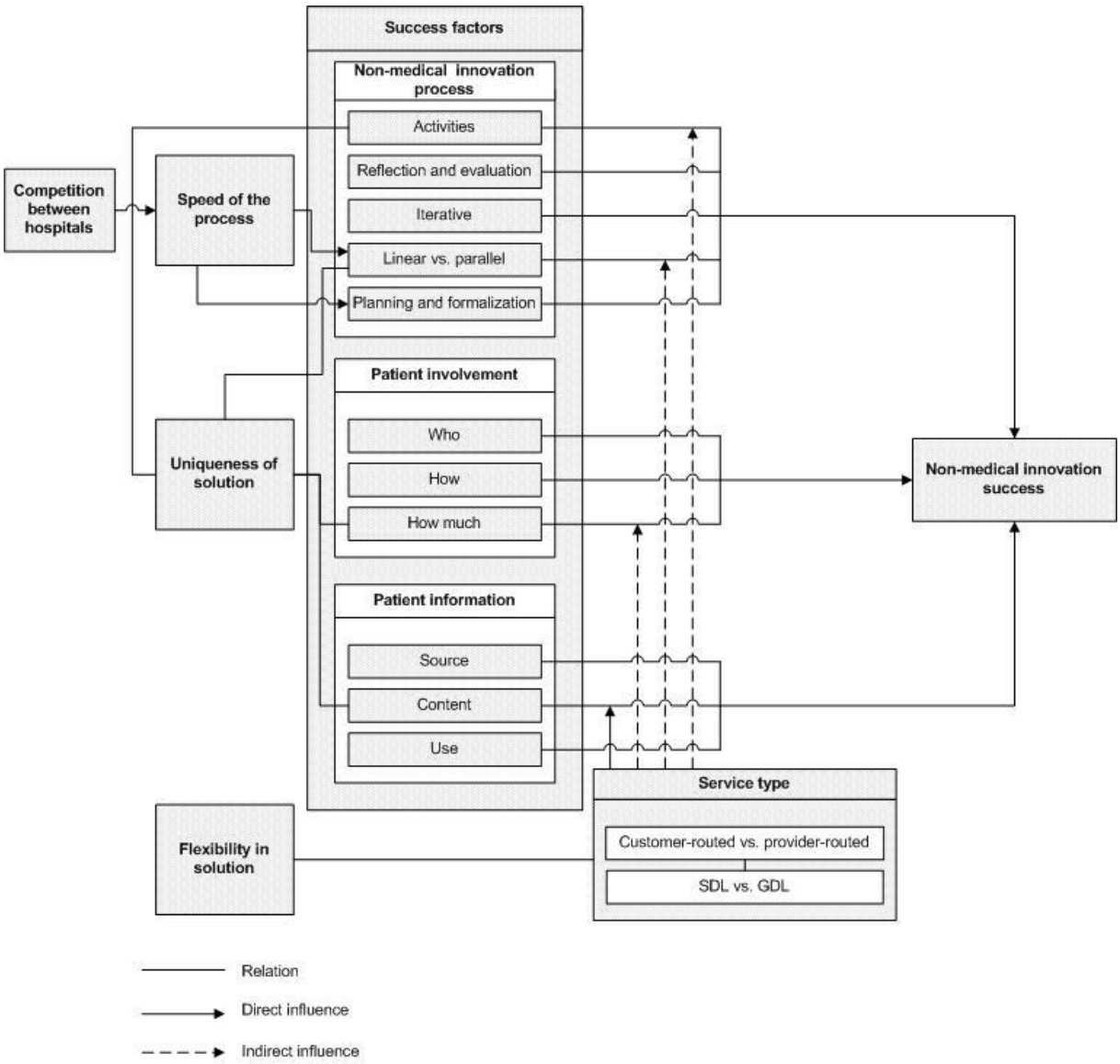


Figure 7: Non-medical innovation success factors model for Dutch hospitals

6. Limitations

This research has several limitations which have an impact on the reliability and validity of the results and recommendations.

The research was conducted by one researcher. The personal characteristics have an impact on the literature and data gathered, analyzed and conclusions. To validate the results more researchers are necessary, with other backgrounds and personal characteristics.

The research was a case study research in a small number of cases. Furthermore, the cases were all in Dutch hospitals. Hospitals in other countries may be different, and there may be difference between sectors and organizations. The business-to-business market may be different as well. The projects were all business-to-consumer. The results therefore cannot be generalized to all countries and sectors.

Data was collected through telephone interviews with only one respondent per case. Documents were sent by these respondents. Objectivity therefore cannot be guaranteed. It is recommended that more respondents are interviewed per case, with different functions in the projects to gather multiple perspectives on the same case. Other documents, such as annual reports of the hospital should be used as well to gather more information.

The research design was cross-sectional. Data was gathered after the full implementation of the projects. A longitudinal approach during such a project might lead to better results and new insights. Future research may choose a different qualitative research strategy or different methods for data collection and analysis.

All the relations in the model should be empirically tested with extensive quantitative research. The operationalization of the factors presented in this report, is too limited to for quantitative research. More extensive operationalization is necessary. Furthermore, the operationalization of the concepts of Service-Dominant Logic and Goods-Dominant Logic is very limited, only focusing on one of the aspects: An overall point-of-view on the similarities and differences between patients. Aspects such as the role of patients in the service value creation process and the relation between the service provider and the patient, should be included. The new factors ‘uniqueness of solution’ and ‘flexibility in solution’ should be operationalized as well.

Many other factors that may have influence on the success of a non-medical innovation are not studied, such as the composition of the team, the time spend in each activity, the number of ideas generated, etc. Explorative research is necessary to discover all these factors, of which the influence should be tested.

7. Conclusions and managerial implications

In this chapter the conclusions are presented in section 7.1. The findings of the research furthermore have important managerial implications, which are presented in 7.2.

7.1 Conclusions

The aim of this research was to increase the knowledge on the practices for non-medical innovation that creates higher patient satisfaction, by answering the following research question:

What are best practices for non-medical innovation in Dutch hospitals to create higher patient satisfaction?

Literature study has identified best practices by looking in service innovation literature, such as a "synthesized service innovation process model" and the involvement of a representative sample of the customer population in the service innovation process. Moreover, important practices became visible, for example service innovation process linearity and the level of customer involvement. These were summarized in success factors, which were presented in a "service innovation success factors model".

The practices and variables in that model were operationalized and adapted for non-medical innovation through case study research of five patient satisfaction improvement projects in Dutch hospitals to find support for the practices, clearance for the practices under discussion and indications for the influence of service type on the relations in the model. The findings from these case studies have led to the "non-medical innovation success factors model" for Dutch hospitals (figure 7) as presented in section 5.5.

Several commonly used practices for non-medical innovation in Dutch hospitals were found, for example that it is recommended to follow the "non-medical innovation process model", to involve at least a representative sample of the patient population in the innovation project and to create a network of hospital managers to share innovation projects. Moreover, the case study findings have also shown support for the influence of the type of service on the relations between success factors and non-medical innovation success, i.e. the practices of non-medical innovation process activities, linearity of the process, the dominant content of patient information used in the innovation project and the level of patient involvement. The commonly used practices and relations are presented in the next session.

Because of the rather weak operationalization of the practices, the absence of information about the actual success, and the presence of too much variables, the commonly used practices in Dutch hospitals could not be tested to check if they are best practices. Section 7.3 provides recommendations for further research to check this.

7.2 Managerial implications

The research has identified important factors for non-medical innovation success: Service innovation process, customer involvement and customer information. The relations between these factors and success are directly or indirectly influenced by the type of service that is being innovated. This is being presented in paragraph 7.2.1. In paragraph 7.2.2 the best practices for non-medical innovation are presented.

7.2.1 Determine the service type

An important implication for Dutch hospital managers is that is important to determine the type of service that is being improved (customer-routed/SDL or provider-routed/GDL). The methods used in this research should not be applied as they are too subjective. Development of a service classification instrument is necessary. Before this, it is recommended to use the descriptions of both typologies to determine to what extend the service fits these descriptions. In table 4 the consequences of this difference for the practices in this research are presented. This table is discussed in the next paragraphs.

		Service type Customer-routed/SDL	Provider-routed/GDL
Non-medical innovation success factor	Dominant information about patients	Differences between patients	Similarities between patients
	Level of customer involvement in non-medical innovation process	High	Low
	Uniqueness of idea/solution	High	Low
	Idea development activities	Present	Absent/skipped
	Personnel training and idea/solution development activities	Parallel	Linear

Table 4: Consequences of differences between service types on non-medical innovation success factors

7.2.1.1 Dominant information about patients

In typical customer-routed/SDL non-medical innovation projects, the organization has to know much about the differences between patients to determine the range of needs, wishes and situations that have to be dealt with through the offering of special knowledge and skills. The organization has to determine which special knowledge and skills are necessary, which are available and which have to be developed or can be removed.

Provider-routed/GDL non-medical innovation projects require information about the similarities between patients to be able to develop a standard service that covers the needs, wishes and situations of as many patients as possible. When the similarities are known, the organization can design the new service or procedure.

7.2.1.2 Level of customer involvement in non-medical innovation process

Because it is important for typical customer-routed/SDL non-medical innovation projects to know the specific range of needs, wishes and situations that have to be dealt with, communication with patients has to be very close and extensive. This in contrast to typical provider-routed/GDL non-medical innovation projects where similarities can be more general and therefore the level of customer involvement can be low.

7.2.1.3 Uniqueness of idea/solution

Support of a relation between the dominant information about patients and the uniqueness of the solution was found. In typical customer-routed/SDL non-medical innovation projects where information about the differences is dominant, the idea/solution was uniquely developed for that specific hospital. In typical provider-routed/GDL non-medical innovation projects where information about the similarities is dominant, the idea/solution was copied from hospitals where it had already proved to be a success.

Cooperation between hospitals seems to be very important to share the innovation projects that create higher patients satisfaction. Hospital managers therefore have to create a network with other hospital managers and go to hospital innovation seminars to share this information.

7.2.1.4 Idea development activities

If the idea/solution as such is copied from other hospitals in typical provider-routed/GDL non-medical innovation projects, the activities 3, 4, 5 and 6 of the synthesized “non-medical innovation process model” (figure 8) can be skipped.

7.2.1.5 Personnel training and idea/solution development activities

In very unique ideas/solutions the new service or procedure may have a strong impact on the culture and working procedures of personnel in the hospital. The resistance for change by personnel can be prevented by combining the personnel training and idea/solution development activities by involving personnel in development.

7.2.2 Commonly used practices

Next to the recommendation to determine the service type on forehand, the research has shown several best practices for non-medical innovation. These are:

- Innovate following the “non-medical innovation process model” (figure 8).
- As competition between Dutch hospitals is still low and thus the speed of the innovation process is not important, the level of formalization and planning should be low. To be patient and to take the time for optimal development of the solution is more important for non-medical innovation success.
- Activities 7- 10 are part of a feedback loop for further development of the service or procedure. Reflection and evaluation is an important part of the non-medical innovation process.
- If patients are involved, involve at least a representative sample of the patient population.
- Involve patients at least as users to gather information about problems, needs, wishes, situations and criteria.

- Use the information about patients from all available sources: Patients themselves, suppliers and other actors.
- Use information about patients at least for action-oriented purposes.
- Create a network between hospital managers to share innovation projects that create higher patient satisfaction.
- Identify the different aspects of a service and determine which are standardized and which need (maximum) flexibility.

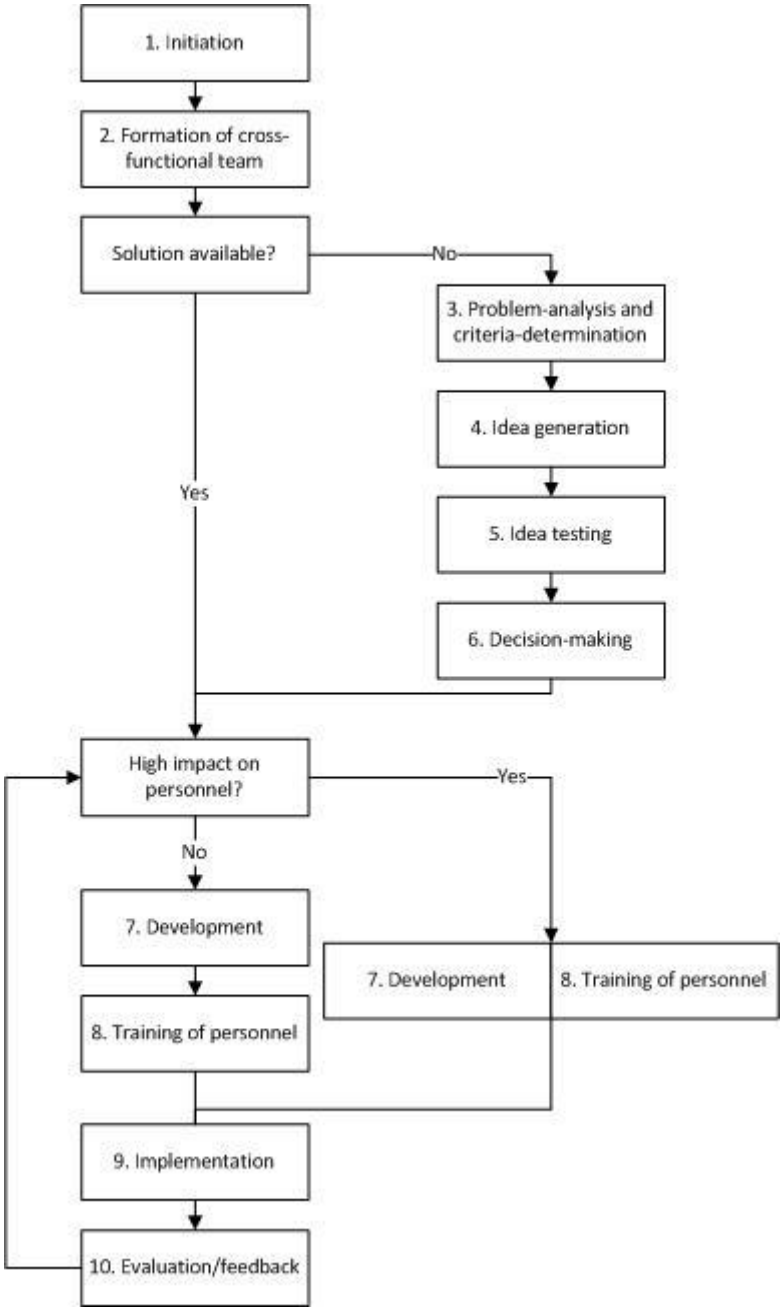


Figure 8: Non-medical innovation process model

7.3 Further research

The “non-medical innovation success factors model”, presented in section 5.5, describes success factors, practices, variables and relations for non-medical innovation in Dutch hospitals. This model should be expanded with other factors, practices, variables and relations.

Case study research may be repeated for other hospitals in the Netherlands to find more other commonly used practices. Moreover, the “service innovation success factors model” as presented in section 2.5, should be adapted for other (healthcare) sectors as well, both in the Netherlands as is other countries to cope with the differences in demand, markets, organizational characteristics, etc.

Further research may also focus on testing the model from several research perspectives: ‘Best practices’, ‘contingency theory’ and ‘configurations approach’. Before testing the relations, the different variables should be better operationalized. Information on non-medical innovation success should be available and practices, contingencies and configurations have to be tested in a quantitative way, keeping all other variables the same for all projects.

A final recommendation for further research is to use other research strategies and methods, such as a longitudinal approach, field observation, large quantitative surveys and meta-analysis of non-medical innovation literature. Combining several research methods and strategies increases the reliability and validity of the results.

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Appendix

A.1 Summary of Schut & Van de Ven (2005; 2011)

In the 1970s the focus of the Dutch government became to promote public health and to guarantee a minimum level of quality and access to health care for every one via health insurance. Three acts provided the basis for universal access to health care.

The Sickness Fund Act (ZFW, 1941) stated that people with low incomes had to be insured in the Public Sickness Fund. People with higher incomes had to enroll in private sickness funds. In this way everyone was in the opportunity to receive the primary and curative health services. With treatments were covered was standardized and there was no copayment for these services.

The Exceptional Medical Expenses Act (AWBZ, 1967) determined that people also had to be insured for long term care and medical care. Copayments to these treatments was usually income-related.

The contributions of the people to the public insurance funds was income-related. The premiums for the private insurance funds however were related to factors such as age and medical history. The Health Insurance Access Act (WTZ, 1986, 1998) set a maximum premium price for the elderly and other high-risk groups.

Health care providers were paid per visit or treatment and insurance companies were obliged to contract with every licensed health care provider. Insurance companies in their turn were fully reimbursed for their expenses. This meant that health care providers had full freedom to set prices and the number of medical professionals grew.

These two developments from both the demand side and supply side of health care led to increasing quantity, quality and costs of health care. National expenditures on health care grew significantly every year, which worried the Dutch government. If prices kept rising in this rate it might become necessary to reduce the coverage of the sickness funds. The access to health care for people with low income would then become limited. A second worry were the effects on national costs of labor and thereby the economic growth and export.

Prices and supply of care had to be regulated by the Dutch government, which brought the government into the search of balance between financial access (reduce costs) and physical access (number of medical professionals). The hospitals care was the first to be regulated. Reducing costs of health care namely meant that health care providers had to become more efficient, which led to a decrease in the number of medical specialists, and therefore longer waiting lists. Soon became clear that radical reforms in the health care market were necessary to reach both goals.

The government had several policies on how to keep prices low. First, the government set fixed prices for visits and treatments, which was later transformed to fixed budget for providers and then to variable budgets. Second, the government tried to make arrangements with medical specialists to reduce their fees. The partnerships of specialists were given lump sums with were to be distributed

among their members. Later the partnerships received their revenue from the health care provider budgets, with was based on negotiation. Third, prices of prescriptive drugs were too high. The government therefore set maximum prices for these drugs, which was later turned into a policy of setting fixed prices comparable to similar drugs in other European countries. The prescription of non-comparable drugs was restricted. Fourth, copayment percentages were increased and the number of treatments covered were reduced. This policy was practically and ethically hard to implement and did not lead to the desirable results.

In the 1980s the Dekker committee developed a blueprint for a new health care market in which managed competition between health care providers and insurance companies would increase and guarantee quality of care, and at the same time reduce the prices of treatments.

These plans were almost similar to the current situation in the Dutch health care market. But because the necessary conditions were not present at the time, these plans could not be implemented. Since the presentation of the plans the Dutch government has been working on creating the conditions by changing and substituting acts and putting in place incentives. The optimal conditions are still not present. Full transparency in prices and quality of health care providers and insurance companies for patients and for insurance companies as well, is missing.

On January 1st, 2006, the Health Insurance Act replaced several acts and thereby initiated full reforms of the Dutch health care market.

In the new situation all Dutch inhabitants have to be insured at an insurance company, for at least a basic package of care. The inhabitants are free to choose the insurance company once a year and to choose supplementary packages.

The insurance companies are obliged to accept every customer for the basic package and agreed with each other to not refuse customers if they want supplementary packages. Some companies therefore have a higher risk than others, on the basis of their group of enrolled customers. The allocation of budgets from the Central Fund by the Dutch government to the insurance companies is on the basis of a risk equalization scheme. This scheme however is not perfect. For the remaining part of their expenses, insurance companies rely on the revenue from premiums for the basic and supplementary packages. Some insurance companies also neglect the agreement and refuse interested customers in supplementary packages or offer them at different prices. The price for the basic package has to be the same for every enrollee.

Insurance companies are free to negotiate with health care providers on the prices of visits, treatments and drugs, the so-called B-segment. This space however still is limited. The amount of Diagnose Treatment Combinations (DBC) has risen from 10% in 2005-2007 to 34% in 2009-2011. On January 1st, 2012, the percentage of DBC's in the B-segments is increased to 70% (Dutch Health Care Authority (NZa), 2011). The NZa also calculated that the number of DBC's in the B-segment can be increased to 85%.

Entering the hospital market was hard and unattractive, as hospitals were not permitted to make a profit. It required getting a building permit from the government and legal approval. Only a few

independent treatment centers were able the market. Nowadays entering the market is easier, because a building permit for hospitals is no longer required and the provision of permits to private health care providers is being discussed. Next, the education of medical professionals is being opened up, and the contractual arrangements between partnerships and hospitals are being changed and restricted.

The effects of the above mentioned changes are both positive and negative, in almost all areas. But competition between insurance companies and health care providers has grown, and prices of visits, treatments and drugs are under pressure, quality and transparency are becoming important factors for choosing a health care provider or insurance company, and insurance companies increasingly try to channel their customers to the best health care providers, the waiting lists are shorter, and the interest of insurance companies into the prevention and control of medical problems has grown. In general the effects are into the right direction, but much work still has to be done to create the optimal conditions for a health care market and to get the right results.

A.2 Vragenlijst voor selectie (in Dutch)

EXTRA INFORMATIE
LEES DIT GOED DOOR

Voor het onderzoek wordt een service benadering op diensten in ziekenhuizen genomen.

Wat zijn services?
Services bieden een oplossing voor een probleem van een klant. Een service proces bestaat uit het identificeren en analyseren van het probleem, en het zoeken naar en leveren van oplossingen in de situatie van de klant.

Deze definitie kan heel breed getrokken worden. Het verschaffen van informatie over een behandeling, het zorgen voor een prettige temperatuur in het gebouw, etc. zijn allemaal zaken die vallen onder deze definitie van services. Kwaliteit en klanttevredenheid komen voort uit zowel de uitkomst van het service proces (de oplossing) als de manier hoe die oplossing tot stand is gekomen. Ik wil u vragen op een manier van klantbeleving na te denken over de service processen in een ziekenhuis. Daarbij geldt dus niet alleen het zorgproces of de behandeling, maar bijvoorbeeld ook hoe de klant in contact komt met het ziekenhuis.

U kunt nu beginnen met de vragenlijst.

Vul in:
Naam ziekenhuis:
Naam contactpersoon
Telefoonnummer:
E-mailadres:
Wil **wel/niet** (weghalen) inzage in belangrijkste conclusies ontvangen

Vraag 1:
Uit de twee meest recente onderzoeken van het Algemeen Dagblad is naar voren gekomen dat de patiënttevredenheid in uw ziekenhuis de laatste jaren aanzienlijk is verbeterd.

Maak in onderstaande tabel een opsomming van service verbeteringen die geleid hebben tot deze verbetering in patiënttevredenheid. U kunt meer rijen toevoegen als u dat wenst.
Voorbeeld 1: Optimaliseren van het plannen van nieuwe afspraken bij Chirurgie, waardoor periode tussen afspraken verkort is.
Voorbeeld 2: Aanleg nieuwe parkeervoorzieningen, waardoor men dichter bij het ziekenhuis kan parkeren
Geef per punt aan of er sprake was van een formeel verbeteringsproject (project met start- en einddatum, projectteam, budget, etc.)

#	Verbetering	Formeel project Ja/nee
Voorbeeld 1	Optimaliseren van het plannen van nieuwe afspraken bij Chirurgie, waardoor periode tussen afspraken verkort is	Ja
Voorbeeld 2	Aanleg nieuwe parkeervoorzieningen, waardoor men dichter bij het ziekenhuis kan parkeren	Nee
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Vraag 2: (Deze vraag zal telefonisch afgenomen worden)
De projecten zullen geselecteerd worden op basis van het type service dat verbeterd is. Dit type service kan bepaald worden door de service te plaatsen in een matrix met twee dimensies:

Horizontale as: Voldoen aan wensen en behoeften van klant = De service voldoet volledig aan de wensen en behoeften van de klant. De service is uniek per klant en zal niet voor een andere patiënt op dezelfde manier herhaald kunnen worden. (Score = 0) Het tegenovergestelde is een service die minimaal voldoet aan de behoeften en wensen van de klant om zoveel mogelijk klanten deze service te kunnen aanbieden. Voor iedere klant zal de service op dezelfde manier herhaald worden. (Score = 10)

Verticale as: Controle van service proces door management = De klant is volledig vrij in het kiezen hoe de oplossing tot stand komt en heeft veel alternatieve manieren om dat te bereiken. (Score 0) Daar tegenover staat de aanwezigheid van een standaardprocedure en dus afwezigheid van vrijheid voor de klant. (Score 10)

Deze matrix is afgeleid uit het artikel van Collier & Meyer uit 1998 ("A Service Positioning Matrix", *International Journal of Production and Operations Management*, 16 (2), 64-73).

Plaats in onderstaande matrix de nummers van de verbeterde services met een formeel project uit vraag 1.

De twee voorbeelden zijn ingevuld. Uitleg: Het plannen van nieuwe afspraken zal voor veel klanten gebeuren en gebeurt nauwelijks volgende wensen van de klant, en het verloopt vrijwel altijd op dezelfde manier. Voorbeeld 1 bevindt zich daarom rechtsonder in de matrix. Bij het voorbeeld van het parkeren wordt minder rekening gehouden met de individuele wensen en behoeften van de klant, maar de klant heeft wel iets meer vrijheid in het bepalen waar geparkeerd wordt.

		Voldoen aan wensen en behoeften van klant										
		0	1	2	3	4	5	6	7	8	9	10
Controle van service proces door management	0											
	1											
	2											
	3											
	4											
	5											
	6											
	7											
	8										V2	
	9								V1			
	10											

A.3 Interview notes

A.3.1 Nabellen patienten

Vanuit patienten kwamen er klachten dat ze nog veel vragen en onzekerheid hadden nadat ze ontslagen waren uit het ziekenhuis. Veelal stelden ze die vragen vervolgens aan hun huisarts. Die klaagden op hun beurt weer over het feit dat ze het te druk hadden voor deze vragen en of ziekenhuizen niet zelf die vragen konden beantwoorden.

Het ziekenhuis is daarom gestart met een pilot voor het terugbellen van patienten de dag na ontslag. Deze oplossing is overgenomen van andere ziekenhuizen waar het al een succes was. Dit werd erg positief ervaren door zowel patienten als huisartsen en is daarom voortgezet.

Er is niet direct aan patienten gevraagd of zij het als een probleem ervaarden, wat alternatieven en criteria waren, etc. Het project is geimplementeerd op basis van verwachtingen van het projectteam. De dienst wordt niet als negatief ervaren, alleen maar als positief.

De teamleden van het project waren van mening dat binnen 24 uur verreweg de meeste vragen en onzekerheden wel naar boven zijn gekomen en dat met een langere tussentijd de vragen alweer teveel zijn weggezakt. Daarom hanteren ze deze termijn. Verder hebben patienten de mogelijkheid om op ieder tijdstip te bellen met de poli of zelfs met de behandelend arts.

A.3.2 Open bezoektijden

Sinds 2008 werkt het […] volgens het […] principe. Hierdoor was er de behoefte aan volledige open bezoektijd die op korte termijn moesten worden ingevoerd. Daardoor was er geen tijd om uitgebreid onderzoek te doen onder patienten en bezoekers.

In eerste instantie was er de vraag gelegd bij de verschillende afdelingen om hier invulling aan te geven, maar hier kwam absoluut geen steun uit en dus ook geen enkel voorstel. De regiegroep moest daarom zelf met een voorstel komen dat is goedgekeurd door het management team.

Na een half jaar is er een evaluatie geweest onder patienten, bezoekers en personeel. Op basis daarvan is er een nieuw voorstel goedgekeurd.

Er is nog geen evaluatie geweest. Maar de situatie is nu niet heel veel anders dan dat het oorspronkelijk was.

De oorspronkelijke situatie was een bezoekperiode van 15 tot 20 uur voor iedereen. In het eerste voorstel was alles open. Dit leidde tot incidenten mbt dronken bezoekers, het storen van patienten in meerpersoons kamers, het tegenwerken van personeel bij incidenten op de intensive care, etc. Het tweede voorstel was om bezoektijden te hebben van 14 tot 21 voor gewone bezoekers en van 7 tot 21 voor naasten. Verder is er de mogelijkheid voor naasten om een kamer te hebben of een slaapbank in het geval van sterfgevallen e.d.

Yvonne gaat mij sowieso de enquetevragen sturen. Verder gaat ze kijken of het mogelijk is om het evaluatierapport en de twee voorstellen op te sturen.

Op de stelling reageert ze met een 3.

A.3.3 Nieuwe richtlijnen

Uit de resultaten van Elsevier, het AD en eigen PTO's bleek dat het ziekenhuis niet goed scoorde op patienttevredenheid, ondanks dat ze kwalitatief erg goede behandelingen hadden. Door reorganisaties, een slechte financiele crisis, een wisselend bestuur, etc. is de aandacht weggedreven van die patienttevredenheid. Het nieuwe bestuur vond dat dit nu echt een speerpunt moest worden. Daartoe is er begonnen met dit project. […] is na een half jaar aangesteld als intermediair tussen de top van organisatie en de werkvloer, omdat de communicatie tussen deze twee lagen te stroef verliep. Ze is voorzitter van de regiegroep van het project.

De verschillende PTO's en feedback van patienten lieten zien dat bejegening en gastvrijheid om sommige afdelingen een probleem was. Daartoe heeft de regiegroep grove richtlijnen opgesteld over hoe ze verwachten dat de verschillende afdelingen dit doen. De afdelingen hebben zelf de vrijheid om hier invullen aan te geven en met initiatieven te komen.

Er zijn door de regiegroep kernwaarden opgesteld, die moeten leiden tot competenties voor het personeel. In het jaarplan is verder uitgewerkt hoe het project verder verloopt in de regiegroep en binnen de afdelingen. Het project zal eind 2012 na twee jaar beindigd worden, omdat het puur als doel had om bewustwording te creeren. Naast het opstellen van de competenties wordt er ook nagedacht over nieuwe manieren van verzamelen en analyseren van patientinformatie. De PTO's zijn afgeschaft en vervangen voor ansichtkaarten waarop patienten hun mening en suggestisch kunnen opschrijven. Dit wordt direct teruggekoppeld aan de desbetreffende afdeling. Helaas krijgt […] slechts een algemeen overzicht te zien, en ontbreekt er een totaalbeeld over de meningen, behoeften en suggesties. Daarnaast is er nog te weinig druk op de afdelingen om iets te doen met de resultaten uit de ansichtkaarten.

Een grote groep personen uit alle afdelingen zal binnenkort meedoen aan workshops, waarin simpele dingen geleerd worden en meer bewustzijn gecreerd wordt.

In de organisatie wordt het beeld van een ziekenhuis volgens de Fred Lee methode gehanteerd. Fred Lee vindt dat een ziekenhuis als een Disneypark moet zijn, waarbij alles een unieke en prettige belevenis moet zijn. Hij is langsgeweest om mensen te inspireren.

Op de stelling geeft […] een 1. Volgens de nieuwe bejegening en gastvrijheid wordt elke patient als uniek behandeld. Het personeel mag er niet vanuit gaan dat iedereen op dezelfde manier behandeld wilt worden. Een persoon moet behandeld worden zoals hij/zij behandeld wilt worden. Er zijn natuurlijk wel hier en daar punten die voor sommige patienten hetzelfde zijn.

[…] gaat mij opsturen:
- De notitie die het begin vormde van het project

- De sterrengids met daarin een artikel over het project
- Meerdere ansichtkaarten
- Een rapportage of enkele voorbeelden van antwoorden op de ansichtkaarten
- Een jaarplan van 2011 of 2012

A.3.4 Broodbuffetwagen

Zo'n 5 jaar geleden was er de trend in de media op het gebied van dieten om een idee aan te hangen van: Zien eten, doet eten. In die periode is men begonnen met het doen van allerlei onderzoeken en pilots naar de beste variant van de broodbuffetwagen die geimplementeerd werd in meer ziekenhuizen. Hiertoe zijn meerdere gesprekken, enquetes en tests gedaan naar het uiterlijk van de broodbuffetwagen, de invulling van de dienst en het menu.

Op dit moment worden nog steeds enquetes gedaan om het menu te varieren, in samenspraak met de dietiste.

De doel van het onderzoek was om patienten beter te laten eten en minder eten weg te gooien. Dit is beide gelukt.

De nieuwe service vereiste veel aanpassingen op organisatorisch gebied in de keuken, het personeel en de werktijden. Daarom duurde het zo lang dit aan te passen. Vanaf januari 2011 is het volledig ingevoerd.

Uit een recent PTO kwam niet naar voren dat men zeer tevreden is over de dienst.

De oplossing heeft verder geleid tot meer keuzevrijheid voor de patient in zijn/haar maaltijd. Op de stelling antwoord ze met een 5, aangezien het management bepaalt wat er op de wagen ligt. Bij de oude wijze lag deze waarde hoger.

Voor de warme maaltijd wordt er nog niet op dezelfde manier gewerkt. Dit heeft te maken met de organisatie (keuken en personeel) rond de warme maaltijd die daar niet op is ingesteld. Er wordt wel gekeken of dit in de toekomst mogelijk is. Wel heeft men besloten het assortiment van de warme maaltijd uit te breiden.

Er is een uitgebreid onderzoek geweest naar de beste oplossing, waarin ook veel informatie over patienten is gebruikt.

A.3.5 Aandacht voor tieners

Het project is begonnen in juni 2010. In met gesprekken met ouders en kinderen kwam er naar voren dat er binnen de groep tieners grote onvrede leefde. De tieners waren ontevreden over zaken als bejegening, privacy, faciliteiten en het cliniclowns project. De tieners vonden dat zij over het algemeen te kinderachtig werden benaderd door het personeel, dat zij recht hadden op meer privacy bij onderzoeken en behandeling en dat er te weinig materialen waren voor vermaak op de kinderafdeling.

Naar aanleiding hiervan is een groep MBO'ers in een stage opdracht aan het werk gezet om aanbevelingen te doen over de bejegening van deze groep. Zij hebben onderzoek gedaan in het ziekenhuis en ook onder gezonde tieners, en vervolgens aanbevelingen gedaan over de informatievoorziening, faciliteiten en andere zaken. De informatievoorziening is verbeterd door een specifieke informatiefolder te maken voor tieners. Verder is de privacy verbeterd door onderzoeken te verplaatsen naar locaties met meer privacy (dus niet achter dunne gordijntjes), de naam van de afdeling is veranderd in 'Kind en jeugd' en er is nieuw materiaal aangeschaft ter vermaak, zoals een tienerhoek, spellen en spelcomputers. Er is nog geen evaluatie geweest of de tevredenheid op de afdeling onder tieners gestegen is. Dit zal uiteindelijk gedaan worden in combinatie met een evaluatie over verbetering van de houdingsaspecten.

Vanaf 12 jaar hebben kinderen meer inspraak in de onderzoeken en behandeling die ze ontvangen.
Vanaf 16 jaar hebben kinderen de keuze tussen de afdeling 'Kind en jeugd' en de volwassenenafdelingen.

In recente gesprekken met medewerkers kwam naar voren dat er meer behoefte is naar onderzoek over de dagbesteding van tieners (omdat dat door het personeel ervaren wordt als erg passief) en over observatiemogelijkheden. In 2012 zal hier een project over opgestart worden.

Vanuit de dienst wordt er zoveel mogelijk rekening gehouden met het leveren van een dienst aan de tieners op maat. Iedere persoon is verschillend en daarom wordt er ingezet op een zo breed mogelijk pallet aan voorzieningen. Op de stelling werd dan ook door dhr. Van Steen gereageerd met een 0. Binnen het ziekenhuis heerst ook het doel om alles zo flexibel mogelijk te laten zijn, om daarmee diensten op maat te kunnen leveren.

[…] gaat mij per e-mail of per post documenten opsturen:
- Rapport over de gesprekken in juni 2010
- Rapport over de aanbevelingen van de MBO'ers
- Rapport over de verbeteringen

A.4 Samenvatting (Nederlands)

Ontwikkelingen in de Nederlandse zorgsector, zoals de invoering van een nieuw zorgverzekeringsysteem, zorgen ervoor dat zorgleveranciers moeten reageren op de toegenomen concurrentie en de veranderde vraag naar zorg. Het vermogen om effectief en efficiënt te innoveren wordt belangrijk. Daarnaast is de focus aan verschuiven van de kwaliteit van de zorg als concurrentiefactor, naar patiënttevredenheid. Vooral voor ziekenhuizen leidt dit tot uitdagingen.

Niet-medische innovatie is belangrijk voor zowel de kwaliteit van de zorg als voor patiënttevredenheid. Maar er is slechts beperkte kennis over de beste manieren voor niet-medische innovatie in ziekenhuizen. Het doel van dit onderzoek was de kennis over niet-medische innovatie manieren te vergroten door antwoord te geven op de volgende onderzoeksvraag: *Wat zijn de beste manieren voor niet-medische innovatie in Nederlandse ziekenhuizen die als doel heeft om patiënttevredenheid te vergroten.*

De beste manieren en relaties uit de literatuur over innovatie van diensten zijn gecombineerd in een “model voor de succesfactoren van innovatie van diensten”. Dit model is aangepast voor niet-medische innovatie door gebruik te maken van informatie uit praktijkvoorbeelden. De voorbeelden waren vijf niet-medische innovatie projecten in Nederlandse ziekenhuizen. Deze projecten hadden het gemeenschappelijke doel om patiënttevredenheid te vergroten. De bevindingen hebben geleid tot een “model voor de succesfactoren van niet-medische innovatie” voor Nederlandse ziekenhuizen. Het model beschrijft de succesfactoren, manieren, variabelen en relaties, en geeft zo een overzicht van de belangrijkste elementen in een niet-medische innovatie project.

Het ontwerp van het onderzoek heeft ervoor gezorgd dat beste manieren niet gevonden konden worden. Maar enkele veel gebruikte manieren voor niet-medische innovatie in Nederlandse ziekenhuizen werden wel gevonden, bijvoorbeeld het betrekken van een representatieve steekproef van de patiëntenpopulatie in het innovatie project, het gebruiken van informatie over patiënten uit alle beschikbare bronnen, en het creëren van een netwerk ziekenhuismanagers om zo de oplossing uit innovatie projecten te delen. Verder hebben de praktijkvoorbeelden steun laten zien voor de classificatie van het type dienst als modererende variabele. De variabele heeft invloed op het niet-medische innovatie proces, de dominante inhoud van de patiënt informatie die gebruikt wordt in het innovatie project en de mate van patiëntbetrokkenheid. Een belangrijk gevolg voor Nederlandse ziekenhuismanagers is dat ze moeten bepalen wat het type service is dat verbeterd wordt (klantbepaald/dienstdominante logica of leverancierbepaald/goederendominante logica).

Verder onderzoek moet zich richten op het uitbreiden en testen van het “model voor de succesfactoren van niet-medische innovatie” vanuit meerdere perspectieven: ‘Best practices, contingentie theorie en configuratie benadering’. Voor dit te doen, moeten de verschillende variabelen beter geoperationaliseerd worden. Information over succes moet beschikbaar zijn en practices, contingenties en configuraties moeten kwantitatief getest worden, waarbij alle andere variabelen hetzelfde zijn voor alle projecten. Het “model voor de succesfactoren van innovatie van diensten” moet aangepast worden voor andere (zorg)sectoren en landen.

A.5 Reflectie

Algemeen
Slechts weinig kennis uit de studie kwam terug in mijn onderzoek. Dit vind ik eigenlijk wel jammer, omdat ik het idee heb dat ik hierdoor in mijn studie veel zaken heb geleerd die ik nooit ga gebruiken bij toekomstige banen. Het kan ook niet anders omdat je als opleiding wel alle theorie wilt behandelen en vaardigheden wilt trainen. Hierdoor moet je breed blijven en niet diep.

Het niveau dat er van mij verwacht werd, was zoals ik had gedacht. Ik heb niet het idee dat mijn begeleiders mijn moesten sturen naar meer of minder diepgang.

Ik miste een sparringpartner in de vorm van iemand met ervaring op het onderwerp of een medestudent. Hierdoor kon ik niet in theoretische diepgang met iemand overleggen en bleef het wat op de oppervlak. Ik weet ook niet zo goed wie die rol op zich had moeten nemen.

Over het algemeen heb ik een gemengd gevoel over het afstudeeronderzoek. Ik ben blij dat het erop zit en heb het gevoel dat ik goed werk heb geleverd. Ik vind het alleen jammer dat ik geen sterke, interessante dingen heb gevonden voor Acsense B.V.

Opdracht
Ik vond het interessant om met dit onderwerp bezig te gaan, omdat ik daarmee een bijdrage lever aan 'de maatschappij'. Daarnaast is het een 'hot item' in het nieuws. Dit motiveert zeker.

Voorbereiding onderzoek
Met een algemene vraag vanuit ben ik aan de slag gegaan om te kijken waar ik onderzoek naar kon doen. Dit heeft geleid tot een onderzoeksplan.

Wat me tegen viel in deze fase is dat het heel lang duurde voordat ik mijn onderzoek helder had. Dit komt vooral doordat de vraag vanuit Acsense B.V. te vaag was. Het was me niet duidelijk waar zij exact naar opzoek waren. Daarnaast wist ik ook niet goed wat de UT van mij verwachtte. Ik was dus voor mijn gevoel voortdurend aan het zwerven in alle literatuur van onderwerp naar onderwerp. Hierdoor is het ook niet gelukt om een sterk geheel van literatuur te hebben op één specifiek onderwerp. Meerdere keren probeerde ik toch een nieuw onderzoeksvoorstel te schrijven, maar telkens kwam ik erachter dat het nog veel te breed was. Er bleven teveel vragen over. In de toekomst zou ik daarom een onderzoeksvraag willen hebben die concreter geformuleerd is.

Door me op een vraag te focussen ben ik op een gegeven moment toch in de goede richting gedreven. Belangrijk hierin was het gesprek met Cor van Luik. Hij gaf me aan dat service en patiënt tevredenheid toch wel wat onderbelicht zijn in ziekenhuizen. Ik denk dat in het vervolg gesprekken met ervaren managers en onderzoekers nodig zijn om een beeld te krijgen van de huidige stand van zaken op praktisch en theoretisch gebied. Het hebben van een goed netwerk is daarvoor noodzakelijk.

Ik vond het moeilijk om een balans te vinden tussen de praktische vraag van Acsense en de theoretische vragen van de UT. Uiteindelijk heb ik ervoor gekozen om de praktische behoefte van Acsense even opzij te zetten en mij te focussen op het wetenschappelijke onderzoek. Na de onderzoeksresultaten van dat onderzoek heb ik de vertaalslag gemaakt naar bruikbare resultaten. Ik had me graag wat meer willen focussen op Acsense, maar dan had ik nooit de wetenschappelijke onderbouwing gevonden die ik nodig had voor mijn onderzoek. Dit kon in mijn ogen dus niet anders.

Ik merk dat ik het toch wel heel fijn vind om na te denken over de opzet van een onderzoek en niet het uitvoeren ervan. In het vervolg moet een onderzoek daarom korter duren.

Onderzoek
In het onderzoek ben ik de literatuur in gedoken. Dat heb ik geanalyseerd en samengevat en vervolgens ben ik naar case studies gaan kijken. Ik heb daar interviews gehouden, documenten ontvangen en de data geanalyseerd.

Zoals eerder aangegeven was er veel onzekerheid in het onderzoek en waren er daardoor teveel onderwerpen om te bekijken. Hierdoor was het literatuuronderzoek wat ongestructureerd en ongepland. Dit vond ik vervelend. Daarnaast viel het me tegen dat een groot aantal artikelen niet bereikbaar waren via internet, zonder daar voor te moeten betalen. De UT moet zorgen dat er een abonnement komt op Emerald Insight. In de toekomst zal ik toch echt een concrete vraag moeten hebben, zodat ik ook heel gefocust en gepland kan zoeken naar literatuur.

Ondanks dat ik het houden van interviews niet vervelend vind, vond ik het moeilijk om personen te bellen en lastig te vallen met mijn vraag. Zeker omdat ik niet zeker was van mijn onderzoek. Ik miste die zekerheid echt wel. Verder viel het me op hoe slecht de ziekenhuizen bereikbaar zijn. Het viel me wel mee hoe lief iedereen was en hoe graag ze mee wilden werken. Verder viel het me mee hoe goed ik mijn onderzoek over kon brengen op de respondenten. Het houden van interviews viel me ook mee. Ik kon de interviews eenvoudig in de goede richting sturen. In het vervolg zal ik ermee rekening moeten houden dat mensen slecht bereikbaar zijn. Daarnaast heb ik ervaren dat de commerciële insteek van mijn ‘collega’ op veel meer weerstand stuitte. In de interviews is het belangrijk om goed te luisteren en de juiste sturende vragen te stellen. Deze moet je als interviewer voorbereiden.

Het analyseren van de data viel me tegen. Ik vond het moeilijk om me geconcentreerd vast te bijten in de data. Het is een langdurig proces en ik heb dit ervaren als erg vervelend. Daarnaast heb ik liever kwantitatieve data dan kwalitatieve data. Ik moet dus zorgen dat ik weet welke data ik ga ontvangen en hoe ik dat ga analyseren. Ik moet me er bewust van zijn dat het een lang en vervelend proces is.

Afronden onderzoek
Het schrijven van het eindrapport viel me tegen. Ik vond het moeilijk om vanuit mijn kennis en ervaring alles duidelijk op te schrijven voor de leek. Het is daarom belangrijk om voortdurend mijn verhaal te vertellen aan nieuwe leken of mijn hoofdstukken door te laten lezen. In het rapport moet een heldere structuur zijn waarbij je continu vertelt wat die is.

Begeleiding en communicatie met begeleiders
Ik ben over het algemeen blij met de hoeveelheid begeleiding die ik kreeg vanuit Raymond en Petra. De gesprekken hebben me zeker in de goede richting gestuurd, zonder me echt aan het handje te nemen. Johan heeft me zelfs meer vrijheid en vertrouwen gegeven. Uit de lage controle van zijn kant, sprak veel vertrouwen. Daarnaast hebben de gesprekken met hem mij gedwongen om zaken duidelijk en concreet te krijgen. Hier ben ik blij om en dit vond ik fijn. In de toekomst zal ik zeker weer proberen om de ruimte te krijgen mijn eigen richting te kunnen bepalen, maar regelmatig de voortgang te bespreken met mijn begeleiders.

Ik had graag wat meer begeleiding willen hebben in het opzetten van mijn onderzoek. Zowel door een concrete vraag, als door een continue dwang om concreet te zijn en door te gaan. Dit zwerven heeft me veel tijd gekost. In de toekomst moet ik daarom zorgen voor afspraken die wat korter op elkaar liggen. Als het onderzoek eenmaal loopt kan de frequentie lager worden.

Ik wist vooraf goed wat ik kon verwachten van al mijn begeleiders. Zij wisten denk ik ook goed wat ze van mij konden verwachten. Het uitspreken van deze verwachting is belangrijk voor vrijheid, vertrouwen en begrip.

Omgeving
Ik ben zeer blij dat ik ervoor heb gekozen om bij en voor een bedrijf mijn afstudeeropdracht te doen. Het geeft me de motivatie omdat iemand anders wat van mij verwacht, ik elke dag naar een plek kan en daarnaast mijn ideeën en gedachten kan sparren met de opdrachtgever en collega's. Daarnaast was het fijn om in een bedrijf te zitten dat ik interessant vind om zo te zien welke functies me liggen en welke dingen belangrijk zijn in een bedrijf, zonder me echt vast te leggen op één van die functies. Verder vond ik bij Acsense B.V. een ontzettend fijne werksfeer. Ik zou zeker adviseren aan studenten om een afstudeeropdracht te doen bij een klein bedrijf dat doet wat zij interessant vinden.

Het was heel moeilijk om me tijdens de voorbereiding in de zomer gemotiveerd te houden terwijl 'collega's' op vakantie waren en er dus niemand was om me gezelschap te houden. Daarnaast hielp de onzekerheid ook niet echt mee. Hierdoor ben ik regelmatig gedemotiveerd eerder naar huis gegaan. Het is dus belangrijk om in een omgeving te zitten waar gewerkt wordt.

Ontwikkelingen ten opzichte van bachelor afstudeeropdracht
Als ik mijn onderzoek nu vergelijk met de ontwikkelpunten uit mijn bachelor afstudeeropdracht dan zijn er een aantal positieve ontwikkelingen. Ik denk dat ik vooraf een heel goed beeld had van wat ik wilde en wat mijn begeleiders konden verwachten. Ook toen de verwachtingen iets bijgeschaafd moesten worden, gaf ik dat tijdelijk aan. Hierin heb ik zeker een ontwikkeling gemaakt ten opzichte van 1,5 jaar geleden.

Verder heb ik vooraf goed nagedacht over waar ik alle informatie vandaan zou halen en tijdig met de juiste personen contact op genomen. Het was duidelijk wanneer ik dingen aan zou leveren, wanneer de afspraken waren en waar men op moest beoordelen.

Tijdens het onderzoek ben ik wederom op gewezen dat ik consistent moest zijn in mijn termen. Dat is daarna verbeterd. Ik heb expliciet met een aantal leken gepraat over mijn onderzoek om zaken

helder te krijgen. Op andere momenten heb ik dit bewust vermeden, omdat ik dan nog in het denkproces zat. De planning van inleverdeadlines was uitdagend.

Op enkele momenten werd ik toch teveel afhankelijk van andere personen. Dit heb ik ervaren als erg vervelend. Helaas is dit niet altijd te voorkomen. In het vervolg kan ik er nog meer op letten om de regie in handen te hebben.

Zoals eerder aangegeven had ik in het begin iets meer feedback en begeleiding willen hebben. Hier zal ik in het vervolg om moeten vragen.

Tot slot was het goed geweest om vooraf persoonlijke onderzoeks- en ontwikkelingsdoelen op te stellen.

Twintig tips en ontwikkelpunten

1. Wees vanaf het begin consistent in je termen in de communicatie met anderen
2. Houdt de regie het hele proces in eigen handen
3. Zorg dat je in de voorbereiding op je onderzoek begeleiding en feedback krijgt vanuit de opdrachtgever en je begeleiders
4. Stel persoonlijke onderzoeks- en ontwikkelingsdoelen op zodat je zelf ook iets leert in het onderzoek en weet waarvoor je het doet
5. Zorg dat je een concrete vraag hebt vanuit je opdrachtgever
6. Duidelijk communiceren over wat men van jou verwacht en jij van hun stimuleert vrijheid, begrip en vertrouwen
7. Zorg voor een goed netwerk om snel inzicht te krijgen in de huidige stand van zaken op praktisch en theoretisch gebied
8. Het verzamelen van informatie moet gepland en gestroomlijnd verlopen, zodat die fase zo kort mogelijk is
9. Zorg dat je toegang hebt tot alle informatie die je wilt
10. Bereid interviews goed voor, vooral onderwerpen en sturende vragen
11. Plan de data analyse, houdt er rekening mee dat het een lang en vervelend proces is
12. Presenteer je verhaal vaak aan leken, hierdoor zorg je voor een heldere structuur en uitleg
13. Zorg voor een sparringpartner voor diepgang
14. Het hebben van vrijheid om je eigen onderzoek te bepalen is fijn en motiverend
15. Bespreek regelmatig de voortgang met je begeleiders
16. Doe je afstudeeropdracht bij een klein bedrijf waar de functie zijn die je interessant vindt
17. Zorg dat je in een omgeving zit waar andere mensen ook werken
18. Kies een onderwerp dat je echt interesseert en dat ook maatschappelijk ‘hot’ is
19. Maak duidelijke afspraken met je begeleiders
20. Plan uitdagende deadlines