

MASTER

Customer involvement in mobile service development an explorative case study of mobile service development at a Dutch food-retailer

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Eindhoven, summer 2009

**Customer involvement in mobile service
development**

**An explorative case study of mobile service
development at a Dutch food-retailer**

by
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Student identity number 0542427

in partial fulfilment of the requirements for the degree of

**Master of Science
in Innovation Management**

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Abstract

The thesis at hand is the fruit of a graduation project executed at the headquarters of a Dutch food retailer: Albert Heijn, Zaandam, the Netherlands. This graduation project was carried out as the conclusion of the Innovation Management Master's degree program at Eindhoven University of Technology's Technology Management faculty.

This explorative case study examines the development of new mobile services from a retail perspective. By means of 6 pilot projects and a literature study this research tries to provide insight, guidelines and learnings for the development of mobile services in a retail environment

Keywords: New Service Development, Mobile Service Development, Innovation, Retailing, Explorative Case study.

Acknowledgements

January 1997 I started working as a cashier at Albert Heijn 1256 in Nuenen. For no obvious reason, one customer mistreated me that first day and brought me to tears. At that moment I decided that one day I would not “sit there” but have a degree and would work at the headquarters. For inspiring me to start my studies, I owe much gratitude to this anonymous customer. Ten years later I was offered the chance to work at the Innovation Department.

For over a decade I worked at this company and I look back on that time with much delight. My happiest memories are of the Saturday mornings when I started at 6:45 to work at the Deli Department. I would like to thank all my colleagues for their pleasant cooperation, support and joy during all these years and special thanks goes out to my colleague Mr. J. Baars.

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Little did I know that first day that ten that years later I would be married, live in China and lead a life I could not have imagined in any way. I am very grateful for the chances I have been given in this life. The moral and practical support from my parents, family (in law), (foreign) friends, (German) neighbors, my Chinese teachers and Mrs. Hu has been priceless. If I could thank a country it would be China for challenging me and teaching me invaluable life lessons. This thesis could also not have been finished without my dear friends Gino and Rianne. Finally I am greatly indebted to my beloved husband for his unconditional support in every possible way and his ability to see past all boundaries. Thank you for being you and letting me be me.

Management Summary

Under influence of social, demographic and economic changes, the retailing landscape has changed dramatically over the past decades (Cox & Brittain, 2004). Changes in the retailing landscape have served as incubators for the development of new services. For example, nowadays small-scale community stores have been replaced by superstores or online stores and customers can shop “anything, anywhere, anytime”. Mobile services fulfill the need for flexibility and mobile services are gaining popularity throughout our daily lives but this special type of services is one of the least understood topics of the service literature. Moreover, mobile service development (MSD) in a food-retailing context has hardly been studied at all. Since MSD is in infancy, little is known about the determinants of successful mobile service development. Based upon a literature review and explorative case studies within a Dutch food retailer, the thesis at hand attempts to identify the determinants for successful mobile services in a grocery context. Based upon a literature review the following research questions are proposed: *“What are the determinants of successful mobile service development in a retail environment?”* and *“What is the influence of customer involvement on the effectiveness of mobile service development in a retail environment?”*.

Mobile service innovations are defined as “any new service that is delivered with the support of wireless devices” (Blazevic, Lievens and Klein, 2003). Mobile services are a special service type because of its inherent features: ubiquity, personalization, localization and convenience (Clarke, 2003). Due to these special characteristics, MSD faces not only typical new service development issues, but also some particular challenges of its own and therefore MSD needs to be managed differently than traditional service innovations. Because of this, the development of mobile services may face many challenges (Siau, Lim, and Shen, 2001; Siau & Shen, 2003; Abrahamsen et al., 2004).

During the 80’s several models were developed to manage and support the New Service Development process (Fitzsimmons & Fitzsimmons, 2000). A widely used approach to support the service innovation process is the stage-gate model. This model divides the innovation process into five stages, each

consisting of pre described activities. At the entrance of each stage is a gate, hence the stage-gate model, with a go or no-go check point (Cooper, 2002), see figure 1.

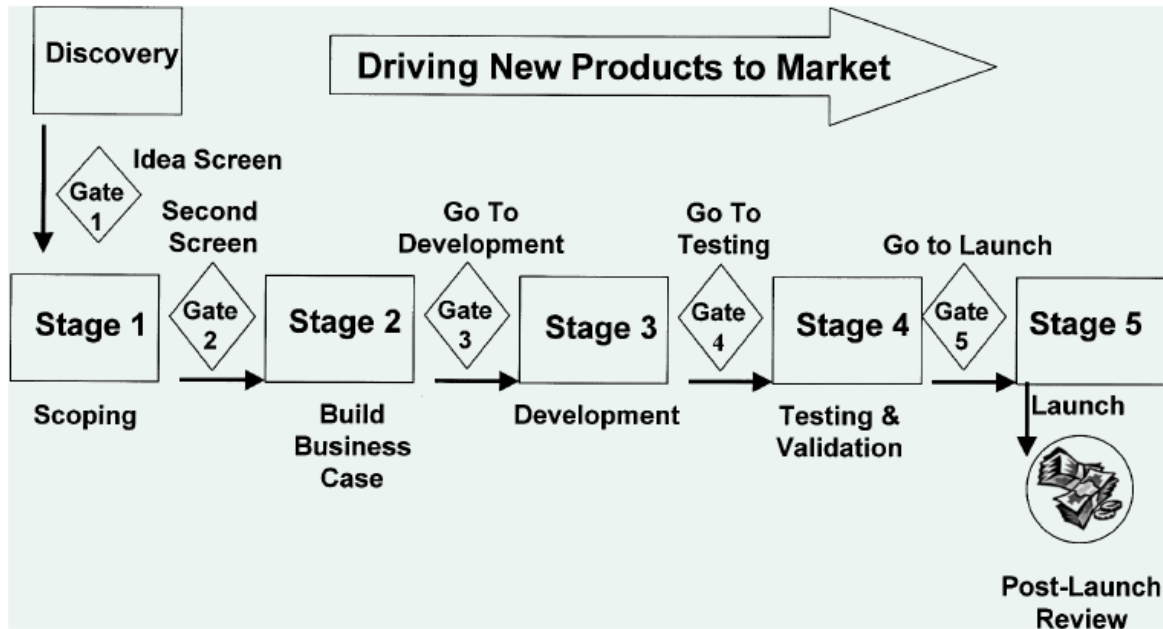


Fig. 1 The stage gate process, (Cooper et al., 2002)

Besides governance models, involving customers in service development is believed to overcome quality issues, realize added value and thus create more successful services. It is suggested that the same holds for customer participation in MSD (Matthing et al., 2004). Edelman et al. (2006) go even further and argue that for these services it is even more important to understand user needs than traditional services and this requires new user integration mechanisms. Although, involving customers might not directly solve all problems and even create a few of its own, it seems that customer involvement is crucial for successful mobile services. Alam (2002), is one of the first scholars to investigate user involvement throughout the different development stages. He concluded that customer involvement is intense in the early stages of the service development process and stresses the need for active participation in this phase because “powerful new service ideas need to be generated with user contacts and interaction” (Alam & Perry, 2002; Alam, 2002).

Six mobile service pilots within Albert Heijn are assessed on the project’s success, adherence to the proposed model, the modes and intensity of customer involvement. One of the most striking findings is

the lack of customer involvement in the early stages of the MSD process. Another finding is a relationship between successful service development and following the development model and incorporating customers within this process. Pilots which did not follow the model and / or had no or little customer involvement were found to be less successful. However, due to the explorative nature and other limitations of this research, more research is needed to confirm these relationships. Additionally, other relevant factors were found to be likely to influence successful MSD as well. Organizational factors, such as adequate communication between different departments, proper organization of the innovation process and specific user characteristics (e.g. sensitivity to promotions) are expected to additionally determine successful MSD and must be addressed accordingly.

Based upon the literature and the results from the pilots, it is suggested that more timely and abundant customer involvement in combination with following the proposed model will increase the chances of successful mobile services. To ensure customer involvement throughout the MSD process, an adjusted stage-gate model with an extension for the first two stages is proposed (see dashes square in fig. 2).

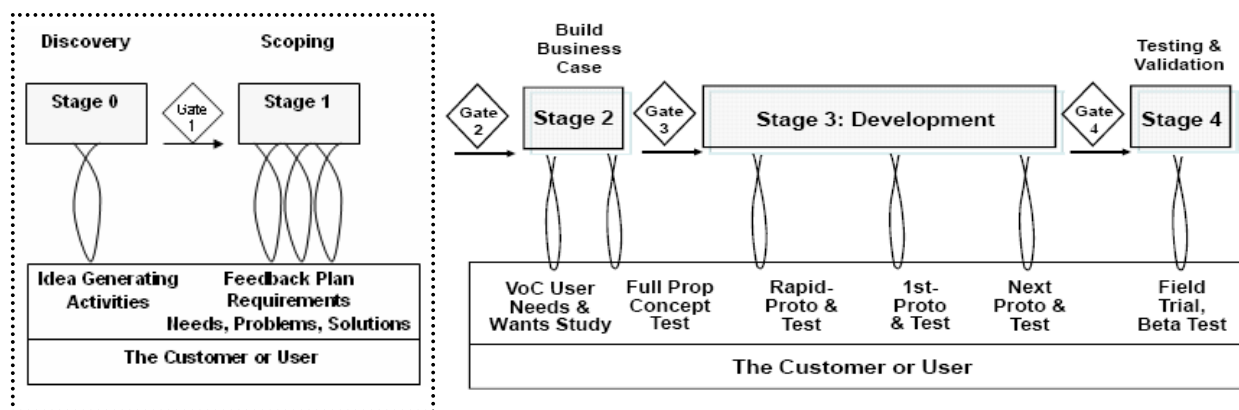


Fig.2 Extended spiral development model based upon (Cooper, 2006)

The spiral model, a variation on the original stage-gate model, assures customer involvement throughout the development process in an iterative way and is extended to be more suitable for the development of mobile services where customer involvement is crucial, particularly in the early stages of MSD.

Index

Abstract	I
Acknowledgements	II
Management Summary	III
Index	VI
Chapter 1 Company Profile	1
1.1 Context	1
1.2 Company Introduction	1
1.3 Innovation	2
1.4 Thesis Outline	3
Chapter 2 Introduction	5
2.1 Mobile Services trends	5
2.2 Mobile Service Development	6
2.3 Customer Involvement in Mobile Service Development	8
2.4 Research Questions	9
Chapter 3 Mobile Service Development	12
3.1 Mobile Services	12
3.2 Service Development Models	12
3.3 The Stage Gate Model	16
3.4 Challenges in Mobile Service Development	18
3.5.1 Organizational Challenges	18
3.5.2 User Challenges	19
3.5.3 Technological Challenges	19
Chapter 4 Customer Involvement in Service Development	21
4.1 Customer Involvement	21
4.2 Rationale for Customer Involvement in Service Development	22
4.3 Customer Involvement in Different Stages	23
4.4 Customer involvement in the Stage Gate model	25
5.1 Research Methodology and limitations	28
5.2 Pilot studies at Albert Heijn	29
5.3 Organization	30
Chapter 6 The Pilots	32
6.1 Pluk 1	32
6.1.1 Pilot Introduction and Setup	32
6.1.2 Customer involvement	33
6.1.3 Result and other relevant aspects	33
6.2 PLUK 2	34
6.2.1 Pilot Introduction and Setup	34
6.2.2 Customer involvement	35
6.2.3 Result and other relevant aspects	35
6.3 PLUK 3	38
6.3.1 Pilot Introduction and Setup	38
6.3.2 Result and other relevant aspects	38
6.4 Mobile scanning “AMC”	39
6.4.1 Pilot Introduction and Setup	39
6.4.2 Customer involvement	39
6.4.3 Result and other relevant aspects	40
6.5 Mobile paying “Koopgoot”	41
6.5.1 Introduction	41

6.5.2 Customer involvement.....	41
6.5.3 Result and other relevant aspects.....	42
6.6 Self scan project “Tot ziens”	43
6.6.1 Introduction	43
6.6.2 Customer involvement.....	44
6.6.3 Result and other relevant aspects.....	44
Chapter 7 Results and Discussion	47
7.1 Results	47
7.1.1 Model Adherence and Pilot Success.	47
7.1.2 Customer Involvement Pilots.....	49
7.2 Other Relevant Factors	52
7.2.1 Culture: not an innovative mindset.....	52
7.2.2 Fear of the unknown.....	52
7.2.3 Organization of Innovation.....	53
7.2.4 User characteristics	53
7.3 Discussion.....	53
Chapter 8 Conclusion	55
8.1 Conclusion	55
8.2 Vision and Implications	55
8.3 Limitations	60
References.....	61
Links.....	65
Appendix I History, Strategy and Store Formats.....	66
AI.1 Historical background.....	66
AI.2 Strategy	66
AI.3 Store Formats.....	68
Appendix II Mobile Services	69
II.1 What is Mobile Service	69
II.2 Historical perspective.....	70
II.3 Characteristics of mobile services.....	71
Appendix III The Innovation Process at Albert Heijn.....	74
III.1 “Why is it that Albert Heijn is so innovative”?	74
III.2 The organization of the Innovation Process.....	77
III.3 The Innovation Café	79
Appendix IV PLUK in Article Dutch Newspaper.....	81

Chapter 1 Company Profile

This chapter introduces the reader to the research context, the company in which the research was carried out and the subject of this thesis: mobile service development.

1.1 Context

Since the early 90's the use of technology based services has increased rapidly (Meuter et al., 2000; Dabholkar & Bagozzi, 2002; Van Birgelen, De Jong, and de Ruyter, 2006). This trend can also be recognized in the retail industry, online shopping services and self-scan are notable examples. A more recent development within the grocery industry is the use of *mobile* services, for instance using a mobile phone for paying groceries [8, 27]. All these developments go hand in hand with the tendency to involve customers and offer more personalized services, therefore more and more retailers are experimenting with mobile services (Krafft & Mantrala, 2006), [26]. Unfortunately the road to success is paved with failure and few service introductions are successful. Since mobile service development is in infancy, little is known about the determinants of successful mobile service development (Vesa, 2005; Heinonen & Pura, 2006). Also the development of services in a grocery context has hardly been studied before. That is why this research attempts to enhance the understanding of mobile service development in a food-retailing context. To achieve this, several mobile service pilot projects within a Dutch food-retailer are examined based upon relevant factors and a guiding service development framework, resulting from extensive literature study. The next two paragraphs introduce the company in which the research was performed and discuss its position on innovation and service development.

1.2 Company Introduction

Albert Heijn is a 100% Ahold owned company and is the oldest and at present the largest food retailer in the Netherlands having over 800 stores, employing 62.000 people and a 31.1% market share in 2008 in the Netherlands (Ruigrok, 2007), [1]. Ahold is one of the world's largest food retailers with supermarkets based in Europe and the US and is listed on the Dutch stock market. In 1973 Ahold emerged from Albert Heijn and was created as a holding company to cater for the expansion of the retail company, with at present employing over 200.000 people globally [1]. Due to the crisis at the

holding company, Albert Heijn started to implement radical transformations throughout its businesses in 2003 [1]. These changes included changes in the pricing, product and management strategy. The past two decades Albert Heijn, had been regarded by consumers as an expensive and not very family oriented retailer. In reaction to this market perception, prices were lowered and the private label portfolio was renewed and expanded, attracting new consumers. During the “price war”, initiated by Albert Heijn in 2003, the strategic focus shifted from merely service oriented to being also more price oriented, but the primary strategy remained customer centered. More detailed information about Albert Heijn’s strategy and organization of innovation can respectively be found in Appendix I and II.

1.3 Innovation

As stated the company’s customer centered strategy has an impact on the business strategy and also influences innovation and the way this is organized. As part of the differentiation strategy, the innovation process itself and more specific, the development of new services gained more attention within the organization (See App. I). In the past most innovations were focused on the removal of “dissatisfiers” for customers e.g. reducing checkout lines by diminishing the time of payment transaction. Today the innovation focus is on adding satisfiers, innovations that have added value to customers. According to Schumpeter (1939) innovation is the commercial application or adoption of an invention (the origination of new ideas). When innovation is discussed throughout this thesis, inventions transformed to marketable products and services are intended. This is in line with Albert Heijn’s vision on *innovation*. Additionally when innovation is discussed one must keep the objective and *raison d’être* of these innovations in mind: the customer. Customer centered innovation is different than for instance innovations that lead to a cost reduction in the logistic process. Very often these customer centered innovations are *service* innovations, because service innovations visibly influence the customers’ shopping experience in contrast to logistic innovations that merely take place behind the scenes. Innovation at Albert Heijn has nothing to do with invention, because there is no in-house research and development department. Preferably innovations are “readymade” and make use of mature technologies. Innovation is technology-push driven and can be high-tech as well as low-tech. Innovation can also be market pull based innovation. Besides “customer intimacy”, innovation is a

very important part of the company's strategy and is used as a tool to create and embed long lasting customer relationships and enhance customer satisfaction. "Price is an important tool to lure customers, it's true, but it's also essential for a market leader to keep developing and to be at the forefront of new initiatives" [1].

Mobile service innovations are an example of such new initiatives and unite Albert Heijn's "customer centered" strategy with being "innovative". Mobile services are services that use mobile technology (e.g. Wi-Fi) and or mobile devices (e.g. a cell phone) and are new to this industry. The most interesting aspect of these services is "mobility". Services can be delivered without the physical presence of a customer and are not bound by place and time. "Mobile Lifestyle" is chosen as one of the three innovation themes (the others being "Health", "Easy Shopping") that each address specific customer needs and market trends. The "Mobile lifestyle" theme is concerned with the increased interest from customers and companies in mobility and mobile technology and is an answer to how this affects our daily lives and changes the way we live and work. The majority of these pilots focuses on mobile information services, mobile payment services and mobile scanning services and is believed to create new business opportunities and increase customer satisfaction. The past two years there have been several promising mobile service pilots at Albert Heijn, for instance the nationwide implementation of self-scan. However this project was not without struggle and a pilot in which customers "forced" to use self scan was rolled back [1, 2]. Only 10% to 20% of all ideas will go through the whole service development process of which only a fraction will "see the light" and will be introduced to customers. The purpose of this thesis is to gain deeper understanding of the service development process at Albert Heijn and more specific investigate the role of customers as a determinant for successful mobile services.

1.4 Thesis Outline

This thesis is an explorative case study on the development of mobile services in a retail context, attempting to bring a relation to light between successful Mobile Service Development (hereafter MSD) and:

- following a proper development model

- involving customers in the right manner and at the right time
- possibly other determinants

In this first chapter, the reader has been introduced to the company in which this research was carried out. Chapter 2 introduces the research topic and research questions to the reader. Chapter 3 will then place mobile services in a literary framework, models to successfully manage the MSD process are brought forward, and a model to successfully involve customers during MSD is chosen. Chapter 4 continues with a review of the existing literature on customer involvement during service development. Successively in Chapter 5 the research design and methodology are dealt with. Chapter 6 gives for each pilot the set up and the results. Chapter 7 summarizes the results followed by a discussion. The answer to the main research questions can be found in Chapter 8. This final chapter ends with suggestions for successful MSD, discusses implications and gives suggestions for future research.

Chapter 2 Introduction

Here, the trends and status quo of the industry will be covered and highlights of recent developments within the service literature will be shared. This chapter will conclude with the research questions, rationale and motivation.

2.1 Mobile Services trends

As mentioned in the first chapter, the rise of mobile services is an interesting development within service development. Mobile services are a new type of service delivery that uses wireless technology like WLAN, RFID, Bluetooth (Kleinen et al., 2007). Over the past three decades, many first fixed services became mobile, for instance telephones, payment terminals and internet. This rapid development of mobile computing creates new opportunities for companies, because they can make processes faster or more efficient and equally important create a more pleasant shopping experience for consumers. An interesting development is the increasing use of mobile services in companies other than the more obvious ICT or telecom industry. For example the entertainment, retailing and banking industry show an increased interest in mobile services or are extending their existing services with mobile technology [3, 4, 5]. Mobility also creates new ways for companies to interact with the customer and an increased use of mobile phones could help retailers to meet the customers demand for more involvement (interaction between the service provider and the customer) and a more personalized shopping experience, due to the special characteristics of “mobility.” Besides that, the use of mobile phones is regarded as a potentially highly effective platform to support retailing because of technological advances (others than mobility) and an increase of users (Steele and Tao, 2006). Therefore retailers are increasingly developing and experimenting with mobile services. So, even in a traditionally non high-tech intensive industry like the food-retailing industry, technology based services are also becoming more common. In conclusion mobility is “hot” and interesting for further examination.

2.2 Mobile Service Development

The past years the mobile phone evolved from a simple communication device to a device that could easily replace a desktop computer. More functionality like gaming, internet, listening to music, taking pictures, organizing and scheduling functions and so on, creates endless business opportunities (Siau, Lim & Shen, 2001). Also, customers are more and more depending on being on-line or connected at all times because of work, shopping or entertainment and are no longer using their mobiles solely as a communication device. Before advancing to the rationale and framework for Mobile Service Development the “mobile services” and “mobile service development” need to be defined.

In the service literature, mobile service innovations are defined as “any new services that are delivered with the support of wireless devices” (Blazevic, Lievens and Klein, 2003). According to Alahuhta et al. (2005: p.67) mobile service refers to “the use of a mobile terminal, such as mobile phones or personal digital assistants (PDA), and mobile telecommunication network for delivering an electronic service for the customer”. Although the majority of the current mobile service literature does concentrate on mobile phones, these services are not restricted to phones only. Also when mobile services are discussed, non traditional interpersonal communication services (not a phone call to a friend) are intended, for example: inventory management-, product location-, tracking-, shopping-, or other information services, each service delivering specific information depending on the receiver’s location, needs, and time. Therefore, when a “mobile service” is used, this term here refers to the service via mobile devices that make use of information communication technology in order to improve shopping quality, capabilities and the overall experience by means of any wireless device that customers can use in a retail environment.

According to Edvardsson, (2006; p.2) Service development refers to “*further development of existing services in a company, new services for the company, but known to others in the market, and completely new services or services that are “new to the world”*”. Or as Fitzsimmons & Fitzsimmons state, “*an offering not previously available to customers that results from the addition of offerings, radical changes in the service delivery process, or incremental improvements to existing service packages or delivery processes hat customers perceive as being new*” (2000; p.2). An example of multi channel services in the light of the thesis subject is the possibility for customers to choose

between using a mobile phone, traditional checkout service or self-scan service for their payments. When Mobile Service Development is used, these definitions suffice when a “mobile” component is added and should be kept in mind.

Now the concept of MSD is defined, the question remains: “why do companies develop mobile services?”. To answer this question it is useful to look at previous service literature. Hill (1977) states in his famous article “On Goods and Services” that services are equally important as goods. Thirty years later this point of view has shifted from being equally important to being more important, where Western economies depend for the larger part of their national income on the sales of services (De Jong & Vermeulen, 2003; Nijssen, Hillebrand, Vermeulen and Kemp, 2006). Dawn Iacobucci summarizes it very clearly after an intensive review of the services marketing literature: “services are important and different” (Iacobucci, 1998). Not only are services “important”, but according to Storey and Easingwood (1999), there are also four clear advantages for companies that focus on the development of new services. The first benefit is that it can enhance the profitability of existing offerings (e.g. cost saving, increasing productivity, increase speed etc. Alcock & Millard, 2006). The second and third benefits are the possibility of attracting new customers to the company and improving the loyalty of existing customers through the development of new services (Alcock & Millard, 2006). The fourth advantage is the possibility to open markets of opportunity. The introduction or differentiation of new products and services can create value for existing customers and attract new customers, creating a competitive advantage over other companies (Menor et al., 2002; Edvardsson et al., 2006; Alcock & Millard, 2006).

The same holds for companies that develop new *mobile* services. The development of mobile services holds promising business opportunities for companies and therefore companies have mainly economic motives to develop mobile services. For example, increased profitability and / or lower costs, larger market share or greater production (Siau et al., 2001) and thus creating competitive advantage provide a rationale for mobile service development. Now consumers are becoming increasingly familiar with technology, it is easier for companies to introduce new mobile services.

Reasons for customers to use new services or in other words, “additional channels” are: more service outputs, convenience, time savings and reliability (Birgelen et al., 2006). Additionally, the

development of new mobile services gives customers different choices. For instance, online banking is no longer restricted to a computer and learning a new language is now possible via podcasts automatically send to your phone. Customers are more flexible in the way they use their services but, also companies can benefit because they have new means to attract customers and expand their business (Siau et al., 2001).

However, the essence of developing mobile services boils down to the ability of reaching customers (and companies) regardless of their location, and deliver the right information at the right place and right time (Siau et al., 2001). Most people carry their phones with them all the time and can reach whoever they want anywhere and anytime. This interestingly works the other way around as well and not for pure communication purposes only. From a business point of view, customers can also be reached anyplace and anytime, for example for marketing purposes. For instance, via a mobile phone it is possible for customers to receive environment dependant content. To understand better why mobile services gain popularity and what motivates companies to develop these services, one could look at the special features of mobiles services which make their development worthwhile, but challenging due to its inherent special characteristic. Based upon these characteristics, that each provides different advantages, the mobility concept is fully explained in Appendix III.

2.3 Customer Involvement in Mobile Service Development

A recent trend in the service literature that attracts increasing attention from both scholars and practitioners is the role of customers in the New Service Development (NSD) process. Although the general attitude towards customer involvement in the developing process seems to be positive and optimistic, some controversy still remains.

The general assumption is that involving customers in the service development process is important and beneficial. According to Fitzsimmons & Fitzsimmons (2000) successful NSD depends upon true understanding of the needs of customers and the ability to anticipate on future needs. Market fit, or the correct understanding of the needs of customers is a prerequisite for the development of new services (Edvardsson et al., 2006). One of the problems that occur with NSD is that it is challenging to find out true customer needs and to measure the success. One of the reasons is that it is challenging to usefully

involve customers during NSD is the difficulty to imagine a future product or service. Also customer needs change very quickly which also complicates the prediction and understanding and as a consequence the fulfillment of those needs. Literature therefore suggests that successful service development is one that involves customers throughout the process. (Alam and Perry, 2002; Matthing, Kristensson, Gustafsson, and Parasuraman, 2005; Edvardsson et al., 2006). Another problem is that the more familiarity one has with the domain the more difficult it is to think out of the box (Edvardsson et al., 2006). These problems can hinder successful NSD and even though there is a growing body of literature on customer involvement in NSD, in general little research has been carried out on the role of customers in mobile service development.

2.4 Research Questions

Mobile services are a relatively new subject within the service literature (Heinonen & Pura, 2006) and little research has been carried out on the development of mobile services (Blazevic et al., 2003). The literature mainly focuses on traditional interfaces (Meuter et al., 2000) or on New Product Development (Fitzsimmons & Fitzsimmons, 2000) and NSD gains little attention in general (Menor, Taitkonda and Sampson, 2002; Bullinger, Fahrnich and Meiren, 2003; Alam & Perry, 2002; Nijssen et al., 2006). In spite of the fact that there has been conducted valuable research on MSD in the banking sector, little has been written on MSD in a retail context (de Jong & Vermeulen, 2003). Especially research on the success factors for mobile service adoption is needed. Kleijnen, Wetzels, and de Ruyter (2003) who examined the adoption of a mobile service in a banking context, state that mobile commerce is the “new service frontier of the millennium”, but more investigation of mobile services is recommended. Another interesting aspect is the inherent special characteristics of mobile services, for instance the ubiquity characteristic or “anywhere anytime” principle. For an overview and explanation of mobile services and its inherent characteristics, see Appendix II. These mobile characteristics call for a different approach when developing services. This aspect has been hardly studied and creates new challenges compared to the development of other services (Vesa, 2005).

Studies showed that customer interacting and participation in the development process could significantly improve NSD performance (Alam & Perry, 2002). Thus, it is important to thoroughly

understand the concept of customer involvement. However, it might be problematic to usefully involve customers during NSD. Also customers need to be “managed” in a different manner than company employees or business partners. The question is how one can successfully involve customers to anticipate on the use of a new service and evaluate that service? So, more research is needed on customer involvement in the service literature in general (Edvardsson et al., 2006) and mobile service development particularly, because this could lead to more successful service innovations (Alam & Perry, 2002).

Changes in consumer behavior (demographic, social and economic changes), technology (use of computers and mobile phones) and competition (price war) influence day to day business and these changes call for a need to continuously adopt new strategies in order to stay “in business”. A recent survey by Rabobank corporate clients in association with the Erasmus Food Management Industry (EFMI) shows that in order to continue a sustainable growth the traditional business model of grocery stores needs to be redefined. This article holds a clear message: “Supermarkets need to think in solutions rather than products” [6].

Because mobile services are a relatively new type of services with its inherent special characteristics, the development of mobile services is an attractive and worthwhile area for research. Besides being novel, the rapid growth and promising opportunities for business and consumers make this research a valuable contribution. However for novel research area’s there often is no explicit guidance or framework. This assumption was supported by a thorough examination of the current body of literature and discloses the need for further investigation (Tidd & Hull, 2003). This thesis also contributes to existing research because MSD will be approached from a different perspective than the current research, namely a food retailing and customer involvement perspective. In conclusion, all these questions provide a rationale for more extensive inquiry on the development of new mobile services.

Based upon a literature study and my personal experience for 14 years with customers and my 1 year internship at the headquarters, it is proposed that due to the different nature of the end-users (e.g. customers are particularly sensitive to financial and efficiency benefits), developers have to take these special features into account in their mobile service design. Besides this, the nature of the products (or

industry) and the accompanying services call for a different management strategy. Based upon the literature study it is expected that as a result of the special characteristics of MSD, the different features of the user and the special characteristics of this industry, a different management approach is needed. The purpose of this research is to give a practical and theoretical framework in order to better understand the conditions for successful MSD. Based on several case studies of mobile service development pilots at Albert Heijn these conditions are identified and compared with the existing literature and a model will be given to support future MSD.

This study showed there is a gap in the service innovation field regarding MSD. Particularly, the role of the customer during MSD is underexposed in the literature and lacks a guiding framework. Therefore I will focus this research from a theoretical perspective as well as more practical or empirical perspective to come to a proposal for a suitable model. Specifically, I will look into what role the customer plays during different stages in the development of successful mobile services and how this influences the NSD process and success of the service. Hence, the following research questions are proposed.

Table 2.1 Research Questions

- | |
|---|
| <ul style="list-style-type: none">- <i>What are the determinants of successful mobile service development in a retail environment?</i>- <i>What is the influence of customer involvement on the effectiveness of mobile service development in a retail environment?</i> |
|---|

Chapter 3 Mobile Service Development

This chapter analyses different management models, proposes a preferred model and discusses and factors that might hinder successful mobile service development.

3.1 Mobile Services

Mobile services are a special service type because of its inherent features. Although the literature is scarce the following features are often cited: ubiquity, personalization, localization and convenience (Clarke, 2003). Ubiquity refers to the ability to receive information anywhere and anytime. Personalization can be explained as the ability to customize information to the level of an individual customer. Convenience can be expressed as the ability to save time, money, energy and so on. Localization can be interpreted as the ability to provide location based services or in other words using the users' geographical location to adapt to specific customer needs. These characteristics together define the concept of mobility. Although the benefits arriving from these special features are obvious and mobile services are promising, the growth of these services has not met up to expectations (Alahuhta et al., 2005; Carlsson, 2006; Kleijnen et al, 2007). One reason for this moderate success is the inability to offer value adding services (Alahuhta et al., 2005; Kleijnen et al., 2007). Involving customers during MSD might result in more successful services and exploration of customer involvement in MSD is valuable. The remainder of this chapter describes governance models for MSD and is followed by Chapter 4 that will look more closely into customer involvement during the MSD process.

3.2 Service Development Models

As stated in chapter 2, an obvious problem with the development of products and services, or innovation in general, is how to manage the unthinkable in advance? Therefore during the 80's several models were developed to manage the "unthinkable" in advance or in other word: manage and support the NSD process (Fitzsimmons & Fitzsimmons, 2000). These models can be categorized in three types:

- 1) **Partial Models**: concerned with only a portion of the NSD process, e.g. Shostack, 1984.

- 2) **Translation Models:** based upon NPD model by Booz et al. 1982, e.g. Bowers, 1985; 1987; 1989; 1992.
- 3) **Comprehensive Models:** represent NSD process holistically e.g. Scheuing and Johnson, 1989; Cooper, 1990.

Although originally based upon NPD, Bowers (1989) was one of the first researchers to introduce a model aimed at supporting service development activities. The model outlines different phases and activities during NSD and aims to manage the different phases of the service development process to increase its efficiency and effectiveness. In this model each phase has a series of tasks that needs to be completed before proceeding to the next one.

The model starts with the development of a “Business Strategy”, a long-term strategic direction for the company, and is followed by a “New Service Strategy”, a plan that outlines the type of new services to be developed (Bowers, 1989). The third stage is the “Idea Generation”, a formal process for soliciting ideas for new services, which is followed by the “Concept Development and Evaluation” stage, the refining and expanding the concept of the new service, and “Business Analysis” stage where the feasibility and profitability is determined (Bowers, 1989). In the sixth stage, the “Service Development and Evaluation”, establishing standards for performance of the new service, takes place. In stage 7 “Market Testing”, testing marketing mix variables and the service itself, occurs. Finally the service will be introduced to the public in the eighth stage: “Commercialization”. Over time this model was adapted and extended by other scholars, but the majority is still based upon the model of Booz Alan and Hamilton (1982) i.e. BAH-model (Trott, 2005).

The models from Alam (2002) and Gounaris, Papastathopoulou, and Avlonitis (2003), see fig. 3.3, are two examples that summarize the current research on typical NSD stages and suggest discerning respectively 10 and 5 sequential phases, which show many overlapping phases. Another widely used approach to support the service innovation process is the stage-gate model. This model divides the innovation process into five stages, each consisting of pre described activities. At the entrance of each stage is a gate, hence the stage-gate model, with a go or cancel check point (Cooper, Edgett, and Kleinschmidt, 2002), see figure 3.1.

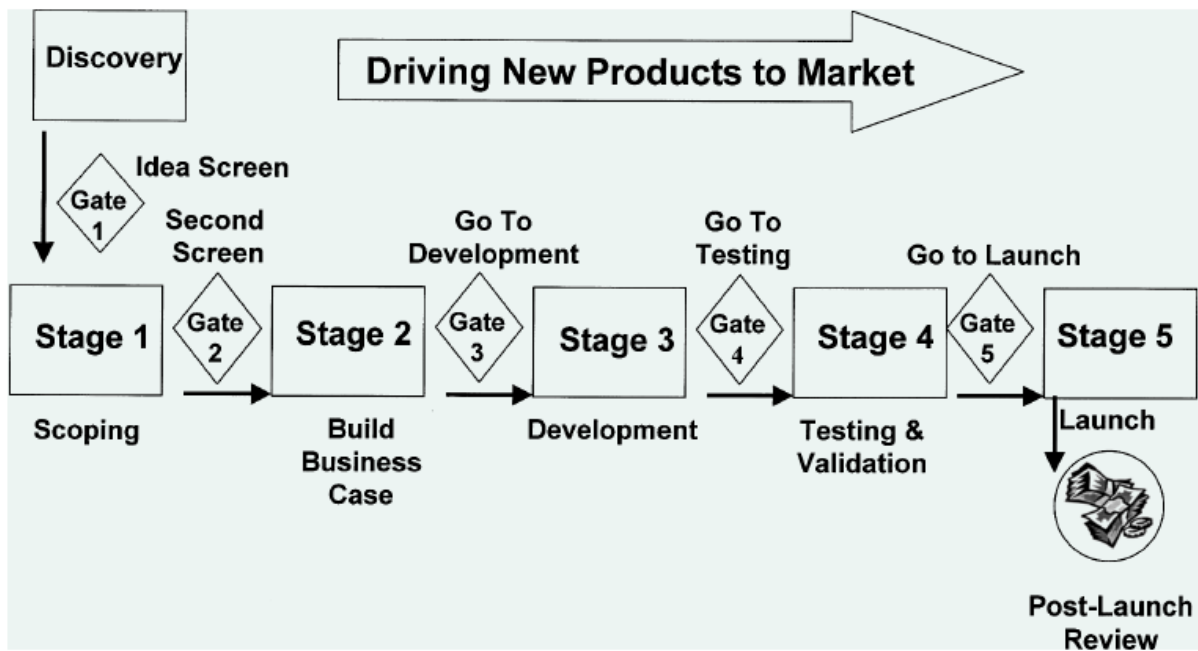


Fig. 3.1 The stage gate process, (Cooper et al., 2002)

In the “*Discovery*” stage, opportunity discovery and product or service ideas generation activities are carried out and it is followed by the *Scoping* stage in which a quick and inexpensive assessment of the technical merits of the project and its market prospects takes place (Cooper, 2000; 2002). The “*Build Business Case*” stage is a critical stage and is the stage that “makes or breaks” the project. Technical, marketing and business feasibility are assessed resulting in a business case (Cooper, 2000; 2002). In the “*Development*” stage, the concretion of the work from previous stages and plans are translated into deliverables and the actual design of the product or service takes place. In the “*Testing and Validation*” stage the verification and validation of the product or service and its marketing and production happens (Cooper, 2000; 2002). The final “*Launch*” stage is where the full commercialization occurs (Cooper, 2000; 2002). Paragraph 3.4 provides a more detailed description of the stage gate model and the activities that could involve customers throughout the different stages of this model.

The models from Alam, (2002), Cooper (2002) and Gounaris et al. (2003) are all suitable to investigate customer involvement during the development of services, since they are very similar in the sense that they all manage key activities of the service development process in a structured or gated manner. These models and their mutual relation are depicted in fig. 3.3 and the detailed description of the innovation process can be found in Appendix II.

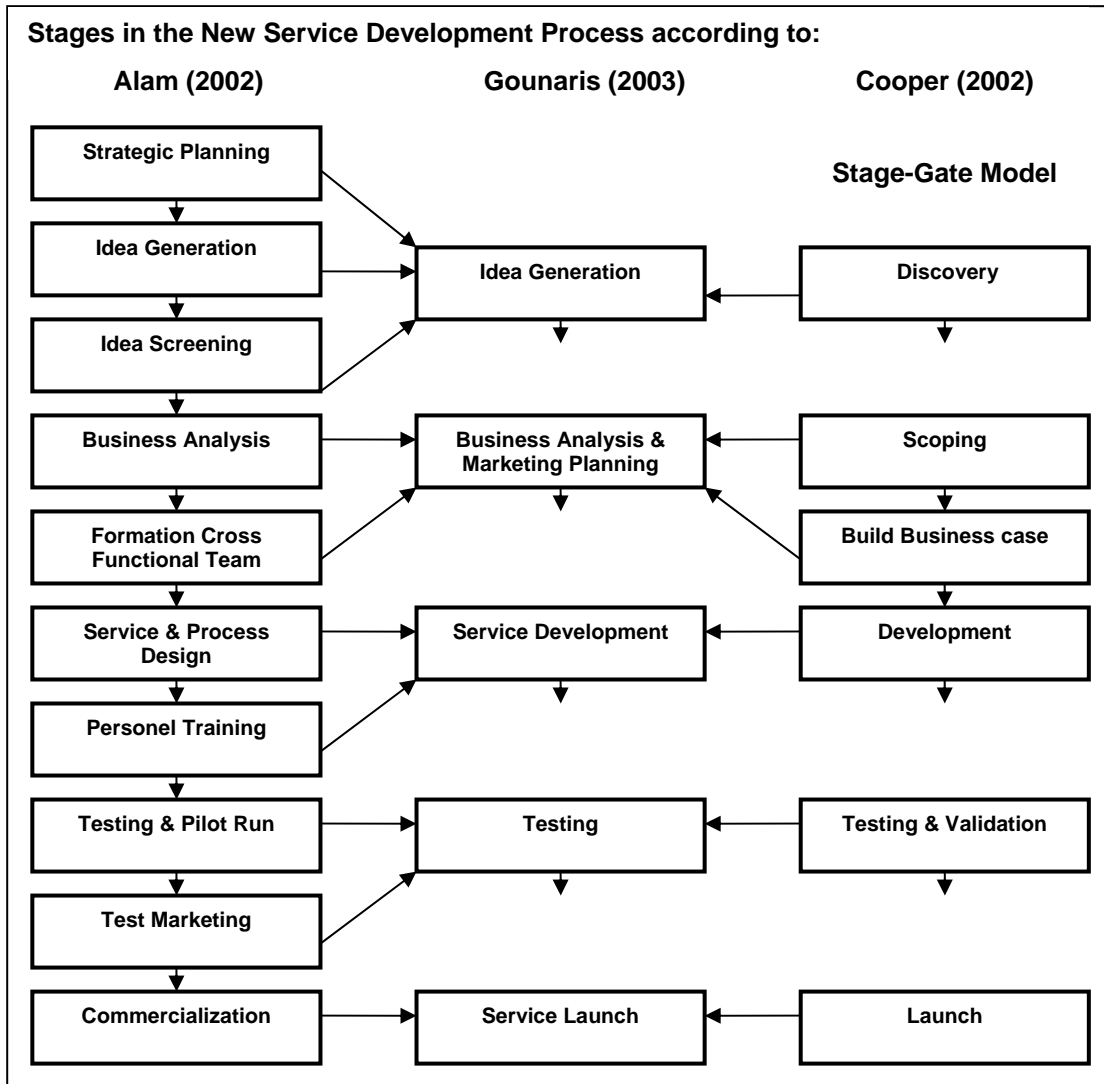


Fig 3.3 Stages in the NSD Process (Alam, 2002; Gounaris, 2003, Cooper, 2002)

However, the stage-gate model is preferred because the stages have the most overlap with the innovation process at Albert Heijn. For example, Albert Heijn has a preliminary investigation stage during the initiative process and a more detailed investigation during the idea process phase. This is beneficial for the categorization of the customer involvement activities. Also the sequential structure of the stage-gate model is widely used and well known business practice (Trott, 2005); [7]. Also, a smaller number of generic stages is preferred (in contrast with Alam’s 10 stages) as this is better manageable and less complex.

In conclusion, the literature does provide product and service development models, but lacks a specific model for mobile services. Although these models provide a useful framework to study new service development, more research is needed to integrate the unique service characteristics. So how does one

manage the creation of successful mobile services? The literature is scarce on this topic, but provides some insights which are discussed in combination with the findings from the case studies in Chapter 8.

3.3 The Stage Gate Model

As shown in fig.3.3, the following stages can be discerned in the Stage Gate model:

The first stage or “**Discovery Stage**” was later added to the original model and answers the question “*What service will be developed?*”. In this stage idea generating activities are common and the project team selects a project. Here it is important for the company to have contact with the “outside” as suppliers, customers or employees can bring in new ideas (Cooper, 2000; 2002).

In the “**Scoping**” or “**Preliminary Investigation**” stage a quick investigation and sculpting of the project takes place and the question “*Is the idea worth to develop?*” is answered. It is crucial to find out what the added value is for the customer, because this is the rationale for development. Additionally, a company needs to understand the competition and recognize possible threats (market assessment) (Cooper, 2000; 2002).

The “**Built Business Case**” or “Detailed Investigation” stage is the last “conceptual” stage and is crucial for success. It answers the question “*Is the Business Case sound?*”, and following (sub) questions:

1. “*What will the service look like?*”
2. “*What is the rationale for the business to develop the service?*”
3. “*How to get there?*”
4. “*Can we do it?*”

The business case is a thorough investigation of the service and results in a detailed service description, business justification and detailed “plan of action”. This stage is divided in four smaller phases each answering one of the four sub questions:

- 2.1 “Product Definition and Analysis” (defined product),
- 2.2 “Building the Business Case” (business justification),
- 2.3 “Building the Project Plan” (roadmap) and the
- 2.4 “Feasibility Plan” (go / no go).

The first step is a combination of activities that define and justify the development. Here the added value for the customer will be determined (user “Needs and Wants”). Next a “Competitive Analysis”

will be conducted that service as the foundation for the marketing strategy. Subsequently a “Technically Feasible Product Concept” (how to make it), “Production Cost” and “Operation cost Analysis”, “Market Cost” and “Launch Cost Analysis” and finally a “Concept Test” follow. The second step is building the “Business Case” a document that gives a product definition and business justification. It documents the results of the previous step and extends this with legal and regulatory requirements (e.g. health, safety and so on). The third step is the creation of the Project Plan, an overview of the development process with a list of tasks and their suspected completion date together with a summary of recourses that are needed to complete the project. The fourth step is the feasibility review. In this document the rationale for the development of the service is reviewed together with an analysis of the information from the previous steps. Based on this it is decided whether to continue with the development or not (Cooper, 2000; 2002).

The fourth stage or “**Development**” is the first execution stage and is the actual service design and development. This stage answers “*Should the project be moved to external testing?*”. Activities in this stage are product design and development, simple testing, develop marketing (launch), production and test plans, map operations, time line and milestones (development team). The outcome of this stage is the prototype (Cooper, 2000; 2002).

The fifth stage or “**Testing & Validation**” is the second execution stage and answers “*Is the product ready for commercial launch?*”. Here the verification and validation of the proposed service and its marketing and “production” takes place. There are three test phases: Near Testing (test for bugs or issues), Field Testing (beta testing) and optional Market Testing (trial sell) (Cooper, 2000; 2002).

The sixth and final stage “**Launch**” or “**Commercialization**” is the full commercialization of the service and the start of sales. Here there will be a market launch & roll out, create a marketing strategy, monitor result and compose Post – Launch & Life Cycle Plans. After commercialization, data is collected and the strengths and weaknesses of the services are assessed. Also the learnings for future products will be discussed.

Although the Stage Gate model was designed to increase the chance of success there are still challenges that could jeopardize the successful development of services and are dealt with in the next paragraph.

3.4 Challenges in Mobile Service Development

Although the prospects and advantages of mobile services may appear obvious, the path to success is not necessarily paved. Due to its special features, MSD faces not only typical new service development issues, but also some particular challenges of its own, for example the “intangibility” characteristic and the therefrom arising management challenges (for a detailed description of mobile services and its special characteristics see Appendix II). Therefore MSD needs to be managed differently than traditional service innovations. Because of this, the development of mobile services may face many challenges (Siau, Lim and Shen, 2001; Siau & Shen, 2003; Abrahamsen et al., 2004). For instance technical restrictions of mobile devices and wireless communication, business concerns or legal constraints may complicate the practical use of mobile services or inhibit the development of mobile services (Siau et al., 2001; Siau & Shen, 2003). The principal differences in mobile service development compared to other services are related to the inherent physical characteristics of the mobile device. When developing mobile services, display size, data input mechanisms and other technical or user constraints have to be taken into account. The challenges cited in the literature can be categorized as technological, organizational and user challenges.

3.5.1 Organizational Challenges

The development of mobile services is a complex process and involves many different parties and stakeholders. Mobile services for transaction based services like mobile retailing or mobile payment typically involve customers, the retailer, mobile network operators, often banks and possibly other entities. Managing people from different departments and organizations with different backgrounds and interest is not an easy task and also may face organizational challenges. Strict time to market requirements additionally might be concerning. In order to benefit from mobile services, organizations need make fundamental changes in their organizational behaviour and develop new business models. This process of rethinking and designing is demanding (Siau et al., 2001). Organizations also face an investment risk. Understanding cost and benefits of mobile services is not easy and even if this is clear, it is not sure if it will be worthwhile for companies to invest in wireless technology (Siau et al., 2001).

3.5.2 User Challenges

A general problem related to ICT is its “technology-oriented view, inadequate understanding about users’ needs, and un-interoperable and isolated application and service perspective” (Edelman, Koivuniemi, Hacklin and Stevens, 2006; p.295). Edelman et al. state that mobile services are designed from a technology perspective and not from the user perspective. From the users’ point of view this has resulted in services that are often difficult and problematic to use and lack added value. Also specific needs of “mobile terminal” users need to be taken into account to prevent difficulties (Abrahamsen et al, 2004). Siau (2001), states that users who try mobile applications easily become frustrated and stop using it after a few attempts. Therefore simplicity in use is critical to a successful mobile service. Another reason why users are hesitant to use the services is fear of security issues, and therefore need to be addressed accordingly.

3.5.3 Technological Challenges

In order to be “easily carried” or “mobile”, wireless devices must be light and small. While achieving mobility, mobile devices have some disadvantages to personal computers (Siau et al., 2001). The technical limitations of these devices, including processing power, memory space, battery capabilities and the operating system can be challenging (Abrahamsen et al., 2004). Abrahamsen et al. (2004), state that the development of mobile services is also challenging due to the specific demands and technical constraints of the mobile environment which needs to be considered carefully. Other technological challenges can arise from the limited capabilities and rapid evolution of terminal devices, various standards, protocols and network technologies and the need to operate on a variety of different platforms. Siau et al., (2001; 2003) mention in their research the following mobile device limitations: limited memory and disk capacity, shorter battery life, complicated text input mechanisms, higher risk of data storage and transaction errors, lower display resolution, less “surfability”, unfriendly user interface, graphical limitations, less bandwidth, less connection stability, less predictability, lack of standardized protocol and higher cost. Although many things have improved over the last years, e.g. with the arrival of the smart phone, these drawbacks still hold to a certain extent.

As it is argued in the service literature for example by Alam & Perry (2002), Edvardsson et al. (2002; 2006) and Fitzsimmon & Fitzsimmons (2000) involving customers during service development might overcome many challenges. Customer involvement might overcome quality issues, realize added value and thus create more successful services. It is suggested that the same holds for customer participation in mobile service development (Matthing et al., 2004). Edelman et al. (2006), go even further and argue that for these services it is even more important to understand user needs than traditional services and this requires new user integration mechanisms. So, involving customers might not directly solve organizational or technological challenges and even create a few of its own. Customer involvement still seems crucial for successful mobile services. But efforts should be made to achieve this, for example the development process needs to be changed fundamentally in terms of collaboration and openness (Edelman et al., 2006) and companies and customers might face other challenges as well.

The next chapter provides more insight on what customer involvement is and what role customers play in (mobile) service development. Furthermore, the benefits and challenges that might arise when customers are actively involved in the development process are discussed as well as a closer look at (desirable) customer involvement in the Stage Gate model.

Chapter 4 Customer Involvement in Service Development

This chapter defines customer involvement, identifies motivations, challenges and manners to actively involve customers in the development process. It also investigates the implication of customer involvement for MSD in general and in more detail for the Stage Gate model.

4.1 Customer Involvement

Contemporary studies on the determinants for successful service development indicate that customer involvement is utmost important (Alam and Perry, 2002; Alam, 2002; Matthing et al., 2005; and Edvardsson et al., 2000; 2006). At the end of chapter 2 it was brought forward that involving customers is expected to be beneficial for the *mobile* service development process (Matthing, 2004; Edelman, 2006). This raises the following questions: “Who is the customer?” and “What exactly is customer involvement?” and calls for a demarcation of the relevant concepts.

Based upon experiences of leading actors in the field of customer involvement in service innovation, Edvardsson et al. (2006), propose a framework and try to answer the most pertinent questions. In earlier research they argue that the customer is “*the direct receiver of the result of the operation*” and involvement means the action where the customer “*contributes actively to the existence of the service, the creation of quality and the realization of added value*” (2002: p.26). In their more recent work they define customer involvement as “*coming close to the customer*” (2006: p.2) and discern even two different perspectives on customer involvement. The first perspective has a more passive nature (traditional marketing research activities) and focuses on understanding more deeply what creates added value for customers. The second perspective comprises a more active approach and not only explore customer needs but use new and pro-active customer involvement techniques to use customers and consumers as innovators (2006: p.5). Alam denotes customer interaction as “*interactions between service producers and the representative(s) of one or more customer firms at various stages of a NSD process*” (2006: p.468).

Although the literature is not conclusive and many definitions can be found, there is agreement on the importance of customers. Matthing et al. (2004), reviewed the existing literature on customer

involvement in the development process and built a definition upon previous definitions. They define customer involvement as: *“those processes, deeds and interactions where a service provider collaborates with current (or potential) customers at the program and or project level of service development, to anticipate customers latent needs and develop new services accordingly.”* (Matthing, 2004: p.487). In contrast with previous definitions this definition is more explicit and will be referred to when customer or consumer or user involvement and interaction is used. These characterizations of customer involvement clarify the concept and shows agreement on the importance of customer involvement. This brings forward two other important questions: *“What motivates companies to involve customers in the service innovation process?”* and *“How do companies successfully involve customers in service development?”*. The next paragraph attempts to provide an answer.

4.2 Rationale for Customer Involvement in Service Development

In today’s competitive service-driven economy, services are the main base for profitable businesses. Companies need to innovate by developing value adding new products and services, to increase competitiveness which is essential for company survival (Edvardsson et al., 2006). Involving customers in the service development process yields (service) success and argues for customer involvement throughout the process (Alam & Perry, 2002; Alam, 2006). Therefore companies need to develop a deep and thorough understanding and actively involve customers in the new service development process (Edvardsson et al., 2000; 2006; Alam 2002; Alam & Perry, 2002; Matthing et al, 2004). In table 5.1 an overview is presented from the literature of benefits that companies might experience when involving customers.

Table 5.1 Benefits arising from customer involvement

- Reduced cycle time (Alam, 2002; Alam & Perry, 2002; Edvardsson et al., 2006)
- Rapid diffusion (Alam, 2002; Edvardsson et al., 2006)
- Long term relationships (Alam, 2002; Edvardsson et al., 2006)
- Superior and differentiated services (Alam, 2002; Alam & Perry, 2002; Edvardsson et al., 2006)
- Facilitate user learning (Alam, 2002)
- Win customer loyalty (Alam, 2002)
- Jump start idea generation process (Edvardsson et al., 2006)
- Create added value (Alam & Perry, 2002; Edvardsson et al., 2006)
- Effectively manage the overall innovation process (Edvardsson et al., 2006)

These examples make clear that there are many advantages for companies that successfully involve customers and the chances on developing a successful service increase. It is clear that customer involvement can be beneficial, yet there are challenges. For example, reasons for companies to avoid interaction with customers are cost (Edvardsson et al., 2006) and / or (confidentiality) risks (Edvardsson et al., 2006). Moreover, companies find it difficult to interact with customers and do not know *how* to embed customer involvement throughout the service development process (Edvardsson et al., 2006).

Unfortunately there is not a unified theory on how one should involve customers in the service development process (Alam, 2002; Alam & Perry, 2002). Even the debate on the governance models itself is not settled. What model is most appropriate and should this be sequential or parallel? (Alam & Perry, 2002). Even though there is agreement on interaction itself, it is not exactly clear in what stages customer involvement is needed and to what extent. To complicate matters, the literature on customer involvement in NSD is scarce. Although research on mobile service development is almost non-existent it does provide some important insights and the existing literature on NSD can be useful as a starting point.

The previous chapter discussed different governing models to support the management and suggested the use of the stage-gate model to construct a framework for customer involvement in (mobile) service development. In the next paragraph an overview of customer involvement during separate stages of the development process is dealt with and a unified model proposed to serve as a framework to support and structure the research.

4.3 Customer Involvement in Different Stages

Alam (2002), is one of the first scholars to investigate user involvement throughout the different development stages. The outcome of his research combined with the stages of Cooper's model, shows customer activities throughout various stages in figure 4.1. He concluded that customer involvement is intense in the early stages of the service development process or in other words, the "fuzzy front-end" (or "idea generation", "idea screening" and concept "development stages"). He stresses the need for active participation in this phase because "powerful new service ideas need to be generated with user

contacts and interaction” (Alam & Perry, 2002; Alam, 2006). This idea is also supported by Matthing et al. (2004), who state that customers should be involved early and intensively in the innovation process. Another reason for this might be that managers pay more attention to the early stages of the development, because these are crucial since they lay the foundation on which the overall project is built (Alam, 2002: p.257; Alam, 2006).

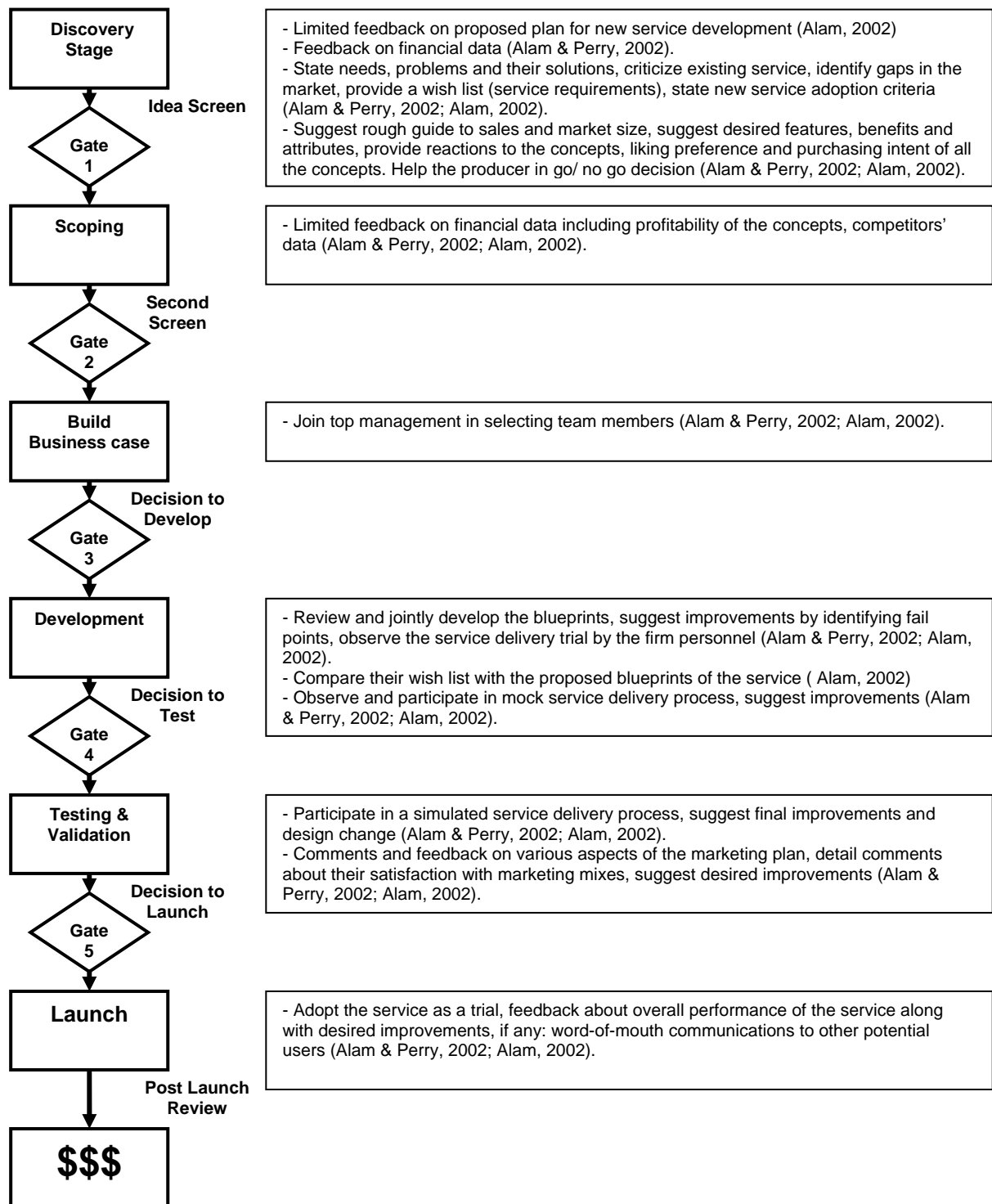


Fig. 4.1 Customer involvement in the stage gate model, (Cooper, 2002; Alam & Perry, 2002)

But, not only in the beginning is customer interaction needed, this also might be valuable during later stages. For instance pilots and service testing might be more effective with user interaction (Alam, 2002). So, customer involvement tasks vary during different stages of the development process and some stages require more involvement than others or might even involve none. Another important finding is that not only the intensity of interaction varies but also the way that customers are involved differs. Companies can obtain user input by several modes of user interaction. For example by interviews, user visit, meetings, brain storm sessions, user observation, phone, fax, e-mail, focus group interviews and user interaction in management retreats (Alam, 2002). Different stages ask for different modes and specifically in the early stages multiple modes can be used because of the high intensity of the customer interaction.

4.4 Customer involvement in the Stage Gate model

In conclusion we can say that customer involvement is expected to be desirable throughout the development process. Note that it might not be possible or useful or necessary to involve customers during certain activities. For example there might be little added value in involving customers in the production of the “feasibility study”, an activity that is carried out in the second stage of the model. Each of the activities throughout the different stages in the model that was brought forward in paragraph 3.2 is listed and assessed on customer participation suitability.

The “Discovery” stage comprises “Idea Generation” and “Project Selection” activities. Both are useful and suitable to involve customers since customers are expected to add value (Cooper, 2000; 2002).

The “Scoping” stage includes “Evaluate idea” and “Evaluate Competition” activities. Although the Idea Evaluation is useful and suitable to involve customers, there is no real added value in customers participating in a competitor’s evaluation (Cooper, 2000; 2002).

During the four smaller phases (Product Definition and Analysis, Business case, Project Plan and Feasibility Review) of the “Built Business” case the following activities can be discerned Cooper, 2000; 2002):

- 2.1) - **“User Needs and Wants”** (surveys / interviews)
- **“Competitive Analysis”**
- **“Technical Feasibility Assessment”**
- **“Production Cost-”, “Operation Cost-”, “Market Cost-”, “Launch Cost-Analysis”**

- **“Concept Test”** (Prototyping)
- 2.2) - **“Compose “Business Case Document”**
- 2.3) - **“Compose “Project Plan Document”**
- 2.4) - **“Compose “Feasibility Document”**

Customer involvement activities are only expected to be useful in “User Needs and Wants” and the “Concept Test”.

The “Development” stage included: “Technical Development”, “Prototyping”, “Initial Customer Feedback”, “In House Product Testing”, “Operations Process Development” and “Launch & Operation Plans” (Cooper, 2000; 2002). Customer involvement is expected to be desirable in Prototyping, Initial Customer Feedback and In House Service Testing as customers can add value to these specific activities since they are closely related to the actual service.

During the “Testing & Evaluation” stage merely testing activities can be observed: “Extend In House testing”, “Customer Field Trials” (Test Market / Trial Sell), “Finalize Launch and Operation Plans”, “Compose Post Launch & Life Cycle Plans” (Cooper, 2000; 2002). It goes without saying that customer involvement is desirable in all test activities.

The final stage encompasses the following activities: “Launch & Roll-Out”, “Marketing Strategy”, “Train Sales and Support Personnel” and “Monitor Result” (Cooper, 2000; 2002). Customer Involvement is desirable in “Sales and Support Personnel” and in “Monitoring the Results”. During or after the “Launch” stage “Service Assessment” and “Discuss Learnings” activities can take place (Cooper, 2000; 2002). In both activities customer involvement is expected to be valuable

Table 4.3 summarizes the activities where customer involvement is desirable and suggests modes of customer interaction.

Table 4.3 Different Modes of Customer Involvement in Stage Gate model

Stage	Customer Involvement in:	Mode (based on Alam, 2002)
Discovery	Idea Generation	Brain Storming, Group thinking
	Project Selection	Team Meeting
Scoping	Evaluate Idea	Team Meeting, (structured) Interview
Business Case	Concept Test	Interview,
Development	Prototyping	User Observation, Interview, Survey, Focus Group
	Initial Customer Feedback	Interview, Survey, Team Meeting, Focus Group
	In House Testing	User Observation, Interview, Survey, Focus Group
Testing & Evaluation	Extend In House Testing	User Observation, Interview, Survey, Focus Group
	Customer Field Trials (Test Market / Trial Sell)	User Observation, Interview, Survey, Focus Group
Launch	Train Sales	Role Play
	Support Personnel	Role Play
	Monitor Results	User Observation, Interview, Survey, Focus Group

	Service Assessment	Interview, Survey, Focus Group
	Discuss Learnings	Interview, Survey, Focus Group

This chapter showed the importance of customer involvement during different stages of the service development process and suggested activities where involvement is desirable. Also implications for the Stage Gate model are investigated and modes of customer interaction suggested, such as the idea generating activities (brainstorming and group thinking) in table 4.3. This chapter is the last conceptual chapter and the next chapter continues with the concretion of this study: the research design.

Chapter 5 Research Design and Method

This chapter discusses the research methodology and explains *how* the research question from chapter 2 will be answered.

5.1 Research Methodology and limitations

“Research is one of the ways to find answers to your questions”, (Kumar, 1999; p.6). One way to classify research is to make a categorization based upon its purpose. Kumar classifies the following types of research *descriptive*, *correlational*, *explanatory* and *exploratory* research. For this study the fourth type of research is relevant and will be clarified. Exploratory research design is used when it is the objective to explore an area where little is known, the problem is unclear, the subject is new to researchers or to investigate the possibilities of undertaking a particular research study. However, when a study is carried out to determine its feasibility of a project this is also called a feasibility or *pilot study*. Lewis-Beck, Bryman and Liao (2003: p.823), refer to pilot studies as “1) feasibility or small-scale versions of studies conducted in preparation for the main study and 2) the pre-testing of a particular research instrument”.

This type of research is suited for formulating problem hypothesis, clarifying terminology and **raise understanding** of the given research area (Kumar, 1999; Yin, 2003). Pilot studies are done in preparation for full scale research and might give a rationale for bigger experiments. Therefore, researchers might first start with a small scale study and then decide if it is worth to carry out a more detailed study. From a cost perspective, pilots are attractive options. Compared to the high tech industry, the retail industry has less money to spend on innovation and these small scale studies might avoid wasting time, money and other resources, since they are used as exploration before the main research or serve as a trial for a more costly or full scale experiment. From a business or operational perspective, pilots are also interesting in a retail environment as they are less disruptive or invasive for store personnel and customers compared to large or fully implemented experiments.

Two data gathering approaches are possible to retrieve information about a phenomena, event or problem: *secondary* and *primary* data collection (Kumar, 1999). The first method makes use of

existing and available information, where as the second method is based upon the collection of new information. This research is based upon both information sources. As primary sources this research uses multiple data collection techniques: observations, questionnaires, (in)formal discussions with customers, managers, employees and colleagues, pilot studies, brain storm sessions, internal project documentation analysis and interviews. Secondary sources include existing documentation from previous in house research on this topic and literature review.

5.2 Pilot studies at Albert Heijn

In the past innovation at Albert Heijn was conducted by having big, expensive, time consuming pilots which often proofed not very useful. Over the past three years, Albert Heijn dramatically changed their view on innovation. Nowadays the retailer uses small scale low-budget tests with more customer involvement and makes use of just mature technology. Another change in the innovation mindset was the development of the “Innovation café”, located in the headquarters in Zaandam. This is a place where people can discuss, gather and exchange ideas on innovation. This department was established to stimulate open communication and sharing of ideas and bring innovation to the work floor. Albert Heijn employees can experiment here with new service innovations that are on display and can bring in their own ideas for new innovations. Appendix II gives an extended description of the innovation process and the “Innovation café” at Albert Heijn. Innovation is organized around three themes: “Health”, “Easy Shopping” or “RFID (Radio Frequency Identification)” and “Mobile Lifestyle”, all addressing specific customer needs and market trends. The “Mobile lifestyle” theme is concerned with the increased interest from customers and companies in mobility and mobile technology and is an answer on how this affects our daily lives and changes the way we live and work.

The past two years there have been several mobile service pilots. The majority of these pilots focus on mobile information services, mobile payment services and mobile scanning service. These projects will be discussed respectively in the next chapter. The mobile scanner is an example of a successfully implemented mobile service innovation that started out as a pilot and has now been implemented companywide.

Since there were many uncertainties at the beginning of the project, the research topic was relatively new and there was no specific expectation, the limited budget, previous experiences, the low profile approach and the new vision on innovation, resulted in research with an explorative nature. Subsequently the choice for pilot studies in combination with a literature study was the best option for the research in this thesis.

5.3 Organization

Succeeding the (company) introduction from Chapter 1, Chapter 2 put forward two research questions:

Q1: *“what are the determinants of successful mobile service development in a retail environment?”*

Q2: *“What is the influence of customer involvement on the effectiveness of mobile service development in a retail environment?”*

After the literature study which proposed a model to successfully manage the service development process: the Stage Gate model in chapter 3 (Cooper, 2000; 2002), chapter 4 continued with the role of the customer during MSD which suggested a positive relation between customer involvement and a successful project outcome, thus providing an interim answer to Q1. In order to verify the answer to the first question and answer the second question, further understanding is needed of how the pilots were conducted at Albert Heijn.

In Chapter 6 each of the conducted pilots at Albert Heijn will be described in detail. This description contains a short explanation of the service, a rationale, back ground information and evaluation. More important these reports bring several problems to light. The results of the pilot will be combined with the Stage Gate model and serve besides the literature review as the basis for answering the research questions. Based upon the information mentioned in the previous paragraph an analysis will be carried out whether:

- the project is a success e.g. is there a follow up or (nation wide) implementation?
- there is customer involvement and to what extent and secondly what the mode of this interaction is (e.g. how does the customer participate)?
- there are other relevant factors that impede or benefit the project's success?

The results of the pilot are combined with degree and nature of customer involvement and attempt to bring a relation to light between successful MSD and following the proposed stage gate model in

combination with involving customers in the right manner and at the right time, and possibly other determinants. This leads to the obvious following questions “Is there room for improvement?” and “How can this be achieved?”. Based upon the literature it is hypothesized that there is a positive relation between the extent of customer involvement and the success of the development of the mobile service. Is it desirable to involve customers in an earlier or different stage? Will more customer involvement increase the chances of success? The results and the discussion are presented in Chapter 7. Finally a holistic approach is adopted where all the findings and learnings of the entire project are integrated, leading to the pinnacle of this thesis: the disclosure of what factors determine successful mobile service development (or opposite: show how to overcome hindrances). The outcome, conclusion, advice and implications follow in chapter 8.

Chapter 6 The Pilots

After an introduction and description of each pilot, it's results, the degree and mode of customer involvement and possible other relevant factors are determined. This serves as the basis for the analysis and discussion in chapter 7.

6.1 Pluk 1

6.1.1 Pilot Introduction and Setup

During spring 2007, the first Pluk pilot was held at the Innovation Café at Albert Heijn headquarters (AHHQ), this place offers a unique playground for small experimental pilots. AHHQ employees were the first users to test this information on demand service to see if the technology was suitable to be tested with customers. Under the new innovation process it was custom at Albert Heijn to test new technology small-scale several times before involving customers in one of the stores. PLUK is the name of a KPN spin-off company, specialized in mobile marketing which provided the technology for this new service, also named "Pluk". This newly developed service aimed to provide information to customers via different channels or "cross media" (SMS and e-mail). Albert Heijn wanted to offer their customers a free tailor-made information service that on request would provide customers with up to date background information at the right place and time. This information could vary from new products, healthy recipes, and easy recipes to store and discount information. To realize this, PLUK was chosen as a technology partner. This pilot had two objectives, first the testing of the maturity of the technology and if the service worked properly, that means if it was suitable to test in a store setting with "real" customers. The second objective was to test if this service could have added value for customers. The idea behind this service is simple. A customer sees a codeword on a product, billboard or advertisement and sends this codeword by SMS to number 7585, which is managed by PLUK. Immediately the customer receives an SMS and or a phone call with an audio message. At the same time an e-mail is sent with additional information which can be read at a later point in time. In order to receive e-mail the user has to provide an e-mail address once and give PLUK permission to use this.

During this limited pilot only four codes were tested where the codes and number were printed on price tags in a simulated store environment. An extra fifth code word was used to explain the service .

6.1.2 Customer involvement

Figure 6.1 shows a simplified version of the Stage-Gate model and depicts for each stage whether there is customer involvement in a particular stage and to what extent. This project followed the stages of the Stage Gate model, but lacked any true customer involvement during these stages.

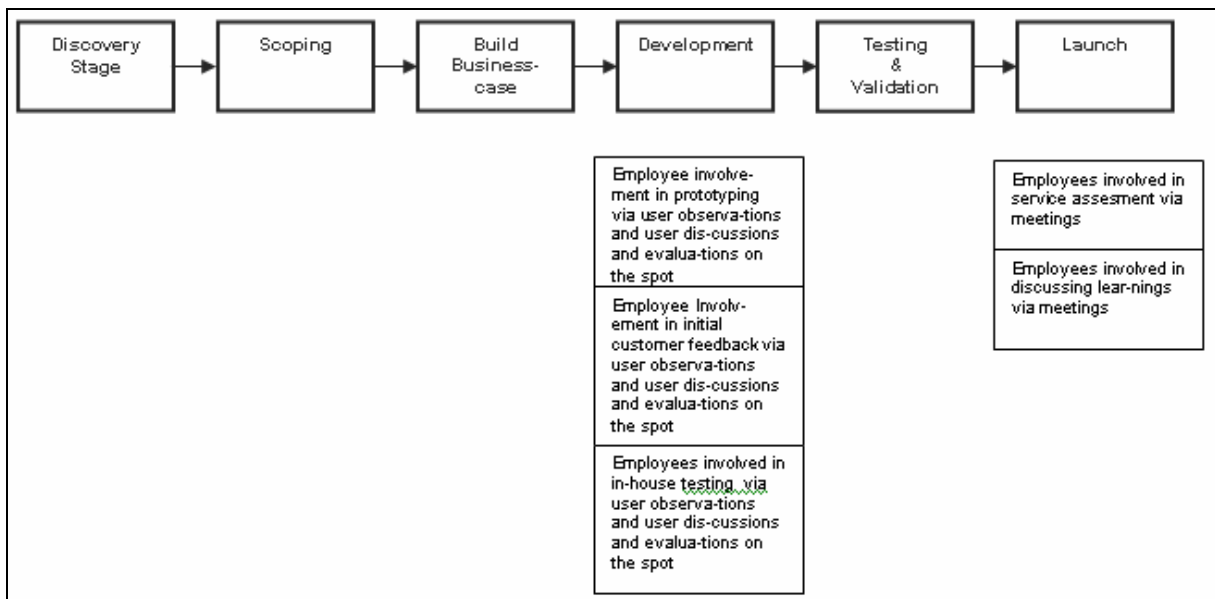


Fig. 6.1 Customer Involvement in the Stage-Gate model for Pluk 1

This pilot was conducted in the innovation café and the service was not tested on real customers, but on employees who worked in the HQ. It can be argued that these employees might be biased, since they know the companies strategy and how it operates and might even have certain interests. However they can be helpful as stand-in customers for experimental pilots like these who are not ready to be tested on real customers. Also, true objectivity is not needed to test the maturity and suitability of the technology in this preliminary test. During the Development stage there was employee involvement in “prototyping”, “giving initial feedback” and “in-house testing”. The people who tested the service were also involved in the meetings that evaluated the service and discussed the learnings.

6.1.3 Result and other relevant aspects

The Innovation team was enthusiastic about this new service and as there were no major operational or technological obstacles found, the service was evaluated as valuable to explore further, ergo successful

from a company perspective. It was believed that this service could add to the customer's shopping experience; making the shopping trip more convenient, richer and a more pleasant experience. The added value for the customer lied in the specific information via text messages: information was given based upon the customer's location (i.e. receive shopping list in the store) and was available later on request (the website). Second it was possible to provide background information that was not accessible before and helped the customer find the information which could be accessed later "on demand". However, there were some concerns:

- To be more attractive to a large group of people, more content was needed.
- The text message could display limited characters and might be too small for other content.
- Although the pilot setting was good to test the service itself, it was uncertain how customers would react in a real life setting.
- It was also unclear what the effect on the business operation would be.
- All the information was available on the company's website and a second pilot should have something "extra".

Nevertheless, the budget for a follow pilot was approved and there would be a second pilot in a store setting.

6.2 PLUK 2

6.2.1 Pilot Introduction and Setup

In July 2007 the second PLUK pilot started at AH XL Elandstraat in The Hague. Although the technique used in this pilot was similar to the first project, there were some differences in the project setup for this pilot. The first project was rather limited and used only four different codes, the second pilot used 18. Also, this pilot would be held in a real store environment with "real" customers instead of HQ employees. Additionally, more and different content was used for this pilot. For example in this pilot the PLUK service was extended with a call-back audio message with a product explanation to create a richer customer experience. This "call-back" service needs some clarification. Around the same time that PLUK2 started Albert Heijn introduced a new product group: "Kies en Kook" (Choose and Cook). In order to actively involve other departments (this was a difficulty found in the first pilot) an incentive to participate was needed and therefore it was decided to give these particular products

some extra attention. And, not unimportant, these products encompassed a new concept that was very suitable to explain via a call-back message and could add value to the customers' shopping experience. One of the reasons for this test was to see how customers responded to the different and extended features of this test. Moreover it was important to investigate the response of real customers.

6.2.2 Customer involvement

During this pilot, customers were only involved during the near testing and beta tests or in other words the "Testing & Evaluation" stage, this is depicted in figure 6.2 (highlighted in grey).

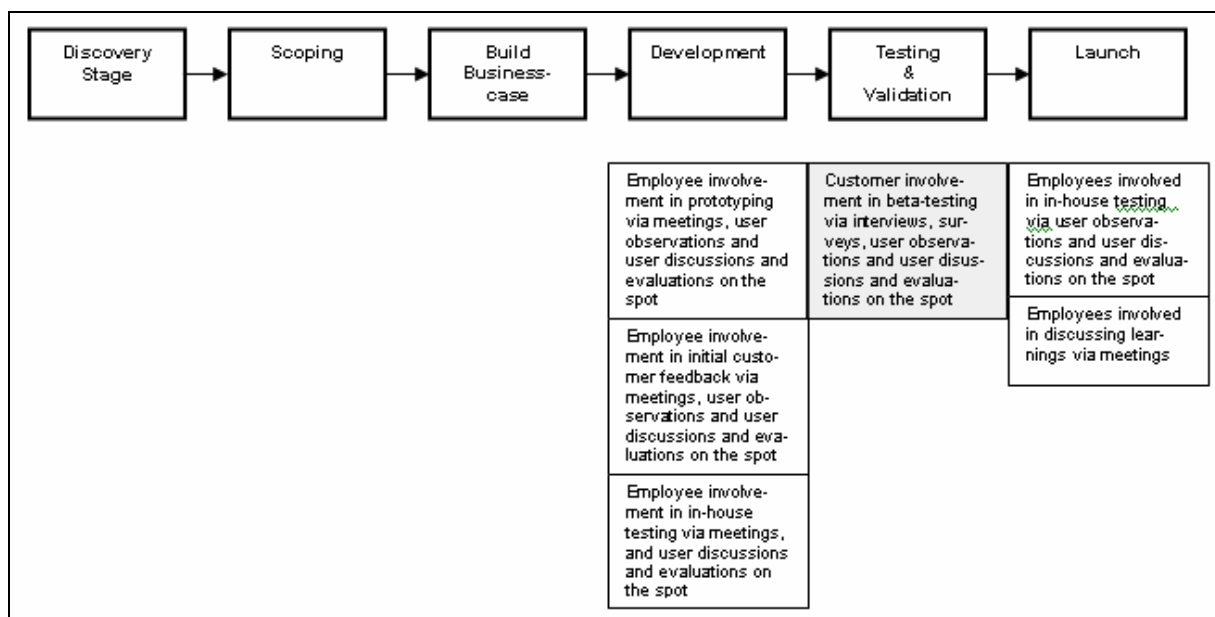


Fig. 6.2 Customer Involvement in the Stage-Gate model for Pluk 2

Customers contributed via spontaneous user discussions, evaluations on the spot, interviews, surveys and as objects for observations. Also the service was pre tested on employees in the Innovation Café, resulting in involvement in stage 3 via discussions, evaluations and observations. During the last stage a meeting was organised to evaluate the service in which there was no customer but only employee involvement.

6.2.3 Result and other relevant aspects

One of the learnings of this pilot was the importance of detailed and rich communication. For some customers and employees the PLUK concept was unclear. Also the in-store communication wasn't noticeable to all users. The store where this pilot was held is the largest store format XL (for a

description of the store formats, see Appendix I). Because of the enormous amount of space in the store, the communication materials stayed somewhat to the background. The first week only 200 text messages were sent. One of the reasons for this moderate use was the instruction leaflet. This did not trigger the right reaction among customers and they were not persuaded to use the service. As a result it was not clear how many people wanted to participate spontaneously because of the active promotion during the test. It was decided to proactively bring the service under the attention of customers. After the first two weeks there was at least one person actively approaching customers to participate in the pilot and the service was explained step by step with the use of a mobile phone. Another communication issue occurred during the instruction of the store employees. In the cafeteria communication materials were displayed, a detailed instruction was written and the concept was explained to staff members who were supposed to pass on the knowledge to their employees. Also in the store there were big posters explaining the service and leaflets with instructions could be found at frequently visited places in the store i.e. checkouts, the information desk and so on, but it turned out that hardly any store personnel was aware of the service and could not explain the service to customers nor were they capable of addressing customer questions about the service. Another reason why the communication failed, were personnel changes in the organization. Consequently other activities had more priority and the instruction shifted to the background. Also a difference in the acceptance of the new technology was noticed. It seemed that younger people (SMS-generation as it was called) understood and accepted the new concept more easily and sent more text messages than people above 40. People in the 15 to 25 segment were very enthusiastic, but people between 25 and 40 were more reserved and people above 40 almost didn't use SMS at all. These different customer groups visited the store at different time slots. In general during the promotional activities, which took place during office hours, more people above the age of 40 visited the store and people below 40 paid a visit after 19:00 hours.

In retrospect the store chosen for this pilot was not optimal. The store was located in a relatively poor part of the city and did not attract a homogenous customer group. That means, generally speaking, that especially during the morning and early afternoon people from "low income and low buying power classes" populated the store. These customers often showed little or no interest and took the

opportunity to complain about non pilot related “problems”. In the afternoon mothers with children would pay a visit and were often in a hurry showing little interest or were unable to participate. Another difficulty was an issue with the technology partner. It was difficult to obtain the pilot data and therefore troublesome to evaluate. At that point in time, future participation of the technology partner in future follow up pilots was therefore unsure. Although PLUK received a lot of positive media attention, it was found that not all customers were as enthusiastic as expected and a moderately positive participation was observed (see Appendix IV for an article that appeared in a Dutch newspaper). Another (unexpected) finding was that customers did not perceive the service as value adding. It was found that exclusive and specialized content in combination with financial or efficiency benefits are crucial for success. Together with promotions and discounts these learnings would be utilized in a future pilot. Also communication must be easily accessible and provide straightforward answers. Despite of the limited customer acceptance, this pilot provided many insights and therefore was defined as a moderate success. After the project evaluation it was decided that there would be no companywide implementation and there would be a new pilot (PLUK 3) with a different set up. Again one objective of this second pilot was to test if the service could have added value for Albert Heijn customers and the service was suited to implement in-store on a larger scale. Similar to the first pilot it was believed that this service added value to the customer’s shopping experience, and with some modifications, was suitable to implement throughout stores and therefore successful. However, this time there were more concerns:

- Cooperation between different departments can improve, for example the cooperation between the marketing and communication department and the innovation team is not optimal and has an inhibiting effect on the development of new services.
- The location, socio-economic features of customers’ demographical characteristics influenced the adoption of the service and had a negative effect on the outcome on the project.
- More attention and communication was needed as well in the store as within the organization.
- Project evaluation is difficult because the access to project data and results was limited and difficult to obtain.
- The technology partner had different interests and had an own agenda.
- Sending an SMS might be an obstacle for customers, NFC technology would make this obsolete.

- No fixed definition of project success was given; this complicated the assessment of the pilot.
- The added value for the customer was limited. The content available in the pilot was not exclusive. Customer could also find this information on the company or store website,
- IT and Controlling showed interest in pilots, Marketing and Communication did not, and this caused the project to be delayed.

Keeping these considerations in mind the third pilot was conducted, but with changes to overcome the obstacles found in the second pilot.

6.3 PLUK 3

6.3.1 Pilot Introduction and Setup

Based upon the learnings of the first two projects, it was decided to undertake a third project, Pluk 3. The objective of this pilot was primarily to test if there was a need for this new service and to try to raise the level of adoption. This pilot would also be used to support the introduction of a new product line “Koken met Chefkoks”. One reason for this decision was to gain more support from different departments throughout the company. During the previous project, Marketing and Communication showed little or no interest for these pilot projects, but cooperation and input from this department was desirable and needed to develop a successful service. Based upon the negative experience regarding the store location and customers with a low socio-economical status in the previous pilot, a different store was chosen. The store would be located in a different city and would newly open after renovation. Together with an expert on the implementation of new services, a customer segment specialist was asked to advise the project team on this matter.

6.3.2 Result and other relevant aspects

The new project set up consisted of five different parties: the innovation team, product innovation team, marketing, communication and possibly the technology partner. It was agreed upon that *if* the organization would continue with the same technology partner, it was necessary to have full access to project data and results. It was important to involve the communication department better this time to bring more internal and external attention and support for this new pilot. During the previous test the evaluation was carried out by the Innovation Team, this time an external party would be added to the

project team to do the research on the adoption of the service. Also a more clear definition of the pilot's success was needed.

During the development of the pilot it became clear that the communication department had doubts over the audio in PLUK3 and was difficult to involve. Regarding the content of this pilot it was decided to offer exclusive content in combination with a discount that would only be available for users of the service. Unfortunately this project was terminated during the development stage as it lacked organizational support and the possible discontinuation of the product related to the service. During the project it became clear that the product line, on which this project was based, was not profitable and was likely to be phased out. As a result, the project was cancelled a few weeks before it would be implemented in the store and was the least successful projects of the three PLUK pilots. During this pilot there was no customer involvement in any form.

6.4 Mobile scanning “AMC”

6.4.1 Pilot Introduction and Setup

This pilot started August 2007 and ended December 2007 at the Albert Heijn To Go in the Amsterdam Medical Centre (AMC). This pilot also made use of NFC technology and during this pilot 120 hospital employees were given an NFC mobile phone to try mobile scanning. This was organized as follows: customers scan the intelligent price tags with phones which contain an NFC chip with product information. The phone display shows the name and price of the scanned product, gives discount information and the total price of the scanned products. When the customer is finished the phone is put on a platter that reads the information from the phone and the customer can pay with a bankcard to finish the transaction.

6.4.2 Customer involvement

Similar with the other pilots, the technology or service was tested before the service actually went “live” to avoid operational disruption. Pilots should not be invasive and not interfere with the operation on a day to day business (this goes for customers as well as store employees). Before using the service in the store, employees tested the mobile phone and the service in the innovation café. These persons were later also involved during the project evaluation. As is depicted in figure 6.3 there

is employee involvement in the Development, Testing & Evaluation and Launch stage of the model. Customer involvement only takes place in the last two stages. During the beta tests customers were involved via various modes: discussions, interviews, surveys and observations. After a few weeks the results were monitored and customers were involved via discussions, surveys and user observations.

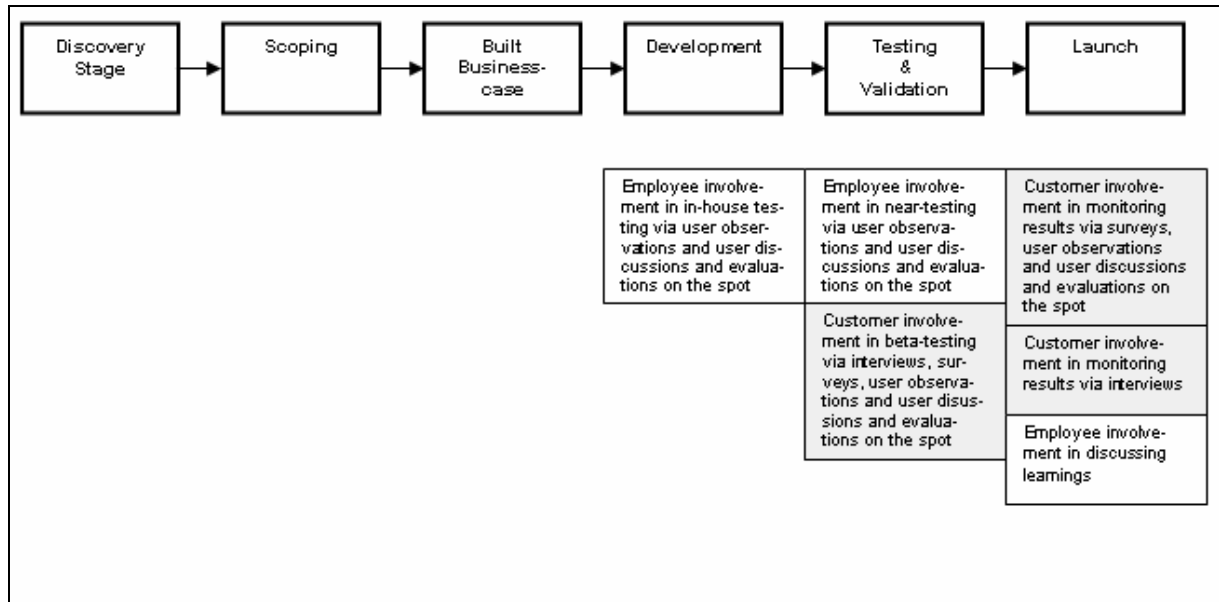


Fig 6.3 Customer Involvement in the Stage-Gate model for the AMC pilot

6.4.3 Result and other relevant aspects

Customers provided the following reasons to use mobile scanning and stated they will use the system if there are queues at the checkout, the system is easy and works perfectly and one is not in a hurry. Customers use a traditional checkout if there are no waiting lines, if they forgot to bring their phone or bankcard, if the product cannot be scanned and the amount is really low. The possibility to pass a waiting line and speed are the main reasons to use mobile scanning. Downsides of the system are that it is not very stable, being in the infant stage of development. Scanning and reading information from the phone sometimes gives difficulties and has to be done very precisely. The phone has to be held very close to the tags otherwise it doesn't work. A larger scanning range would be more convenient. Also there were many complaints about the pay pole, often there was a red light indicating there was something wrong and the system was down.

The objectives of this pilot were: testing the technology and finding out if customers would adopt this new service in the future and these objectives were met. Customers were enthusiastic because they

were under the assumption that the service added value to the shopping experience, because it was convenient, more efficient, and gave more control (e.g. could choose to avoid checkout). But there were some technological issues as well. The pay pole broke down often, scanning regularly failed and the system was not really stable in the beginning. Albert Voogd, the store operations director, visited the pilot and although he was very positive he indicated that the convenience of the service was partly unsatisfactory and he thought that the experience needed to be completed by adding mobile paying and a loyalty program. However the pilot was seen as a success and follow up pilot “mobile shopping” was carried out where mobile scanning and mobile paying were combined [27].

6.5 Mobile paying “Koopgoot”

6.5.1 Introduction

The mobile payment pilot in Rotterdam started September 2007 in cooperation with technology partners Payter, Intersolve and Equens. Originally the pilot would last 6 months and would be kept low-profile. Due to the extensive media attention the project duration changed and was extended. This pilot was setup to gain experience with a new mobile payment technology and to see how customers responded to this new payment service. The technology used in this pilot is NFC or Near Field Communication; a high-frequency short-range wireless communication method. This technology is used to enable payment procedures via a mobile phone. Because customers do not have to provide their PIN (personal identification number) the service is fast and simple. The system is a prepaid system with a maximum of 150 Euros. Customers only have to hold the mobile phone close to a reader and the payment is completed in a few seconds.

6.5.2 Customer involvement

Figure 6.4 shows that customer involvement only takes place in the last two stages of the model. Due to possible security and privacy concerns and issues the service in the Koopgoot project was extensively tested during in house tests, beta tests, near field tests and soon before it was implemented in the store. After all, negative customer experiences could harm Albert Heijn’s image and influence future pilots. Due to these security concerns and the customers’ sensitivity to them, customers were

only involved in the last test phase via interviews, surveys and observations. During the local launch customers were monitored via user observations and user discussions and evaluations on the spot.

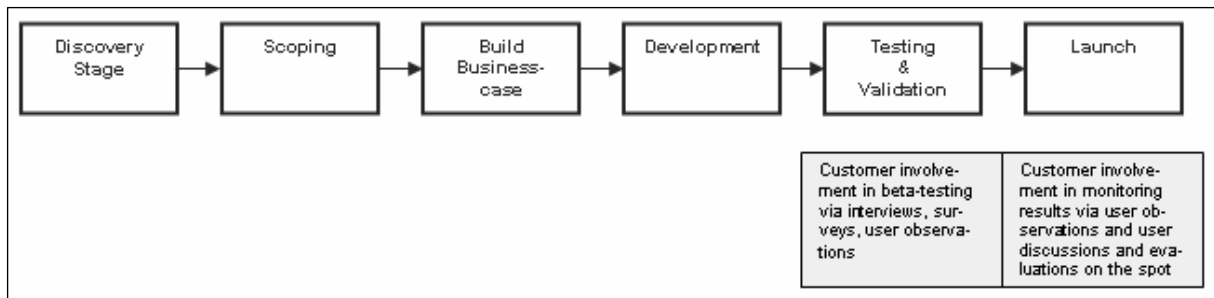


Fig 6.4 Customer Involvement in the Stage-Gate model for the Koopgoot pilot

6.5.3 Result and other relevant aspects

It was found that this service was a few seconds faster compared to paying with traditional payment services like a bank card or chip. Despite the fact that a few seconds might seem of little value, this development is very important for Albert Heijn and can be crucial for the implementation decision as these few seconds can result in big cost savings. Another finding was the stability of the system and that there were hardly any malfunctions. The pilot started with 150 participants which gradually increased to 400 during the first weeks and would reach about a 1000 over time. The sales figures and the amount of transactions increased as well over the next weeks. Surprisingly there was a decrease in the amount per transaction. This might indicate that this service was used as an alternative for small cash payments. A more concerning result were safety concerns. Customers worried that the phone used internet to carry out the payment and might result in unexpected costs or possibly safety issues. Many customers indicated they did not want another phone and preferred to use their own phone and that was one reason why it was difficult to find participants for this pilot in the beginning. For this pilot customers were given a new phone with the right configuration and with some credit to cover the costs. A big disadvantage of this prepaid structure was the maximum amount of 150 Euro. Also the cost structure of the service is a drawback. Upgrading the account costs almost one Euro and the monthly fee was €2,50. Albert Heijn believed that these costs could prevent large scale acceptance. Also it was questioned that this was an all-embracing solution because of other technological developments in the market, for instance the rise of payment services using biometric technology (paying with a fingerprint). Without added functionality the pilot seemed incomplete. In this pilot the

mobile scanning option was not integrated and that would be the most logical extension to create real added value. Also it was too early to define this as the generally accepted standard for the future because the role of the technology partner in this market is unclear as other players are developing similar systems as well.

Although there was no evaluation yet at the end of the internship and writing of the thesis, the project ended July 2009, the pilot itself was successful as it already provided some useful insights as discussed before. Also, partly because of the extended media attention this pilot was prolonged. However there were some preliminary conclusions:

- The technology is mature, the system is stable and there are hardly any malfunctions and no security issues or risks.
- The service makes the checkout process more efficient and saves a few seconds on the total transaction time.
- Evidence pointed in the direction that this new service could be an alternative for small cash payments.

But there were also some issues:

- Customers preferred their own phone.
- Customers were afraid that using internet for this service would cost them (extra) money and had safety concerns.
- The service was expensive and could prevent large scale adoption from a company as well as a user perspective.
- There was a limited amount of money that could be put "on" the phone.
- There were doubts if this was an all embracing solution: for instance it would be more logical to integrate this with mobile scanning.
- There was uncertainty in the market about standards and other players.

6.6 Self scan project "Tot ziens"

6.6.1 Introduction

The biggest dissatisfier for customers is waiting in line at the checkout. In 2004 the project with the codename "Tot ziens" (good bye) started. According to Mr. Bahreini, the leader of this project "everyone in the market is busy with reducing waiting lines at the checkout". The total shopping experience of the customer is defined by the first and last thirty seconds where the customer decides: "*Can I park my car and can I leave quickly?*". Therefore reducing queues and waiting time at

checkouts were the most important motivation to explore services that could reduce these annoyances. Within this project, several pilots were conducted in Utrecht, Leusden and Amersfoort to explore self scanning with different setups and technology. Two different self scanning types or different technologies were tested: “Hand scanning” or “Self scan”, a portable scanning unit with a payment unit and “Express scanning”, a self scan checkout and payment unit. Using the first setup a customer scans the products during shopping and pays at the payment unit. When the customer uses Express scanning, the products are scanned *after* shopping and then paid for at the payment unit. The first scanners are mobile and the second fixed. The mobile scanner proved to be the most successful and the technology was implemented throughout stores all over the country end 2006.

6.6.2 Customer involvement

Based upon an interview with the project manager it is known that the degree of customer involvement was higher than the previous pilots and customers were involved earlier throughout the development process. However, not all modes of customer interaction were clear and similar to other pilots. Customer involvement could be improved especially during the first stages. Figure 6.5 shows the stages where customers are involved and in what manner.

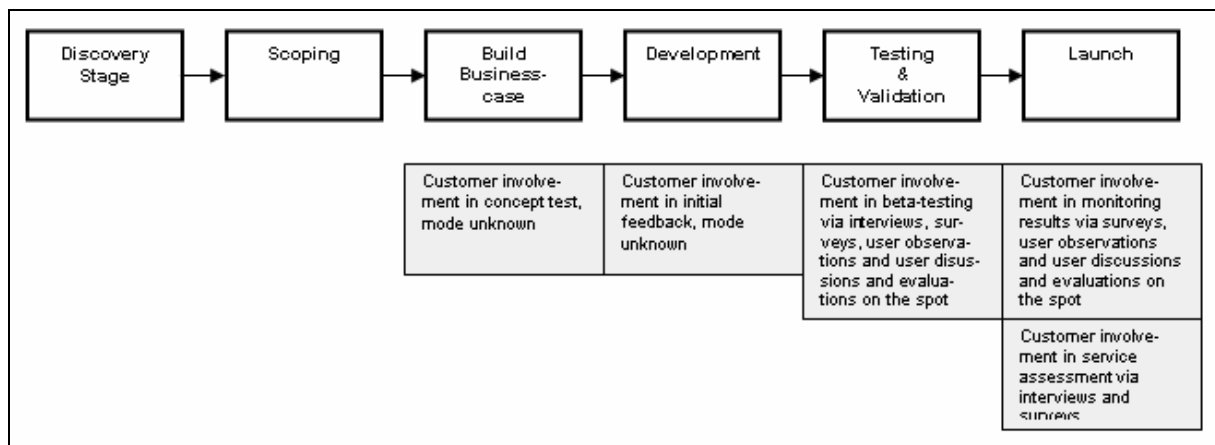


Fig 6.5 Customer Involvement in the Stage- Gate model for the Self scan pilot

6.6.3 Result and other relevant aspects

Express Scanning was particularly useful for customers with a few items. The biggest motivations for Albert Heijn to test these services are not primarily time and cost saving grounds. Other reasons are equally or even more important. Providing extra service and convenience to customers were the mean

reasons. Self scan technology is three times more expensive than a standard checkout and besides that 40% of the total products must be scanned for the investment to be successful [8]. Though, the efficiency motive is questionable because research showed that customers scan items 6 times slower than checkout employees [9]. But customers notice the benefits, as they can scan at their own pace and are independent of the employees. During the scanning process customers can see what they have to pay and can pack their groceries immediately after the product has been scanned. This saves a lot of double work, because after scanning the customer only has to go to the payment unit. Within one minute the payment procedure is finished. In the future self scan technology will replace a lot of the traditional checkouts. Although 50% of the customers preferred self scan over employee service, still a large customer group opts for the traditional service. During a pilot in Utrecht all the checkouts were replaced overnight by scanning and payment units and this pilot turned into a nightmare. Although the customers were informed, they were taken by surprise because of the sudden change. Due to the chaos that occurred, the store had to close. After many upset customers and lots of negative reactions, the store replaced the self scan with the old checkouts. Albert Heijn wanted to see how far they could go and obviously this was too far, but the pilot was very instructive. Customers wanted to be able to choose. In this pilot store employees would scan the customers' products and they had to go to a payment unit afterwards. The system that was implemented is full self-service and was perceived as not very convenient for small shoppings but fulfills the need of large shoppers.

Although the test was instructive, the pilot in Utrecht was "once and never again". The changes were too fast and too big. Also the lack of choice and lack of added value led to misunderstanding and hindered acceptance. The overall evaluation of the pilots was very positive. This goes for the overall experience as well for the speed of the checkout process. Self scanning was found more successful than Express scanning because customers thought that it was fun, timesaving, made traditional checkouts redundant and gave them more control. For example they could define their own pace and could somewhat keep an overview of the costs, because a total price of the scanned products was given real time. Customers found the new situation an improvement over the old situation i.e. the people that used self scan doubled. Reasons for this were promotional activities by store employees and the absence of waiting lines for the payment units (this was the case at the scan checkout or "Express

Scanning”). Also, there was no loyalty card or registration needed to participate. But, most important, a critical mass was using the system, a threshold of users was needed for others to be convinced. “If they all do it, maybe I should give it a try”. However there were also some downsides to self scanning. For instance customers had trouble with multitasking. Customers have to scan, pack groceries and interact with other customers and employees all at the same time. Besides that customers were afraid of forgetting to scan items (“theft”).

In conclusion, Express scanning was less popular than self scanning based on efficiency and convenience criteria. Express scanning has no added value over self scanning and there is no need for Express scanning if the self scan alternative is offered. Self scanning can be used for “bigger” customers who use a trolley and “smaller” customers who use a basket. Also customers preferred to use one system rather than two. Besides that, there was room for some organizational improvements. The major reasons for customers to fail to use self scan technology were: unfamiliarity, ignorance, fear of “(new) technology” and inability to see benefits.

Chapter 7 Results and Discussion

In this chapter an overview of the results from the previous chapter is presented. Followed by a discussion on the possible relation between adherence to the pilot model, and the degree of customer involvement. Finally other relevant factors to successful MSD are brought forward.

7.1 Results

In table 7.1 on the next page an overview is presented of the results from the pilot projects of chapter 6. This overview shows the degree of customer involvement during different stages throughout the project and states whether the project is implemented in stores, the project was successful, its adherence to the model and the degree of customer involvement. The degree of customer involvement is qualified as low (involvement in 1 or 2 stages), medium (involvement in 3 or 4 stages) and high (5 or 6 stages). The intensity of involvement is the sum of the modes in which employees and customers are involved throughout the stages. Success can be seen from two different angles, one being the organisation and second the customer. A successful pilot from an organizational point of view is a pilot where useful lessons for future pilots or services can be learnt even if it is a “disaster”. A successful pilot from a customers’ point of view is one that results in a value adding service that is implemented throughout the stores, and is meant when the pilot’s success is determined. Since large and professional organisations, such as Albert Heijn, innovate in an organised manner, innovation is not a random and ad hoc process. Therefore, the adherence to the model is good on average, or in other words, every applicable stage is followed in the right order. If the adherence is “moderate” then a stage is skipped or followed in the wrong order. If stages are skipped and followed in the wrong order, the adherence is qualified as “bad”.

7.1.1 Model Adherence and Pilot Success.

The idea for the Pluk 1 pilot originated from one of the members of the innovation team and the technology supplier. Only during preparatory and executive stages employees were involved. The fifth stage was skipped, since this phase was seen as redundant in this small scale test and would be conducted later in larger pilot setup. The last stage or commercialization stage is not applicable to this

Table 7.1 Overview Results

Stage	Customer Involvement in:	Pluk 1	Pluk 2	Pluk 3 **	AMC	Koopgoot	SelfScan
Discovery	Idea Generation						
	Project Selection						
Scoping	Evaluate Idea						
Business Case	Concept Test						C***
Development	Prototyping	E 1+4*	E 1+4+5*	n/a			x
	Initial Customer Feedback	E 1+4*	E 1+4+5*	n/a	n/a	n/a	C***
	In House Testing	E 1+4*	E 1+5*	n/a	E 1+4*		
Testing & Evaluation	Extend In House Testing (near testing)	n/a	C 1+5	n/a	E 1+4*		
	Customer Field Trials (beta testing)	n/a	C 1+2+3+4	n/a	C 1+2+3+4	C 2+3+4	C 2+3+4
	(Test Market / Trial Sell)	n/a	n/a	n/a	n/a	n/a	n/a
Launch	Train Sales	n/a		n/a	n/a	n/a	n/a
	Support Personnel	n/a		n/a			
	Monitor Results	n/a	n/a	n/a	C 1+3+4	C 1+4	C3
	Service Assessment	E 5	E 5	n/a	C 2		
	Discuss Learnings	E 5	E 5	n/a	E 5		

Degree of customer involvement	Low	Low	Absent	Low	Low	Medium
Intensity of involvement	8	14	0	13	5	Unknown
Success	No	No	No	No	No	Yes
Implementation level	No	Local	No	Local	Local	Stores
Adherence to the model	Moderate	Good	Bad	Good	Good	Good

Legend: C Customer involvement
 E Employee involvement
 n/a Not applicable (activity), either the stage is not part of development process at Albert Heijn or the project was terminated before finishing the whole development process
 1 Spontaneous User discussion / Evaluation on the spot
 2 Interview
 3 Survey
 4 User observation
 5 Meeting
 * Tested in house on employees in innovation cafe
 ** Project terminated before prototype
 *** Mode of customer interaction unknown

pilot as there is nothing to be sold or implemented. In conclusion the model was followed except for one stage, 5, which was skipped because it was seen as redundant; therefore the adherence to the model is qualified as moderate. The Pluk 2 pilot went through every applicable stage of the model in the right order and therefore the adherence is qualified as good.

As Pluk 3 was terminated during the development stage we can only address the adherence to the model for the first stages. Although the decision for this project was not determined in the idea process meeting, there was approval for the budget and continuation of this pilot from the innovation manager. During this time there were changes in the innovation process and this project did not follow the new standard and it moved from the second to the third stage without passing the official approval and therefore the adherence to the model is labeled as “bad”. The AMC pilot did follow all the applicable stages and therefore the adherence to the stage gate model is qualified as good. The adherence to the model in the Koopgoot pilot is qualified good as this pilot showed good fit with the proposed model and followed all relevant stages. All in all there is room for improvement in this pilot, there will be no nationwide implementation and no follow up pilot soon. From a customer perspective most pilots were not successful as they did not result in an implementation throughout stores. Since self scan was implemented nationwide this project is the only “successful” pilot. The self scan project was completed before the internship and based upon internal company information [1] it is assumed this project followed the model.

In table 7.1 it is shown that although the adherence to the model is good this does not imply the project is successful. From the four projects that had good model fit only one project was a success in the sense that it was implemented nationwide. The project not following the model being the least successful confirms the assumed link between model adherence and project success. This suggests that there might be a relation but possibly there also other important factors that influence MSD.

7.1.2 Customer Involvement Pilots

In table 7.1 an overview is presented of customer involvement throughout the pilot projects. The most interesting detail is the lack of customer involvement in the first three stages of the development process. None of the projects had customers involved in the beginning and neither did the idea

originate from customers. All innovations were adopted from (headquarter) employees and / or suppliers, meaning technology driven. This was also the case for all other innovations in the innovation café. Figure 7.1 (see next page) shows that customer involvement often starts during the development phase and continues in the fifth phase and again is absent during “launch”. Although almost all the projects were non commercial projects (not directly intended to earn money, after all nothing was sold) the evaluation activities of this phase are relevant and useful for future services, therefore customer involvement is preferred. The Self scan project is an exception and has customer involvement throughout four stages starting from the “Scoping” stage. This is the project where customer involvement is the most intense and not surprisingly is the only successful pilot.

When the success of the project is compared to the degree of customer involvement there seems to be a relation between the degree of customer involvement and success of the pilot. For instance, the projects with no involvement (Pluk 1 and 3) are not successful and are not implemented in stores. The projects with the lowest degree of involvement, Pluk 2 and Koopgoot involve customers during two stages, are not successful in the sense that they are not implemented nation wide, but are implemented on a local scale. The projects with the highest involvement, AMC (during two stages, but with the most modes of involvement) and Self scan (involvement in four stages), are the most successful pilots. Although the AMC pilot was only implemented on a local scale, the pilot was continued in another store with a larger setup and therefore, somewhat successful. The pilot is not likely to be implemented in the near future because the technology is not widely available [28, 29]. The projects with higher customer involvement intensity, Pluk 2 (14) and AMC (13) both have a follow up in a more extended pilot. This could indicate that not only the stage but also the intensity of customer involvement influences the project’s success. So, the projects that are implemented all have customer involvement in two or more stages. Besides this, all models followed the suggested stage gate model. This follows the expected relation between customer involvement and project success. So it seems that following the model is no guarantee for successful services, but a condition that should be met. If the model is not followed chances of success are little. For customer involvement there appears to be a relation between the degree and intensity of involvement and success. The more customers are involved and also in different ways, the chance of a successful outcome seems higher.

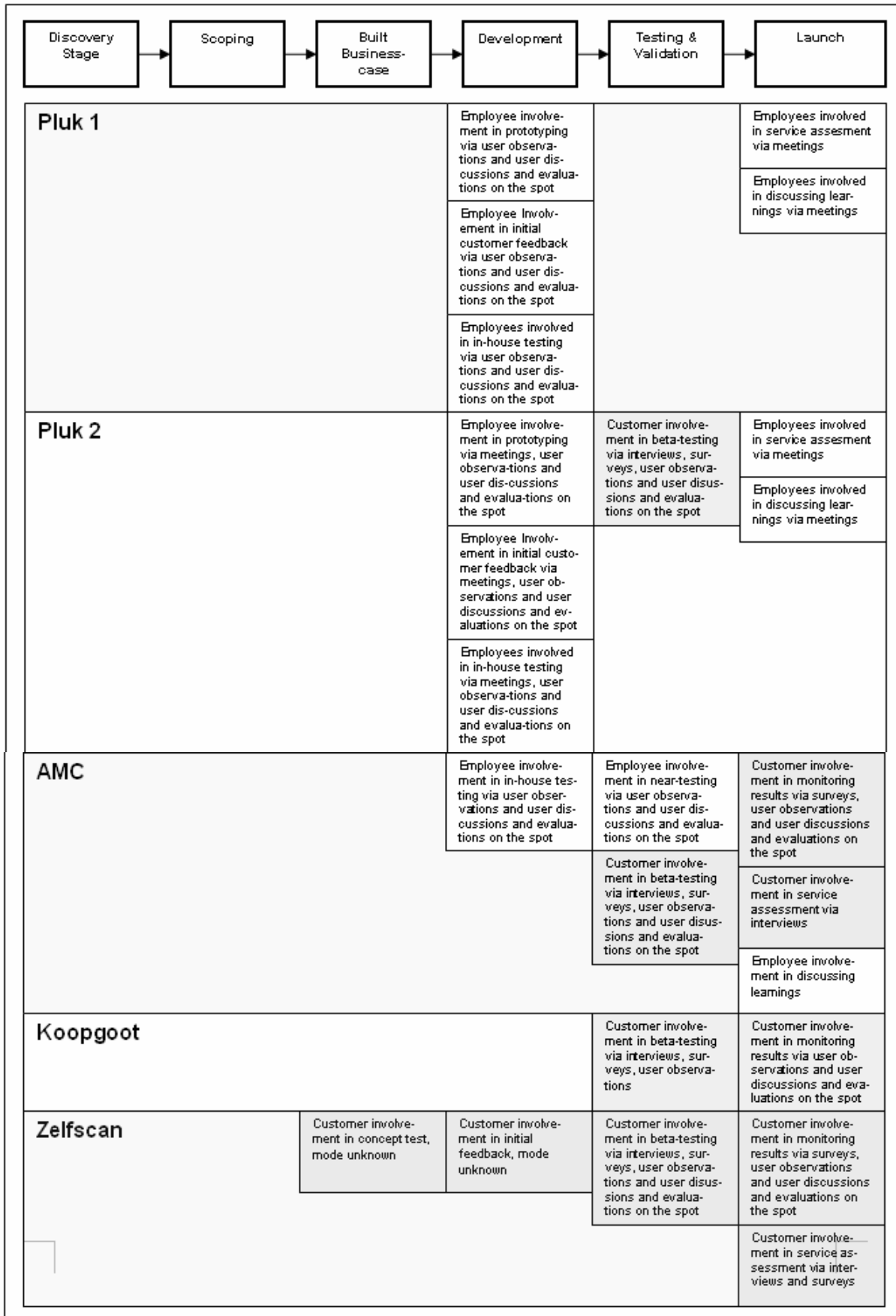


Fig 7.1 Customer involvement throughout the pilots

7.2 Other Relevant Factors

The pilots did also reveal information about the service development from another perspective. Not only customer involvement might influence the (mobile) service development process, also the organization or customer affects MSD. This concerns for example the (innovation) culture in the organization and the way the innovation process in general is managed. This paragraph provides an overview of other than the hypothesised factors that were found to influence the MSD process.

7.2.1 Culture: not an innovative mindset

Although the organisation has a lot of experience with successful product innovations, service innovation is a relatively new phenomenon. The pilots show that although the company wants to make everybody an innovator, the innovations were primarily driven by members of the innovation team. Despite of the efforts to stimulate company wide innovation (see Appendix I) the mindset of the people is not innovative and departments are very busy with their day to day activities. Instead of Innovation being “pushed” it should be “pulled”. Therefore a change is needed in the organization of the innovation team and a cultural change is needed to involve different departments in order to make innovation a priority. But a companywide culture change is a timely and costly matter. The innovation team should be a “linking pin” and bring people together and not be the sole initiator. The innovation team is now an island in the organization. A possible reason is the homogeneity of the team. One half of the innovation members come from the IT-department and the other half from an external consultancy partner that guides the innovation process. There is no real connection between innovation and Albert Heijn. It is not a matter of man power but a mental attitude.

7.2.2 Fear of the unknown

Another reason for the lack of interest in innovation is fear. Departments see the innovation team as a threat and have no real image of what this team does and where it belongs. A reason for this could be the very short existence of the department within the company. Even as the team works parallel with other departments, there is no real cooperation and communication. Also a fear exists that the innovation team takes away all the “fun” activities. Despite the efforts from the team to give innovation a face and create organizational awareness by means of an “innovation cafe”, departments

have trouble finding the team. Organizing Friday afternoon drinks also did not have a positive effect. Even though there is support from the management and there are a budget and means to innovate, there is no “cross-fertilization”.

7.2.3 Organization of Innovation

There are no clear objectives for the Innovation Team, so it is hard to determine whether a pilot is a success. The innovation process is still very flexible and has no real milestones. It is not exactly clear when an idea will become a business case and the initiative and idea generating meetings are entangled and unstructured. Neither is there a mandate on innovation. People are 99% of their time busy with their daily activities and do not have time for “tomorrow”. Also the innovation team is the only responsible department for service innovation. Moreover, an innovative mindset cannot be created by enforcement and should come from within. An innovation push should become an innovation pull.

7.2.4 User characteristics

During all the pilots it became clear how important added value and communication are. Customers seem to be motivated to use a service only if there is a clear advantage. Especially financial gain (e.g. discounts or promotions) or exclusive content are decisive for the success of the service. Also convenience or efficiency (e.g. time saving) appears to be crucial for the adoption of the service. However, the service can meet all these requirements but without the right communication and service design (e.g. usability) chances on success are little. People need to be made aware of the existence of the service and the benefits. Another important finding was the customers’ concern about privacy and other safety issues. It is obvious that these are important for the success of the service and need to be taken into account by integrating this in communication about the service.

7.3 Discussion

The literature showed that customer involvement and following the proposed model are expected to be crucial for the success of the service. This was supported from the analysis of the pilots. Although they were successful from an organizational perspective (e.g. the process itself was already instructional and the outcome was a side issue) there was often a lack of real added value for customers and only one pilot was implemented in stores and this project started long before the new innovation process.

However, Albert Heijn is under the assumption that many innovations fail and often only 1 in 100 ideas is a success. This doesn't stop the company to innovate, because these "failures" can be very instructive and helpful for future tests.

A likely cause for moderate success is the lack of customer involvement throughout the mobile service development process. This particularly holds for the beginning of the process or in terms of the model the "idea" and "scoping stage", the most crucial stages for the success of the service according to Cooper (2000). But, customer involvement could also be very useful throughout the other stages. For example in the evaluation activities, customer involvement would be desirable since their experiences could be useful for future tests. Therefore timely and abundant customer involvement could be a determinant of successful mobile service development. However, customer involvement is not the sole decisive factor. Organizational challenges could inhibit successful service development as well. For example cultural challenges like resistance, fear and ignorance could restrict fruitful cooperation and thus impede the development process. Therefore it is also important to overcome these challenges by organizing communication, education and organization of innovation in the organization.

Also the organization of the innovation process itself is crucial for the process. Since the innovation process was recently implemented the organization was still learning how to innovate. The process was not established and fully developed and implemented and therefore has still room for improvements. Although a close adherence to the model was no guarantee for success, departure or interruption appears to hinder successful MSD. These pilots also brought user related challenges to light. For instance, safety or design issues, but the most salient was the demand for financial or efficiency gains. In future pilots it is important to motivate customers with discounts or promotions.

To conclude, customers are the *raison d'être*, if they do not "buy" it, there is no need to "make" it. Finding out as early as possible what their demands and needs are is fundamental for successful innovations. This especially holds for mobile service development because of its inherent special characteristics. But, to be capable of this, the organization should be competent and have the means to organize, develop and manage innovations. Ergo, mobile service development cannot flourish without one of them. Therefore customer involvement in combination with organizational and user factors determines the success of mobile services.

Chapter 8 Conclusion

This chapter summarizes the main outcome of the research, proposes suggestions to increase successful MSD and discusses limitations, implications and directions for future research.

8.1 Conclusion

The previous chapter showed that customer involvement is preached but not fully practiced in the organization. Customer involvement is scarce throughout the MSD process and customers are not involved throughout all the stages. The main purpose of this research was to find out whether following the proposed model would lead to more successful services and to find out what effect customer involvement has on the success of MSD. The previous chapter showed that following the model is not proportional to the successful outcome of MSD, but deviation from the model is likely to hinder successful MSD. The most striking feature compared to normal services is the lack of customer involvement in the early stages of the model. Especially since it appears that timely and plentiful customer involvement is related to a successful MSD, based upon the literature and supported by the results from the pilots. However, more research is needed to confirm both relationships. Due to the special characteristics of the industry other aspects also seem relevant for successful MSD. Customers in this industry seem to be particular sensitive to financial gains and motivated by saving money or time and this should be taken into account in MSD. Also organization aspects appear related to successful MSD and it seems that abundant and clear communication, proper organization of the innovation process and fruitful cooperation should reach certain thresholds.

8.2 Vision and Implications

Although much effort has been put into organizing the innovation process and fostering innovation throughout the company by creating an innovative climate, there is still room for improvement. The research put forward that customers are not involved during early and crucial stages of the innovation process and more and different modes of user interaction can have a positive effect on a successful outcome because this enables early detection of users' demands and needs (Edelmann et al., 2006).

An explanation for the lack of customer involvement in the early stages of MSD is that users find it difficult to articulate their needs when high-tech products are concerned and this complicates involving customers (Mohr, 2005). The company could perceive this as not so useful or impractical. Also the company could be under the assumption that customers should not be bothered with difficult technology and unfinished services that are hard to understand or not ready to be used. Maybe the company is afraid to involve customers early during the process because of the risk of failure or exposing sensitive data and so on. But, lacking customer involvement during the early stages of MSD could lead to a poor definition of requirements and in the end lead to less successful or unsuccessful services.

Customer involvement is especially important for mobile services since these services have some extra difficulties to overcome compared to traditional services. For instance technological and user challenges related to MSD and problems relating to mobile services' inherent characteristics. For example, due to the personalization characteristic, information mobile services can be adjusted and specified to the customer based upon personal data. This is perceived by some customers as unwanted or more vulnerable to security issues. This perception could be strengthened by the availability or "being available anywhere and anytime" principle.

Although it was intended, the innovation cafe, the perfect facility to invite customers, is hardly used for any customer visits or idea generating sessions. Beside this, the implementation of the new innovation process and the epitome of this new view on innovation, the innovation cafe, were both recent and new developments. Both of them need time to mature. Moreover, the organization needs time to get used and adjust to the new situation. Education and communication could support this. Effective and abundant companywide communication could take away preconceptions and wrong assumptions. The innovation cafe is the perfect communication and education tool to create commitment and foster cooperation between all departments. The objectives of mobile service development (or innovation in general) must be common, mutually understood. **A shared vision and goal** contributes to achieve success (Heikkinen & Still, 2008). **Cooperation** is necessary to overcome specific MSD challenges (Heikkinen & Still, 2008). However, new ways must be found to more actively involve departments like marketing and communication to cooperate.

One of the reasons that customer involvement occurs later in the development process is that Albert Heijn uses mature technology. They do not want (and need) to reinvent the wheel and carefully need to consider the company image without forfeiting its innovativeness, but possibly limit the success of the service by doing so.

Designing risk reduction strategies, for example securing mobile infrastructures and protecting (personal) data, could decrease risk perception (Kleijnen et al., 2007, 2009; Siau et al. 2001, 2003). Users are very concerned with personal information and they need to be assured (in the media) that their personal information is secure and that wireless transactions are safe. Also supermarkets are not technology intensive environments and mobile service innovations are relatively new. Customers are not used to be involved in these kinds of tests during their shopping and might show resistance or not be the perfect test group. Therefore, when customers are involved in pilots it is important to **carry out promotional activities and create awareness by providing more information to customers** (Kleijnen et al., 2007). Also having **clear tasks**, where the role of the participants is clear, is helpful (Heikkinen & Still, 2008). Moreover, customers must immediately see real added value (saves money, saves time) otherwise they will not be interested. It is utmost important to **pay attention to cost and time benefits**. Research indicates that retail customers seem more focused on costs than in other service industries (Kleijnen et al., 2007). Besides this, retail customers are time-conscious and informing them about time related benefits is also very important (Kleijnen et al., 2007). **Creating a positive value perception is the basic principle on which mobile service development should be grounded**. For instance convenience and user control have positive effect on value perception (Kleijnen et al., 2007). Kourouthanassis & Roussos (2003), found in their research on a mobile service for a grocery store that certain service characteristics received favorable responses. Features that helped customers save time and money were most favorable. Minimizing checkout time appears to be the most attractive feature, followed by the capability to continuously monitor the total value of the shopping cart contents. The possibility to inspect additional product information and the automated construction of a regular shopping list were perceived as very useful. Users appreciated the system's navigation features and easy access to promotions, believing they improved the shopping visit's effectiveness. They also saw the fast checkout features as especially desirable, having identified

checkout wait time as a significant factor in their decision to shop at a particular store. Customers need to “see” the service because “users don’t know what they want until they see it”. Therefore early concepts and prototypes are important. Consequently, customers need to be involved more frequent and earlier during different stages and in different modes. Especially customer input could be extremely valuable during the early stages of the development process and idea generating activities such as brainstorming or other group creativity ideas.

To ensure consumer input through the various stages of the service development process an implementation of an adjusted stage gate model could support this. The spiral model, a variation on the original stage-gate model, assures customer involvement throughout the development process in an iterative way. Spiral development “deals with the need to get mock-ups or prototypes in front of customers early in the process, and seek fast feedback. Spiral development also allows for smart-and-fast failures; these spirals are relatively inexpensive, and often the first few spirals result in negative responses. Not a problem: revise, rebuild and test again via the next spiral” (Cooper, 2008). The adjusted model is depicted in figure 8.1.

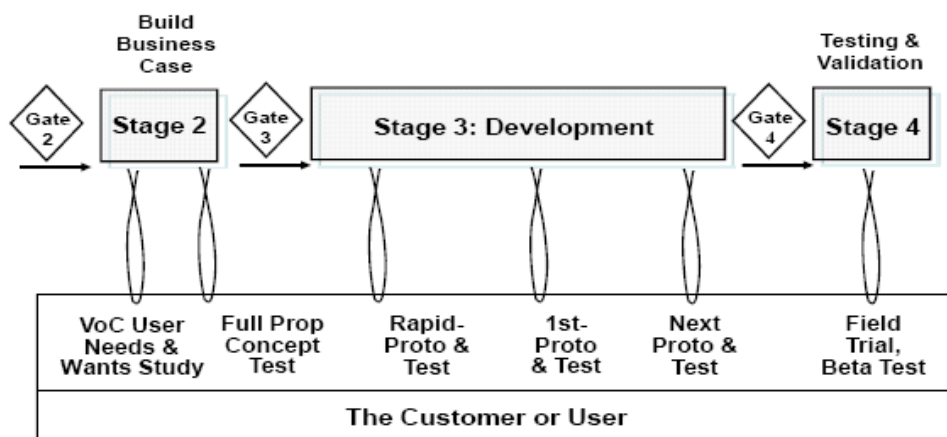


Fig. 8.1 Ensuring customer involvement throughout the stage gate model

This model seems more appropriate for MSD in a retail environment as it ensures customer involvement throughout earlier stages of the process. Besides this, the model pledges speedy and user friendly design (Cooper, 2008). This is important, as **speed in development** is argued to be of high importance in MSD (Blazevic et al., 2003). Besides this, **providing simple and user friendly service design** is additionally argued to positively influence the MSD process. Alahuhta (2005), Kleijnen et al.

(2007) and Siau, (2001; p.9) state that “users need a simple experience, directly relevant to their mobile needs and enjoy the benefits of immediacy” (Siau: p.9).

This adjusted model could serve as framework to MSD, but could be improved to be more suitable for mobile services by implementing the spiral design in the first two stages “Discovery” and “Scoping” as well. As is shown in figure 4.1 in Chapter 4, the first stage suggests the most activities to involve customers in service development as this is a crucial stage of the model. However, not all activities are applicable to MSD in this retail environment. For example feedback on financial and sales data is not applicable for these services as nothing is being sold and the service is an extra service to enhance the customers’ shopping experience. Still feedback on the following can be extremely useful: proposed plan, user needs, requirements, adoption criteria, problems and possibly their solution. Besides this customers could be useful in idea generating activities. These activities should be added to the first stage of the model and completed before moving to the next. Figure 8.2 shows an example of how customer involvement could be implemented in the first two stages of the model (note: not all activities suggested by Alam (2000), in fig 4.1, p.25 are integrated in the model). The exact activities depend on the complexity and nature of the pilot (e.g. for a commercial mobile service feedback on financial data could be desirable). Additional to prototyping role playing and simulations in later stages could be added and used to gain better understanding of the customer (Mohr, 2005).

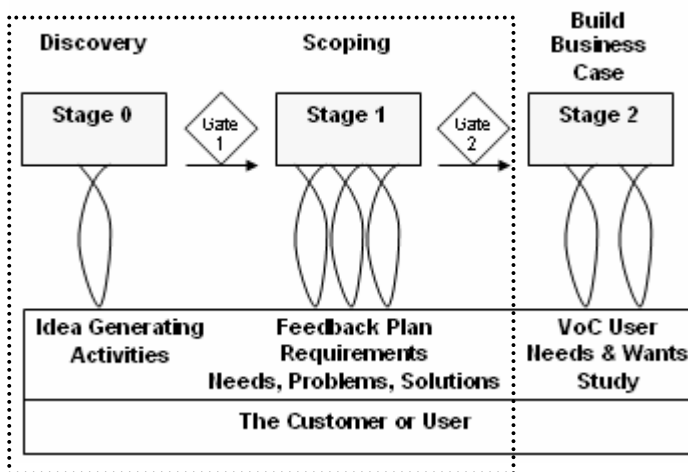


Figure 8.2 Extended spiral development for early stages of the stage-gate model

Another way to organize customer involvement throughout this framework is the use of cross-functional teams (Mohr, 2005). Besides team members from different functional areas, customers should be actively involved in these teams and participate throughout every stage of the model.

In conclusion, although the literature on mobile service development is scarce and not conclusive on how to solve MSD challenges, the current body of research does provide some insights on this matter and prescribes basic guidelines. These literature guidelines combined with the learnings from the pilot projects, where customer centered innovation is quintessential, could assist future mobile service development within the company and raise the chances of successful outcomes.

8.3 Limitations

As for any study hold, it must be evaluated in the light of its limitations. This research is no exception and several limitations arise from the nature of this research. The chosen methodology: an explorative case study (in combination with a literature review) might raise questions about the validity of the research. Construct validity could be problematic in case studies and therefore multiple sources of evidence are chosen to restrict subjectivity (Yin, 2003). Second, the setting and subject of the research, a food retailer developing non commercial services, is new and not well understood yet. Supermarket customers are price aware and in general not particularly interested in, and focused on new technology. As a consequence the results of this study might not be applicable to other retailing industries. Third, this research has been carried out in a Dutch context. Although no specifically Dutch standpoint was taken deliberately, this point of view influences the results and outcome of the research to some extent and therefore deserves attention. All these limitations are points of attention for future research and therefore further (empirical) research is necessary.

Customer involvement in MSD is new and has not been investigated before. Although mobile commerce has the potential to improve the performance of organizations, there are no business models unique to the mobile environment (Siau et al., 2003). The research at hand is an exploratory study that attempted to introduce a new topic within the service literature and retailing business and accordingly must be viewed as a prelude to future research.

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Links

The hyperlinks listed below are retrieved between July 2007 and September 2009 and were all working as of the completion of this thesis.

- [1] <http://intranet.ah.nl>
- [2] http://www.trouw.nl/krantenarchief/2005/09/27/2269505/Supermarktklanten_radeloos_met_doe-het-maar-zelfkassa_.html
- [3] <http://www.emerce.nl/nieuws.jsp?id=2072359>
- [4] http://www.rabomobiel.nl/rabo_mobiel
- [5] <http://www.emerce.nl/nieuws.jsp?id=1851902>
- [6] http://www.rabobankgroep.nl/asp/persbericht/magazine_met_storyboxen.asp?node_id=14889&version_id=0
- [7] <http://www.prod-dev.com/clients.php>
- [8] http://www.distrifood.nl/bedrijfsvoering/id54049756/ah_en_c1000_zelfscan_is_service.html
- [9] http://www.distrifood.nl/bedrijfsvoering/id54037819/klant_scant_zes_keer_trager_dan_caissiere.html
- [10] <http://www.ah.nl/albertheijn/article.jsp?id=433908>
- [11] <http://www.ah.nl/kokenmet/>
- [12] <http://www.ah.nl/biologisch>
- [13] <http://www.ah.nl/keuzeklavertje/>
- [14] <http://www.ah.nl/allerhande/kinderrecepten/index.jsp?course=&title=&source=&id=119072&page=1>
- [15] <http://www.ah.nl/recepten/zoek?rq=poffertjesspiessen>
- [16] <http://www.ah.nl/recepten/recept?id=119062&rq=funpatatzakken>
- [17] www.leopards-leap.com
- [18] www.rosemountestate.com
- [19] www.jacobscreek.com
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- [22] <http://www.ah.nl/grill-en-steak>
- [23] www.pluk.nl
- [24] <http://www.nrc.nl/economie/article518536.ece>
- [25] http://www.distrifood.nl/formules/id101-28706/albert_heijn_staakt_prijzenoorlog.html
- [26] <http://www.future-store.org>
- [27] <http://www.distrifood.nl/web/Reportages/Foto-artikel-pagina/AH-betalen-en-scannen-met-mobieltje.htm>
- [28] <http://www.ah.nl/albertheijn/persberichten/article.jsp?id=495016>
- [29] <http://webwereld.nl/nieuws/56479/albert-heijn-zet-betalen-met-vingerafdruk-in-de-koelkast.html>

Appendix I History, Strategy and Store Formats

In this Appendix additional information can be found on Albert Heijn's history, strategy and store formats.

AI.1 Historical background

The company was founded in 1887 in Oostzaan, The Netherlands and started out as a family business. Nowadays the Albert Heijn headquarters is based in Zaandam, not far from the location of the first grocery store. The company owes their name to the founder, Mr. Albert Heijn senior, hence the name Albert Heijn. In 1887 the first Albert Heijn store opens in Zaandam. From that time the company grew from a family business with only a few stores, to the largest food retailer in the Netherlands at the beginning of the 21st century.

Innovation or an "Innovative Mindset" as Albert Heijn has put it into words is one of the six core values of Albert Heijn. The other five core values are "Act Customer", "Engaged Associates", "Integrity Always", "One Team" and "Passion for Business". Traditionally the company highly valued innovative activities. And was in many ways the first to introduce product and service innovations in the Netherlands. In 1952 the first self-service store was opened in Schiedam [1, 10]. At that point in time this was a revolutionary store concept, which was followed only a few years later with the first "supermarket". Albert Heijn was the first food retailer to familiarize Dutch customers with products like sherry, kiwifruit and Italian cuisine, before unknown products to the Dutch market. The company also set a trend in the Dutch and later European retailing landscape by being the first to introduce the barcode scanning system in Europe in the mid 70's (Jones, 1985). Ab Heijn, the grandson of the company's founder was one of the supporters or "champions" of the introduction of the bar code in the Netherlands and said "we find it an honor to bring this kind of innovations to the market" [1]. These examples nicely illustrate the innovative climate in the company. Another example of a service innovation is the introduction of the hand terminal in 1979, which streamlined in-store order handling activities for store personnel. In 1992 Albert Heijn was the first food retailer to adopt an electronic debit card payment system (Jonker & Kettenis, 2007). To quote Dick Boer: "Albert Heijn pioneered the development of the supermarket in The Netherlands". The last 5 years steam meals, self-scan, "pay-poles" (Dutch: betaalpaal), auto-replenishment, the new replenishment system and "Triple-O", the automated distribution centre can be seen as examples of innovations that can be added to this list.

AI.2 Strategy

Treacy and Wiersema (1993; 1995) define a successful organization is an organization, when compared to its competitors, which focuses on three qualities or value propositions:

- Operational Excellence; being operationally more dexterous than the competition i.e. producing more efficient hence cheaper.
- Product Leadership; having a better product than your rivals
- Customer Intimacy; having customers truly have faith in your company

All three qualities must reach a certain threshold and a company should excel at only one. The choice of value discipline or strategy is very important for the organization and influences the entire company and for this reason defines its behavior and identity (Treacy and Wiersema, 1995). Choosing a strategy is making the decision what makes your company special. What value discipline is the companies discerning capacity? There are three ways or disciplines that companies can follow to discern themselves from rivals. (Mulder and ten Cate, 2006; p.84)

The first discipline is identified in the organization as “Excellent Execution” and is one of Albert Heijn’s value disciplines. Companies who pursue this quality strive for maximal productivity at the lowest cost and is not primarily a product or service innovator nor do they strive for building excellent customer relations (Treacy & Wiersema 1993; 1995). The drive for excellent execution is reflected within Albert Heijn by some recent organizational changes. For instance the operational management structure in the business has changed drastically, by eliminating certain roles and increasing the level of computerization in the shops. The remaining accompanying management responsibilities will be handed over to personnel who were engaged in more operational responsibilities. For the company this means a substantial cost saving, because former management tasks are carried out by less people. Operational Excellence is also reflected in the way logistics are organized. For example the introduction of a fully automated distribution centre in 2003, named Triple-O led to a 70% reduction of the order picking workforce (Doherty, 2005).

The second value discipline is Product Leadership. When companies excel at this quality they focus on innovation, brand marketing, margins and time to market. With Albert Heijn the focus is on offering high-quality products at competitive prices. The authors define this value as companies that focus on bringing products to the market that push performance boundaries. Examples of the pursuit for product leadership with Albert Heijn can be found in the largest range of products (over 30.000), the availability of exclusive products, for instance the luxurious home brand “Excellent” product range and innovative food concepts such as gourmet meals developed in cooperation with a well-known chef [11, 1]. Albert Heijn has a special department, the Product Innovation Team (PIT), which is responsible for such new food concepts.

Customer Intimacy involves the competence of a company to meet customer needs and expectations and the ability to adjust swiftly to changes. These types of companies strive for close customer relations lasting over a long time offering extensive (product) options. They achieve this discipline by having outstanding market intelligence and being best at knowing their customer. When the price war came to an end in 2003 being the most affordable supermarket was no longer enough to keep existing customers and draw new ones to the stores [24, 25]. Consequently a different strategy was needed to

react to the changed business environment.) For Albert Heijn customer intimacy gained even more importance and became the utmost important key competency. The focus on customer intimacy is essential for future survival of Albert Heijn. By offering customers more and better tailored products and services than the competitions does, the company is able to meet more specific customer needs and enables the company to distinguish itself from competitors by building more and longer lasting relationships with customers. Essentially shoppers at Albert Heijn are given more choices in the way they can organize their shopping. The time, the place, the manner and reason for customers to shop is being redefined. This is translated in providing customers different store formats, offering a wider product and service range and emphasizing the important role of customers in the business and the organization. This customer centered approach embraces the development of tailor made services to make shopping a more pleasant, efficient and convenient experience. The company mission is making every day groceries affordable and exclusive products accessible. This is in line what the company founder had in mind: “rich and poor, everyone should be able to do their shopping here” [1], (Jager, 1995).

Al.3 Store Formats

At present Albert Heijn runs its retailing business through various formulas, being regular supermarkets, “compact supermarkets”, convenience stores and “home shopping” via Albert.nl. These stores are all full-service supermarkets which focus on product and service quality at a reasonable price

The first store format is the regular store or in Dutch “Wijkwinkel”. It is organized in such way that it is suitable for day-to-day shopping activities. To meet specific local needs, this format sells typical local products like the locally brew beer.

Albert Heijn XL is the companies’ hypermarket formula, it is designed for weekly or monthly (bulk) shopping. These stores have the largest product range with special readymade food departments and are situated at easily accessible locations. These shops also have a large non-food section.

The AH To Go is a convenience store offering a selected assortment for a quick breakfast, lunch, meal or to buy the product that slipped one’s mind before. Products are slightly more expensive than regular stores. These stores are mostly located in dense areas or shopping areas and train stations.

The AH Web store offers 24 / 7 ordering and in-house delivery during the day and evening. These products have the same pricing as regular stores, but differ in charging delivery cost.

A special fifth store formula is designed in order for the organization to learn and develop new concepts. These “Breakthrough stores” as they are called (Doorbraakwinkel) are pilot stores where new formats, innovative products and services are tested. Since there are so little of these stores this is not considered as a different formula.

Appendix II Mobile Services

In this Appendix, the mobile service concept is explained by giving an overview of the current research on Mobile Services and providing a definition, historical discussion and characterization.

II.1 What is Mobile Service

One of the first widely accepted definitions of a service was suggested by the economist T.P. Hill. He defined a service as “a change in the condition of a person, or a good belonging to some economic unit, which is brought about the result of the activity of some other unit, with the prior agreement of the former person or economic unit” (Hill, 1977: p. 318, Hill, 1999). Later other definitions appeared in the literature which focused on describing the characteristics of services and products rather than giving a more narrow definition.

Traditional services or low technology intensive services have certain characteristics that make them different in nature from products (Mohr, Sengupta and Slater, 2005). Zeithaml, Parasuraman and Berry (1985) found four frequently used characteristics to show how services differ from goods. In the service literature these are the four characteristics that are most consistently cited to characterize services: these are intangibility, inseparability, heterogeneity and perishability (Mohr et al., 2005; Zeithaml et. al. 1985). The first characteristic describes the impalpable state of the service. Customers cannot touch a service or bring it home. The second characteristic describes an aspect of the production process whereas goods are first produced and then sold and consumed, services are sold at first and then produced and consumed. This implies that the good cannot be produced at forehand and build up stock or that payment, consumption and production of service cannot be separated from each other. Consumption and production cannot be separated. The heterogeneity aspect concerns the variability of the service each service is specific. For service where human labor is involved the service may vary from day to day. The fourth characteristic, perishability means the service is transient and cannot not be saved or stored. The literature describes a service as “a vehicle for value creation” (Mohr et al., 2005). Gallouj and Weinstein (1997: p.540) state that “a service is not a given result, but an act or process”.

In the service literature, mobile service innovations are defined as “any new services that are delivered with the support of wireless devices” (Blazevic, Lievens and Klein, (2003). Or according to Alahuhta et al. mobile service refers to “the use of a mobile terminal, such as mobile phones or personal digital assistants (PDA), and mobile telecommunication network for delivering an electronic service for the customer”. (2005: p. 67). Table II.1 shows that the service literature provides different definitions but these differences are not too problematic.

Table II.1 Definitions of Mobile Service

Researchers	Definition
Alahuhta et al., 2005: p. 67	<i>“the use of a mobile terminal, such as mobile phones or personal digital assistants (PDA), and mobile telecommunication network for delivering an</i>

	<i>electronic service for the customer"</i>
Blazevic, Lievens and Klein, 2003: p. 120	<i>"any new services that are delivered with the support of wireless devices"</i>
Kleijnen et al., 2007.	<i>"a new type of service delivery that make use of wireless technology like WLAN, RFID, Bluetooth"</i>
Nysveen et al., 2005 p. 248	<i>"services available through mobile devices with new opportunities for users that are creating new motives for use and new channels for marketing communication and distribution"</i>
Pagani, 2004; p.46	<i>"delivering voice, graphics, video, and other broadband information directly to the user, regardless of location, network, or terminal"</i>
Siau and Shen, 2003: p.3	<i>"being services that enable users to make purchases, request services, access news and information, as well as pay bills with their mobile devices"</i>
De Vos et al., 2008	<i>"all kinds of innovative services that combine technologies and concepts from the domains of telecommunication, information technology, and consumer electronics"</i>

To conclude definitions for mobile services are somewhat ambiguous and vary from "person to person". Therefore, when a "mobile service" is used, this term refers to the service via mobile devices that make use of information communication technology in order to improve shopping quality, capabilities and the overall experience. This device can be a PDA, Mobile phone, pager, wireless hand-scanner or any other wireless device that customers can use in a retail environment.

II.2 Historical perspective

In the past decade mobile phones evolved from a relatively simple voice communication device with some text messaging and scheduling options to a handheld computer with as many features as a "normal" computer. So, although the majority of the current mobile service literature focuses on mobile phones, these services are not restricted to just phones.

One of the first widely accepted wireless services was Guglielmo Marconi's radiotelegraph at the beginning of the 20th century. This technology would later evolve to AM and FM communications and would lead to the pioneering of the first mobile services for consumers (Steinbock, 2005). The first mobile services were rather primitive having only one service: speech. This service would dominate the second half of the 20th century.

An example of one of the first wide spread and successful mobile services among customers was text messaging using a mobile phone. This service was named Short Messaging System or SMS. This service was almost accidentally discovered and originally developed to deliver subscription information, but not serve as mean of communication. Therefore the rapid growth of the consumer market caught the network providers by surprise (Baron, Patterson and Harris, 2006). Nowadays there are different mobile services galore and the use of these services has dramatically increased.

Although the technology is mature enough, results are promising to promote mobile services and the use of these services is increasing, the growth has not met up to expectations (Aluhta et al, 2005; Carlsson, 2006, Kleijnen et al., 2007). Reasons for the moderate success of mobiles services from a customer perspective are: they are hard to find, not easy to use and do not provide added value

(Alahuhta et al., 2005). Kleijnen et al. (2007) state that one of the reasons why companies fail, is the inability to understand how to meet customers needs. But obviously companies might face other challenges from an organizational, financial or technological nature that impede the successful MSD (Carlsson, 2006).

II.3 Characteristics of mobile services

Due to benefits arising from the special characteristic of mobility mobile services have benefits over other services and are becoming more and more popular. Because mobile services are a relatively new phenomenon, literature on the classification and categorization of these services is scarce (Heinonen & Pura, 2006). But, when describing the special features and classifications of mobile services different approaches can be found.

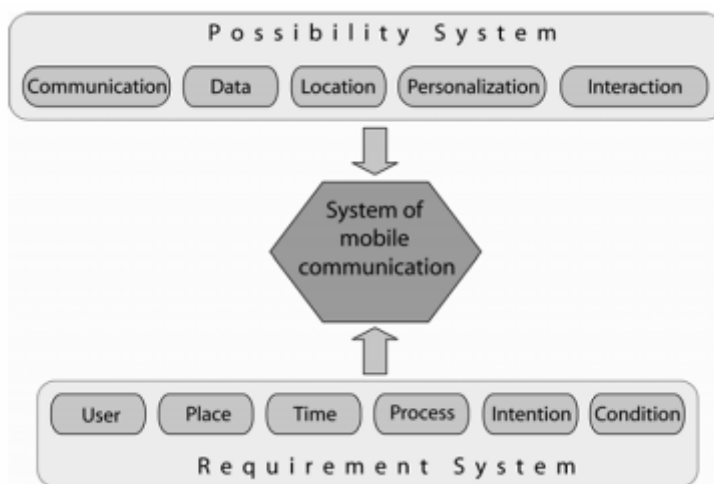


Figure II.1, “The System of Mobile Communication”, (Kirchmair, 2005)

Kirchmair for example (2005) uses a system model approach in order to characterize mobile services. This model distinguishes two aspects: possibilities and requirements with respectively 5 and 6 dimensions. Figure II.1 visualizes the characterization from a user’s point of view (requirements system) and from a technology point of view (possibility system).

Other scholars compare mobile services to other services to point out contrasting features. Alahuhta, (2005) compares mobile services with stationary information services (for example fixed internet at home) and focus on the “mobility” aspect or in other words “anytime anywhere” principle. Heinonen and Pura (2006) contrast mobile services with traditional services and highlight its lack of spatial and time constraints, face-to-face service delivery. Although the literature has different viewpoints on the features itself, common ground can be found on the characteristics that set mobile services apart from other services.

For example, according to Siau et al., (2001, 2003) these special characteristics are:

- **Availability** (or ubiquity), refers to the service being available anytime (Siau et al., 2000; 2003).
- **Personalization**, ability to provide information tailored to user (Siau et al., 2001; 2003).
- **Flexibility**, ability to engage in different activities at the same time (Siau et al., 2001).

- **Dissemination**, ability to spread information among large consumer population (Siau et al, 2001; 2003).
- **Location**, ability to provide location based content (Siau et al., 2003)
- **Reachability**, ability to reach customers anywhere, anytime (Siau et al., 2003)

Frequently the benefits of mobile services are summarized in the following four factors: *ubiquity*, *convenience*, *localization* and *personalization* (Clarke, 2003). These characteristics are useful to gain better managerial insights on how to organize services in order to serve customers better (Lovelock, 1983) and a more thorough look at these four characteristics is given a better idea of the benefits arising from mobile services.

1) Ubiquity; *refers to the ability to receive information anywhere and anytime.*

Mobile services can be used anytime and anywhere, which enables people to communicate or to access information at any location, any time and in any situation (Kleijnen, 2007). Mobile services eliminate temporal and spatial constraints compared to the delivery of traditional services, which do not offer the ubiquity provided by mobile services. (Nysveen et al., 2005)

Therefore mobile services enable consumers to better fulfil their service needs, (Kleijnen, 2007).

2) Personalisation: *can be explained as the ability to personalize information on the level of an individual customer.*

According to Kleijnen (2007), mobile services and applications that adapt to the context may provide greater added value to customers, because personalization can better cater to customers needs. From an organizational perspective this can increase customer loyalty. Personalization can also create a richer experience, because more detailed customer information can be gathered and therefore behaviour (and the company's response to that) can be linked to one person. By tracking customer behaviour also offers the company a unique opportunity to develop new services that are more profitable or better meet customers needs (Blazevic, 2003).

3) Localization: *can be interpreted as the ability to provide location based services or in other words using the users' geographical location to adapt to specific customer needs.* Localization and context awareness deal with the ability to utilize information about the users' environment (context) in order to adapt services to the users' current situation and needs with personal preferences stored in profiles to create tailored solutions to meet users' needs (Vos et al., 2008).

4) Convenience: *Convenience can be expressed as the ability to save time, money, energy and so on.* Speed and time efficiency often are positioned as the main benefits that consumers can achieve through the use of technology in retailing. (Kleijnen, 2007). Time is consumer's most precious and least replaceable asset and therefore consumers derive utilitarian value from timely service (Kleijnen, 2007). This particularly holds for mobile devices, since they offer the opportunity to carry out new tasks, that were not possible before or different tasks at the same time. As a consequence, mobility enables end

users to fulfil their consumption goals (shopping) more economically or convenient than do other channels.

Besides these four characteristics, user control and compatibility are often cited. Increased user control is identified as a key feature of mobile services. *User control* is the extent to which consumers can determine the timing, content, and sequence of a transaction (Kleijnen, 2007). When customers feel that they have more control over a situation, they have positive feelings toward the experience. *Compatibility* or the ability to work well with existing devices and technology also influences the success of the service (Pagani, 2004). For customers as well as business *cost savings* are obvious conveniences. In addition to these beneficial characteristics of mobility other advantages might arise from the introduction of mobile services. For example, “pioneering advantages”, (Blazevic, 2003), indirect gains like increasing profits or attracting more or different customers might follow the introduction of new mobile services. In conclusion, mobile services are a special type of services due to its inherent characteristics and therefore they need to be managed accordingly.

Appendix III The Innovation Process at Albert Heijn

This appendix describes the organization of the innovation process within Albert Heijn and highlights a special department: the “Innovation café”.

III.1 “Why is it that Albert Heijn is so innovative”?

Besides economical prerequisites (there must be sufficient recourses to innovate) and organizational conditions (support from the board of directors is needed) a possible answer to this question could lie in the way the innovation process is organized, a model of this process is depicted in figure III.1.

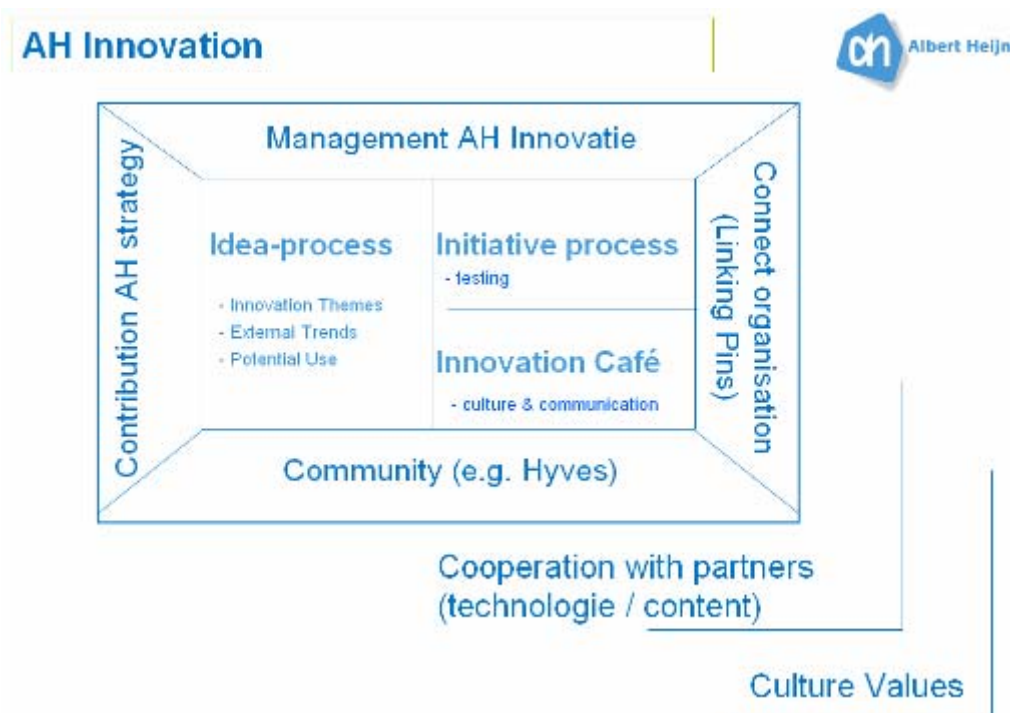


Fig. III.1, The Innovation Process at Albert Heijn [1]

In order to gain more visibility of innovation within the headquarters, Albert Heijn kicked off the design of its service innovation process in 2006. In cooperation with a consultancy partner, Albert Heijn started an “Innovation Program” with the aim to shape the New Service Development process to match customer needs and have optimal use of knowledge and technology. It is important to keep in mind that the focus is on customer innovations. Albert Heijn’s view on customer innovation is that this process focuses on the improvement of service for the customer or in other words “service innovations”. Product and logistic innovations are not part of the scope of this program, these types of innovations are organized in different departments within the company.

According to Burgelman et al., the innovation process can be defined as “the combined activities leading to new, marketable products and services and / or new production and delivery systems” (2005: p.2, 3). The innovation process at Albert Heijn is based on the classic

Wheelwright and Clark’s “Innovation funnel” or as they state the “Product Development Funnel” (Burgelman et al., 2004; p. 942, 1066). This funnel is depicted in figure III.2. Basically projects enter at the left of the funnel and leave at the right side in the way of products or services entering the market.

The innovation literature distinguishes two “Innovation Models” or Paradigms. First there is the classic innovation model or the “Closed Innovation System” like Wheelwright and Clark’s model. This model was popular until the end of the 20th century. The first system has a strong science and technology foundation and success depended heavily on R&D activities of the company (Chesbrough, 2004).

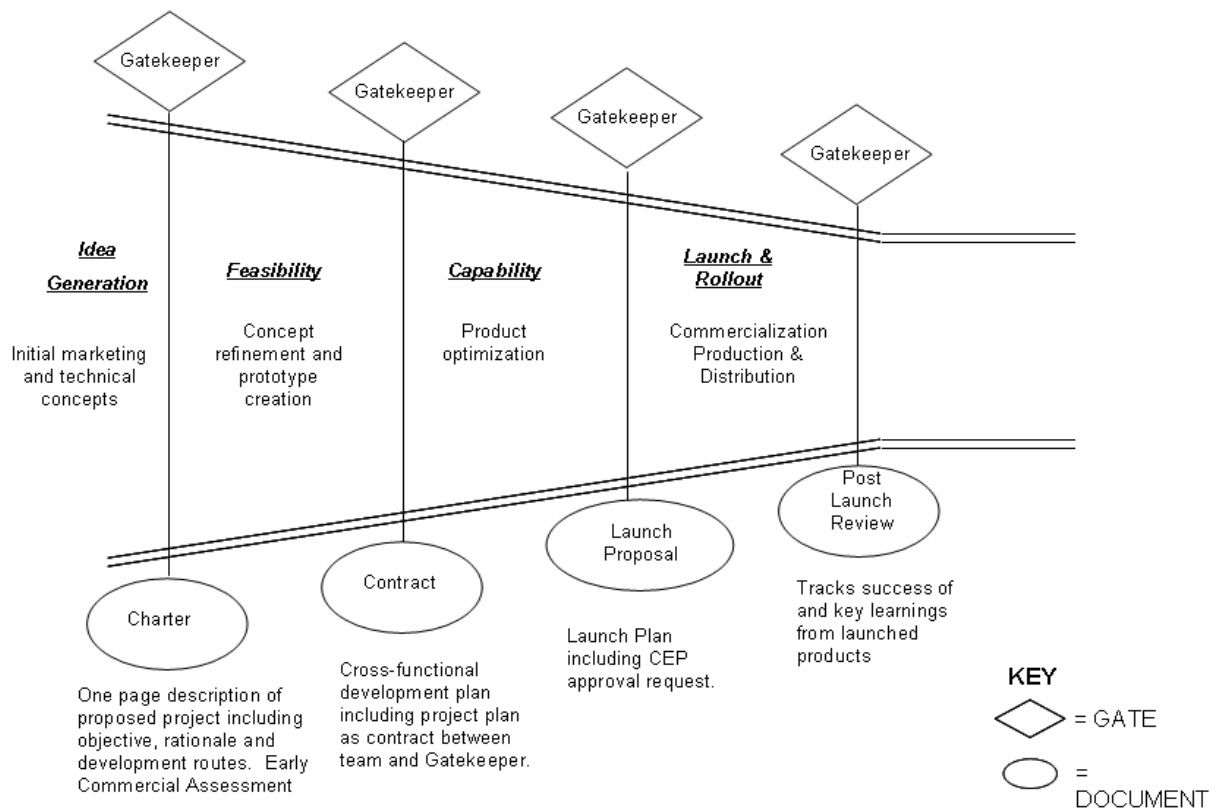


Figure III.2, The Product Development Funnel from Wheelwright and Clark (1992)

Closed Innovation is a view that states that “successful innovation requires control” (Chesbrough, 2004: p.23). Characteristics of this system are keeping things “in house” and under control of the company. An important assumption of this model was that companies employed crème de la crème professional, therefore with all the necessary knowledge available in the company (Chesbrough, 2004, 2006; George et al., 2005). According to Wheelwright and Clark (1992) this system could be completely managed within the company. This model is depicted in figure 3.

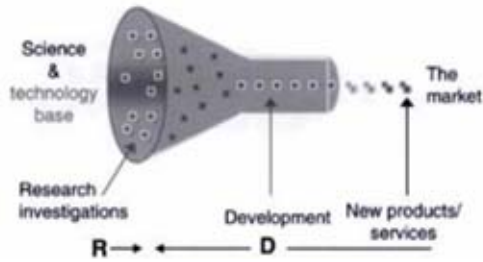


Figure III.3, A Closed Innovation Paradigm (Chesbrough et. al, 2006)

Under influence of the increased mobility of knowledge and labor within companies, a paradigm shift occurred and the “Open Innovation System” emerged at the turn of the millennium (Chesbrough, 2004, 2006; George et al., 2005). The Open Innovation paradigm is a view that “assumes that firms can and should use external as well as internal ideas, and internal and external paths to market, as they look to advance their technology” (Chesbrough, 2004: p.23). This model is depicted in figure III.4.

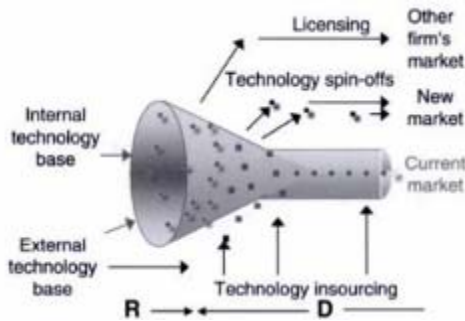


Figure III.4, An Open Innovation Paradigm (Chesbrough et. al, 2006)

The way the New Service Development process is organized at Albert Heijn can be characterized as Open Innovation. Table III.1 represents six “Open Innovation” principles adapted from Chesbrough (2006).

Table III.1, "Contrasting Principles of Closed and Open Innovation" (Chesbrough, 2006: p. xxvi)

Closed Innovation Principles	Open Innovation Principles
1) All the necessary knowledge and skills are in house	1) Knowledge and skills can be obtained from outside the company
2) To profit from R&D, the company must discover, develop and ship itself	2) External R&D can create significant value and internal R&D is needed to claim some portion of that value
3) The company who makes the discovery, gets to the market first	3) It is not necessary to make the discovery to profit from it
4) Creating the most and best ideas in the industry defines the "winner"	4) The company that makes the best use of internal and external ideas defines who wins.
5) Control IP so that others cannot profit from it	5) Profit from other's use of IP and buy others' IP if it advances the business.
6) The company who gets an innovation to market first will win.	6) Building a better business model is more important than time to market

The vision of Albert Heijn on innovation is as follows:

- 1) Innovations can also be copied from competitors or originate from other industries. It is acknowledged that the organization does not have all the knowledge needed for a new project and that this knowledge can be brought in the company by involving other parties.
- 2) Albert Heijn does not have an R&D department and the funnel should be fed with ideas for possible innovations from different sources like customers, employees, suppliers and also competitors.
- 3) It is possible to develop innovations in house, but preferable "just mature" technology is used. Albert Heijn regards itself as an "early adopter", not an "inventor".
- 4) Albert Heijn works with alliances, for example a technology partner and a content partner are involved at the start of a new innovation project.
- 5) Although a new innovation can be really exciting if it lacks a good business model, the service will not be marketed. Financially the idea should bring benefit to the company.

In conclusion, this vision has many correspondences with the Open Innovation principles mentioned before. Although many innovations fail, innovation is important for Albert Heijn because "companies that don't innovate die" (Chesbrough, 2006). But innovation must not be used to catch up with competitors. Innovations must be "faster", "better" and "different". This statement translates with Albert Heijn in the development of service innovations and especially the application of mobile technology in a retail environment as this is one of the newest and most promising trends.

III.2 The organization of the Innovation Process

The innovation process is led by the Innovation Manager and consists of three different phases each answering one specific question:

- Idea-process, "What is the idea?"
- Initiative process, "How can this idea work for us?"
- Implementation process, "How do we implement the idea?"

Innovation starts with the *Idea Process* phase. This process is composed of the “creation phase” and the “refinement phase”. The goal of the first phase is to promote the creation of innovative ideas and communication in the organization regarding innovation. The next phase refines these ideas and review is done on the applicability in the organization. During this phase the following activities take place:

- Market trends are spotted and if interesting picked up
- Insight is created in external trends
- Demo’s and use are put forward by employees
- Innovative ideas are matched to their possible use

The second phase, the “Initiative process” is depicted in figure III.5.

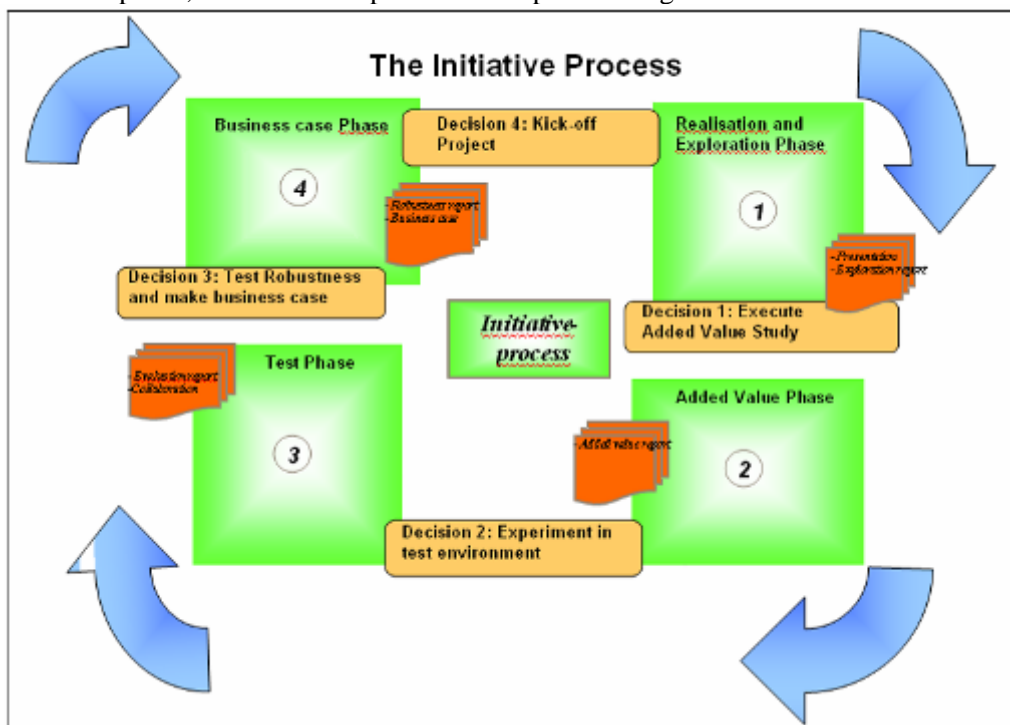


Fig. III.5, The Initiative Process

Activities in the first phase of the *Initiative Phase* are investigating the applicability of the innovation-initiative, test technology maturity, define the scope, install (software)demo, explore relation with suppliers and possible partnerships, experiment with a small pilot, measure and analyze customer reactions. At the end of the phase a decision is taken whether the initiative should go to the Added Value Phase. Here the question is answered “What is the added value for the customer?” In the next phase an operational pilot is carried out to see how customers respond to the initiative. Finally a business case is made and a decision is taken whether to implement the initiative or not.

The last phase of the Innovation Cycle is the Implementation Phase and is still being developed. In this phase the initiative is implemented company wide and the goal is to implement the innovation in a successful manner.

III.3 The Innovation Café

To make innovation more visible at the headquarters, the “Innovation Café” was opened December 2006. This place is a modern, inspiring environment where new innovations can be presented and tested. Albert Heijn applies the philosophy that “Everyone is an Innovator” and therefore the café is a meeting place for employees, suppliers, customers, (future) partners and others involved, where they can share their ideas on innovation. The weekly “initiative” and “idea process” meetings are organized here. The first meetings discuss the progress of the current innovation projects. The innovation themes, external trends and possible new innovations put forward by are discussed in the idea process meetings. The monthly innovation café meetings are concerned with the daily affairs and communication to the other departments in the organization.



Figure III.6 The Innovation Café

The innovation café can be regarded as the visualization of what AH strives for when it comes to innovation. This is the place where innovations can be tested and be experienced. The café also plays an important role in changing the organizational culture and is designed to create a more innovative mindset among AH employees. Another important function is to stimulate cooperation between different departments, for example the HQ and the distribution centers or stores. But the café should also encourage cooperation between content and technology partners. Besides that, the café should stimulate a more customer centered vision, in the end it is the customers that defines the added value and the success of the innovations. Therefore customers are invited regularly to participate in brainstorm sessions and other discussions. Plus, innovations should be fun and everyone should be able to participate. The high-tech Swiss coffees machine and monthly “Borrels” definitely contributed to the fun element and draw many innovation friends into the café causing a snowball effect in the organization. This “rumor around the brand” is exactly what should draw people to the café and inspire more and more people to actively participate in the innovation process. Enthusiasm is a very important for people to commit themselves to innovation.



Figure III.7 Introduction of the PUC, a new coffee machine

Appendix IV PLUK in Article Dutch Newspaper



AH doet in de Haagse Elandstraat een interactieve proef met de klant. FOTO JACQUES ZORGMAN

Eten kopen met je mobieltje

MARTY THIELEMAN
DEN HAAG

Je hebt haast of je hoofd loopt over, maar je moet thuis toch een fatsoenlijke dis op tafel zetten. Dan loop je de supermarkt in en daar sta je dan. Of je hebt wat meer tijd, maar geen flauw idee welk driegangenmenu je je vrienden moet voorschotelen. Ook hier slaat de twijfel toe bij de drukke mens.

Maar nu is er een alomvattende oplossing voor deze hectiek, althans dat hoopt Albert Heijn, die er in de Haagse vestiging Elandstraat een proef mee doet. Een interactieve dienst die de klant met behulp van zijn mobiele telefoon pijnsnel helpt met het maken van een keuze. Over-

al in de XL-winkel hangen codes, waar iedere dag andere informatie achter zit. Die codes zijn bijvoorbeeld Recept of Rosé en die verstuur je ter plekke per sms naar Pluk (=7585). Via die dienst ontvang je ingesproken informatie terug of een boodschappenlijstje. Daarop staat precies wat je moet kopen voor een recept of bij welke gerechten de rosé het beste past. Op dat moment wordt er ook een mail verstuurd met een link die het recept met bereidingsinstructies bevat.

Thuisgekomen is het koken louter kinderspel. De dienstverlening kan zo uitgebreid worden als AH wil. De code Bewaar maakt duidelijk of je een komkommer in de koelkast moet bewaren of juist niet. Ben je on-

der de indruk van de toverkunsten van de AH-kok op het kookeiland, dan krijg je daarvan thuis via de mail een filmpje plus opsomming van alle ingrediënten. Wat je daarvan nodig hebt, kreeg je eerder via sms terug op je boodschappenlijstje. De pasta, tomaten en knoflook, alles heb je. Niets kan nog fout bij deze kosteloze service.

Albert Heijn werkt hierbij samen met het Haagse bedrijf Pluk, een joint-venture van KPN en BarTrack. Pluk legt ook elders links tussen offline-uitingen en online-informatie via de telefoon.

Met AD Nieuwsmedia zijn interactieve dagbladadvertenties gestart, die koppelingen met de adverteerder mogelijk maakt.

Figure VIII.1 Article in AD and Haagse Courant 05-07-2007 (in Dutch)