THE EFFECT OF COMMUNICATING E-SERVICE BENEFITS ON CONSUMER E-SERVICE ADOPTION

PIA HELLMAN
The Effect of Communicating E-service Benefits on Consumer E-service Adoption
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Key words: e-service adoption, e-service benefits, e-service communication, e-mail marketing, click-through rates, login rates

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Hanken School of Economics
ISSN-L 0424-7256
ISSN 0424-7256 (printed)
ISSN 2242-699X (PDF)
ACKNOWLEDGEMENTS

Throughout the journey of creating my PhD thesis I have received guidance and support from several persons, whom I would like to thank sincerely.

I would like to thank Professor Chanaka Jayawardhena for accepting to be my opponent and external examiner. Your interest towards the manuscript encouraged me during the last stages of the process. I am also grateful for the excellent job of Professor Tommi Laukkanen who also acted as my external examiner.

My deepest thanks go to my supervisor, Professor Veronica Liljander, who has spent much time and effort patiently reading my texts and assisted me with her great skills and experience within the academic research process. I also wish to acknowledge the support received from Professor Tore Strandvik who never fails in asking the tricky questions.

During the course of my journey in digital marketing, I have encountered many people such as Copywriter Virpi Kailento who has shared her vast experience and provided me with a lot of ideas, which have helped me find the focus in this study. Thank you also Sigrid Kivekäls for the language editing.

I would also like to acknowledge the financial support provided by Liikesivistysrahasto as well as the technical support provided by Webfellows, Postiviidakko and Snoobi, which made the experiment possible.

I also want to express my warmest thanks to my family Mika, Ellen and Kia for endlessly tolerating the absent-minded person sitting at the kitchen table with soundproof headphones on.

Finally, I am grateful to my parents who taught me the meaning of lifelong learning.

Espoo, 10th of May 2014

Pia Hellman
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ABBREVIATIONS

ASP     Application service provider
ATM     Automatic teller machine
B2B     Business to business
B2C     Business to consumer
CMS     Content management system
CPA     Cost per acquisition / action
CPC     Cost per click
CPM     Cost per mille (thousand)
CPV     Cost per view
CR      Conversion rate
CRM     Customer relationship management
CTR     Click-through rate
CX      Customer experience
DM      Direct mail
ESP     E-mail service provider
GA      Google Analytics
HTML    HyperText Markup Language
IVR     Interactive voice response
KPI     Key performance indicator
POST-PAID Subscription of which use is paid after use
PRE-PAID Subscription of which use is paid in advance
SAAS    Software as a service
SMS     Short message service
UI      User interface
UNIQUE CTR One click per link
UNIQUE LOGIN RATE One login
USP     Unique selling proposition
UV      Unique visitor
UX      User experience
VM      Viral marketing
W-O-M   Word-of-mouth
WYSIWYG What you see is what you get
XML     Extensible Markup Language
1 INTRODUCTION

The development of technology and the increase in labor costs have made digital service channels increasingly attractive for organizations as the digital channels can contribute to significant cost savings by increasing the productivity and efficiency of services (Zeithaml and Gilly 1987; Walker, Craig-Lees, Hecker and Francis 2002; Liljander, Gillberg, Gummerus and van Riel 2006; Tekes 2010; McKinsey 2013). According to international research reports, e-services will increase company productivity between 30 and 50 percent before the end of 2019 (Kauppalehti 3.2.2009). New innovative e-service concepts and offerings have also been developed in order to differentiate company offerings (Tekes 2010). However, the introduction of an e-service does not automatically lead to usage (Liljander, Gillberg, Gummerus and van Riel 2006). Research shows that the adoption rate of e-services is often lower than what companies have expected (Juntumaa 2011). A McKinsey survey of US telecom subscribers showed that while 50-65 percent of the consumers said that they would prefer to have their transaction handled by digital channels, only 10-15 percent of them routinely use online access (McKinsey 2013).

Companies use technology at various stages in the service delivery process in order to provide opportunities to increase speed of delivery, precision and customization (Berry 1999; de Ruyter, Wetzel and Klenjnen 2001; Walker et al. 2002), reduce costs and increase productivity (Alpar 1992; Dabholkar 1996; de Ruyter et al. 2001; Schneider and Bowen 1985; Walker et al. 2002), improve competitiveness and increase market share (Kauffman and Lally 1994), increase customer satisfaction and customer loyalty, and differentiate through a technological reputation (Meuter and Bitner 1997). Technology also offers companies a possibility to standardize services (Quinn 1996) and commercialize either new core services or complementary services (van Riel, Liljander and Jurriens 2001). This development has led to the face-to-face interaction between consumers and companies being replaced with self-service technologies (Eriksson and Nilsson 2007). Technology has enabled a multitude of e-service channels such as ATM’s, touch screens, kiosks, self-scanners, IVRs, mobile devices, websites and web shops (Dabholkar and Bagozzi 2002). Typical customer processes supported by e-services are account details, payments, reservations, access to product and price information, manuals, upgrades and status of service monitoring (Doyle 2006).

The terms online services and e-services are used in this study to mean consumer services offered via the Internet regardless of device. In this study, an e-service is defined as the consumer process of online selection, inspection, negotiation and marketing communication through technological interfaces that enable consumers to produce a service independent of direct service employee involvement (Rust and Kannan 2003; Järvinen and Lehtinen 2005).

To date, there is comprehensive research on the underlying factors that influence consumer adoption of new e-services, but there is a lack of understanding of how these factors could be used to encourage e-service adoption. We know about factors that explain why some customers adopt self-service technologies (e.g. Chen and Dubinsky 2003; Choïn; Laukkonen et al. 2009; Lin and Hsieh 2006; de Ruyter et al. 2000; Meuter, Ostrom, Bitner and Roundtree 2003) and we know factors that affect self-service technology avoidance (Featherman 2003; Durkin, Jennings, Mulholland and Worthington 2007; Reinders, Dabholkar and Frambach 2008). However, there is a lack of studies on how, or if, some of the factors that explain intended, or actual, adoption, could be used by companies to encourage more consumers to adopt the e-service. This
is the question that this thesis attempts to answer by studying if communicating e-service benefits to consumers will affect their actual adoption behavior.

E-service usage requires some kind of sacrifice from the consumer as the consumer performs at least a part of the e-service. Perceived benefits are important, because consumers need to perceive some kind of benefit since they sacrifice both time and effort when they adopt an e-service. Perceived service benefits have been studied within traditional services and e-services. Much attention has been given to the perceived benefits of current service users, for example the perceived relationship benefits of being a regular customer of a service or e-service (Gummerus, Liljander, Weman and Pihlström 2012; Gwinner, Gremler and Bitner 1998; Gwinner, Kevin, Gremler and Dwayne 2002; Gwinner 2003; Gwinner, Gremler, Dwayne and Michael 2004). Customers who are used to traditional means of accessing a service, and still have the traditional service channels available, will likely not try the e-service without perceived benefits.

This study differs from previous studies in that it attempts to explain the adoption of e-services with the communicated benefits of what consumers are expected to perceive when using the services, explicitly or implicitly in comparison with traditional service delivery. Past studies have encouraged companies to pay more attention to the potential benefits that they offer their online users. Hence, it seems relevant to ask if companies could communicate the potential benefits of their e-services to consumers pro-actively. For example, findings show that perceived benefits affect customer satisfaction and intentions to use the e-service (Meuter 2000; 2005), but no previous studies have studied the effect of communicated benefits on the actual login to the e-service. Hence, this thesis asks, if consumer e-service adoption could be increased by communicating e-service benefits to the consumers.

A great number of benefits have been suggested in past research. For instance, consumers may find e-service attractive because of time and cost savings, greater control over the service delivery, potentially more reliable information delivery, access to data and support services that may not otherwise have been available, reduced waiting time, a higher perceived level of customization (Meuter and Bitner 1997, Walker et al. 2002), convenience of location (Kauffman and Lally 1994), efficiency, flexibility (Bitner, Ostrom and Meuter 2002), or because of new or extended services not available otherwise (Walker et al. 2002). Furthermore, consumers may find technology-based options attractive for other reasons, such as it being easy to use, more convenient than the alternatives, or even because it allows them to purposely avoid contact with the provider’s personnel (Dabholkar 1996; Meuter, Bitner, Ostrom and Roundtree 2000). Benefits are important motivators to use the e-service and thus benefits have been studied within, for example information technology, websites, online shopping, service, and e-service adoption research.

For this study, seven major categories of e-service benefits were initially identified to potentially explain consumer e-service adoption: 1) Time saving, 2) Access to accurate information, 3) Convenience, 4) Monetary benefits, 5) Lack of social contact, 6) Control and 7) Ease of use. Studies on consumer perceived benefits have typically been performed as surveys of current customers, or as explanatory factors on intentions to adopt.

Generally, there are monetary benefits for the company when consumers switch to online services. For the consumers, however, the benefits involved in using the e-service are not necessarily evident if they are not communicated to them. If companies
do not want to force their customers to use the e-services, they should at least convince them to even try the e-service. In order to build positive consumer perceptions of e-service benefits and drive e-service adoption, the firms need to communicate the benefits to consumers also before trial. Nevertheless, there seems to be no previous research on the communication of benefits to consumers.

Most of the service communication research has focused on service management in face-to-face contacts between the customer and the company (Luk, Chan and Li 2002), with only a few exceptions (Heinonen and Strandvik 2005; Liljander et al. 2006; Prins and Verhoef 2007). Moreover, the majority of studies within advertising of services have concentrated on either exploring the content of service advertisements or on creating general conceptual frameworks (Mortimer 2008). However, a study on Internet banking (Laukkanen et al. 2009) proposes communication strategies for avoiding resistance to Internet banking, including avoiding functional resistors by marketing the benefits and the relative advantage of Internet banking. Further, research shows that consumers are influenced by online marketing communication. For example, studies have found that web-based marketing communications influence attitude toward the ad (e.g. Karson and Fisher 2005), attitude toward the website (e.g. Elliott and Speck 2005), brand attitude (Madhavaram and Appan 2010), brand awareness and image (e.g. Briggs and Hollis 1997), mood (e.g. Park, Lennon and Stoel 2005), purchase intention (e.g. Kim and Lennon 2008), and selling performance (e.g. Luk et al. 2002). However, the traditional approaches to online communication have not considered the unique characteristics of the online medium, such as high-speed interactivity, short exposure time and space. The Internet is a unique marketing medium because behavioral consumer responses to online marketing can be easily tracked. Click-through rates (CTR) are an important mechanism for driving traffic to the websites and e-services. Login rates to the e-service shows if the communication has reached its objective. Hence, both CTR and login rates are important metrics for the Web (Chatterjee, Hoffman and Novak 2003) as they are behavioral and therefore accountable measures for online marketing activities. However, the majority of the research within online communication uses indirect evidence, such as surveys or laboratory experiments, where the focus has been on understanding the effect of a single online element on consumer awareness, rather than the behavioral effect. However, some studies on the behavioral impact can be found, such as the click-through rate of banner ads (e.g. Briggs and Hollis 1997, Chatterjee et al. 2003; Dahlen 2001). There has been limited attention to the effect of marketing communication on e-service adoption (Prins and Verhoef 2007). To the best of my knowledge, there are no studies on the effect of online communication on actual consumer behavior, such as e-service adoption.

Using the Web as a sales and service channel has created demands for a multitude of online communication channels, such as e-mails, mobile mails and display advertising. The use of e-mail marketing has expanded rapidly among practitioners. Research on online communication and e-services has mainly focused on the website, or mobile media, leaving other marketing communication channels, such as display advertising, e-mails, direct mail and brochures, outside the scope of the studies (Prins and Verhoef 2007). As e-mails offer a directly accessible route to the e-service, it was chosen as the studied online communication channel of this study.

All to all, this study proposes that one way to increase e-service adoption is to communicate consumer e-service benefits through e-mail. Hence, the focus of the thesis is on e-service adoption, e-service benefits and on the effect of online e-service communication on consumer behavior. Based on a conceptual framework of e-service
benefits and online e-service communication, the effect of communicating e-service benefits through e-mail communication within a b-to-c environment was measured with the help of an experiment. The empirical study was conducted among the new B2C customers of a telecom service provider.

E-service adoption is in this study defined as a process with three stages (Zhu et al. 2006): 1) Initiation, 2) Interest and 3) Use. The first two will be studied empirically applied to an e-service context as follows. Firstly the consumer must be aware of and evaluate the e-service. Awareness is initiated by receiving an e-mail about the e-service. If the consumer is interested and clicks on any of the e-mail links, the consumer will land on the e-service login page. Secondly, the consumer evaluates the information on the login page and makes a decision whether to try the service by actually logging into the e-service. Adoption is in this study empirically measured as click-through (interest) and the first time login (trial use) to an e-service.

Next the overall purpose and four research questions are introduced. Thereafter, the delimitations, the contribution, and the research approach of the study are discussed. The chapter ends with an introduction to the structure of the thesis.

1.1. Purpose and research questions

The purpose of this thesis is to investigate if communicating e-service benefits to consumers through e-mail communication has a positive effect on consumer e-service adoption.

Hence, the primary research question in this dissertation is:

"Does communicating e-service benefits to consumers through e-mail have a positive effect on consumer e-service adoption?"

This is addressed by answering the following sub-questions in the empirical study:
1) Do e-service benefits differ in their effect on consumer e-service adoption?
2) Does the number of communicated benefits have an impact on e-service adoption?
3) Does the communication of benefits affect the participants’ perceptions of e-service benefits?

Questions 1-2 will be answered through an experiment on new B2C customers of a telecom company. Adoption is in this thesis operationalized as click-through rates, representing an interest in the service, and login-rates, representing the login to the e-service. Question 3 will be answered with a post-survey.

1.2. Delimitations

Some e-services are stand-alone services, such as news and online portals, and price comparison services, whereas other e-services are supporting services that facilitate the use of the traditional service or the purchase of goods. An e-service can also be either a substitute or a complimentary service. The empirical case company of this thesis offers e-services via several channels such as phone, shops and Internet, which all substitute each other. The study is delimited to the company's supporting services, which are offered through the Internet.
Adoption is empirically measured as click-through (interest) and the first time login (trial use) to an e-service. The study does not cover continued use. E-service communication in this study refers to the pre-usage phase of the e-service.

Further, the operationalized communication of this study is delimited to e-mail communication. Factors such as the effect of the user interface, the visual layout and the tone-of-voice in the messages are not studied.

Finally, the empirical study was delimited to investigating seven e-service benefits. Three benefits were chosen: 1) Save time, 2) Access to accurate information, and 3) Easy to use. These benefits were chosen after a comprehensive literature review and a Pilot study, the purpose of which was to detect the most important benefits to be included in the Main study experiment.

1.3. Contribution

This study contributes to both the theoretical and the empirical understanding of the behavioral effect of communicating e-service benefits through e-mails.

According to Corley and Gioia (2011), a theoretical contribution can be made on two dimensions, originality and utility. A study can provide original insight into a phenomenon by advancing knowledge in a way that is deemed to be useful for some purpose. Both originality and utility can be further divided into two subcategories. Originality can be categorized as either 1) advancing understanding in a way that provides some form of revelation or 2) advancing understanding incrementally. Further, the utility dimension can be 1) practically useful or 2) scientifically useful. The Figure 1 shows these four categories of Theoretical Contribution.

![Figure 1 - Dimensions for Theoretical Contribution (Corley and Gioia 2011, p. 15)](image)

The theoretical contribution of this study is positioned primarily in the 4th quarter of the matrix in Figure 1. The study contributes incrementally to theory by exploring whether communicating e-service benefits through e-mails can influence e-service
The study makes a contribution also to practice by showing how behavioral measures can be related to individual e-mails, thus making it possible to test the direct effects of e-mail communication.

From a theoretical viewpoint, limited attention has been paid to the effect of marketing communication on new service or e-service adoption (Prins and Verhoef 2007). Past studies have emphasized, among other things, the importance of perceived benefits and encouraged companies to pay more attention to the potential benefits that they offer to their online users. Nevertheless, empirical studies on the subject are lacking. This study makes a scientific contribution, because it brings insight into the effect of e-mail communication of e-service benefits in the two first steps of the e-service adoption process: 1) to find and raise interest in the e-service, and 2) to log into the e-service. Thus the study contributes to the literature on online communication and to the literature of factors that affect e-service adoption.

Previous research on online marketing communication has mainly measured the cognitive and affective responses of consumers. The behavioral effect of communication in terms of click-through rates has been studied sparsely. Similarly, much of the e-service adoption literature relies on intentions to adopt. Thus, this study contributes theoretically by providing new knowledge on the real behavioral effects of e-mail communication to customers, rather than cognitive, affective, or intended behavior. The behavioral effects are measured as click-through rates from individual e-mails, and the first login to the e-service. Accordingly, this study is among the first to test in vivo actual consumer online behavior as a consequence of e-service communication. Previous research in e-mail marketing has showed that e-mail marketing is an effective tool for communicating with customers. E-mails give the customer the opportunity to choose the information they need and when they need it (Godin 1999). Although both academic and managerial literature shows that e-mails have many benefits and that appropriate e-mail content plays a key role in advertising effectiveness (e.g. Carmichael 2000; Teinze et al. 2002; Waring and Martinez 2002; Du Frene et al. 2005), no studies of e-service related e-mail content could be found. The main study tackled many questions in relation to the practical measurement and construction of data files. This kind of methodological knowledge provides insights for both scholars and practitioners in helping them to track and find out the optimal content and the correct frequency of e-mails.

Thus, all in all, this study provides incremental insights to the marketing communication literature by addressing fundamental issues of both theoretical and practical importance for e-mail and website response measurement.

1.4. Research approach and methods

The adopted research approach in the study stems from my scientific view of scientific realism. Fallibilistic realism views that "the job of science is to develop genuine knowledge of that world, even though such knowledge will never be known with certainty" and critical realism which states that "all knowledge must be critically evaluated and tested to determine the extent to which they do, or do not, truly represent or correspond to that world" (Hunt 1990 p.9 in Peter 1992). Arguments for scientific realism often rely on abductive reasoning or inference to the best explanation (Lipton 2004). Scientific realists point to the success of scientific theories in predicting and explaining a variety of phenomena, and argue that from this we can infer that theories can provide either true or approximate descriptions of the world. Scientific
realism usually holds that science makes progress, i.e. scientific theories usually get successively better, or, rather, answer more and more questions. One of the main arguments for scientific realism centers on the notion that scientific knowledge is progressive in nature, and that it is able to predict phenomena successfully. As mentioned before, this thesis fits this description by incrementally contributing to existing knowledge.

The three studies of this thesis are deductive studies, based on previous research. The Pilot study was performed as an online survey. The Main study was performed as an experiment, in order to be able to assess causal effects, within the set limitations. The Post study was performed as an online survey. The studies are described and motivated in detail later in the thesis.

From a scientific realist point-of-view, this thesis is progressive as it aims to predict, explain and successively improve the knowledge of the behavioral effect of communicating e-service benefits through e-mail by inferring to the best explanation.

1.5. Structure

This thesis consists of seven chapters. The introductory chapter is followed by Chapter 2, which presents the conceptual foundations of this thesis.

Chapter 3 describes the research methodology and design of this study. The fourth, fifth and sixth chapters present each of the studies (Pilot study, Main study and Post study) and their results. Chapter 7 presents the conclusions of this thesis together with managerial implications and suggestions for further research.
2 CONCEPTUAL FOUNDATIONS

The conceptual framework of this study is displayed in Figure 2. The figure shows the core concepts that will be reviewed in this chapter: adoption of e-services, consumer e-service benefits, e-service communication and e-mail communication. The framework illustrates that communicating consumer e-service benefits through e-mail is presumed to have a positive effect on consumer e-service adoption.

<table>
<thead>
<tr>
<th>Communication</th>
<th>Consumer benefits</th>
<th>Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>E-mail</td>
<td>Time savings</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Access to accurate information</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Convenience</td>
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<td></td>
<td>Monetary savings</td>
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<td></td>
<td>Lack of social contact</td>
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<td></td>
<td>Control</td>
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</tr>
<tr>
<td></td>
<td>Easy to use</td>
<td></td>
</tr>
</tbody>
</table>

**Figure 2 Conceptual framework**

Adoption is in this study defined as the process, which includes initiation, interest and first time login (use) to the e-service. Adoption is empirically measured as click-through (interest) and the first time login (trial use) to an e-service and it does not cover continued use. Neither does the communication in this study cover more than the pre-usage phase of the e-service. The objective of the pre-usage phase is to introduce the e-service to the new customers in order to get them to try it.

The framework includes a thorough review of the central concepts and their interrelationship. Research gaps are discussed.

The chapter starts by reviewing the dependent variable, the adoption of e-services. Second, seven e-service benefits, which potentially explain consumer e-service adoption are reviewed: 1) Time savings, 2) Access to accurate information, 3) Convenience, 4) Monetary benefits, 5) Lack of social contact, 6) Control and 7) Easy to use. These consumer benefits form the presumed content of e-service communication aimed at increasing e-consumer service adoption. Third, past research on the role, content and effect of e-service communication is reviewed. Fourth, research in e-mail
marketing communication is discussed. The last part of this chapter includes a summary of the conceptual framework and a discussion on the research gaps found.

2.1. Adoption of e-services

Digital service channels have become increasingly attractive for organizations as the digital channels can contribute to significant cost savings. However, research shows that the adoption rate of e-service is often lower than what companies have expected (Juntumaa 2011). In order to turn e-services into a benefit for both the consumer and the company, the consumers will have to adopt e-services.

In their comprehensive review of e-business adoption studies Chen and Holsapple (2013) observe that researchers differ on how they relate to adoption. For example Hernandez and et al. (2009) argue that adoption and acceptance are two different decisions for individual customers, although many researchers do not distinguish between them. There are exceptions, such as the study by Zhu et al. (2006), which distinguishes between three steps of e-business assimilation: initiation, adoption and routinization. Initiation is based on terms such as business readiness and focuses on the potential benefits of the e-business and whether the individual or organization is prepared to facilitate e-business. In the second step e-business acceptance and adoption focus on making decisions to use e-business. Finally, usage and implementation focus on measuring e-business success (Molla and Licker 2001; DeLeone and McClean 2004; Hafeez et al 2006; Zhu et al. 2006).

Following suit, this study defines e-service adoption as a process with three steps applied from Zhu et al. (2006) (Figure 3). The first step which is called initiation, encompasses the consumer being aware and evaluating the e-service. The second step includes taking an interest in the service and making consequent decisions to use it. Finally, the third step is focused on the actual use of the service. In this study adoption is defined as the process, which includes initiation, interest and first time login (use) to the e-service. Adoption is empirically measured as click-through (interest) and the first time login (trial use) to an e-service.

![Figure 3 E-service adoption process (Zhu et al.2006, p. 1558)](image-url)
The research on the underlying factors that influence consumer adoption of e-services is comprehensive and has been studied within many research fields such as technological (e.g. Lin and Hsieh 2007), psychological (e.g. Chen and Dubinsky 2003), management sciences (e.g. Choin et al. 2011), service (e.g. de Ruyter et al. 2000) and marketing (e.g. Meuter et al. 2003).

This chapter discusses the research on the underlying factors of e-service adoption from five separate research streams. First, I review consumer adoption of technology and innovations. Second, I review research on consumer co-operation and participation. The third part reviews consumer perception of value in e-services. Fourth, a review of the consumer readiness variables that influence the initial adoption decision of e-service technologies is presented. Finally, the fifth research stream is based on consumer e-service benefits.

It is important to make a distinction between different research streams, since they all have been used to explain the underlying factors of consumer adoption of e-services. Although the empirical study is positioned mainly within the last stream of research, on service benefits, the other streams were important to create an overall understanding and helped in delineating the research problem. The streams were studied with a focus on how or whether they discuss service benefits as an indicator of adoption. Hence, the separate research streams include the theoretical foundations of the e-service benefits, which in this study are proposed to explain e-service adoption.

2.1.1. Adoption of technology and innovations

The first stream of adoption research is the adoption of technology and innovations. Research in user acceptance of new technology has been studied widely and it is probably one of the most mature research areas in information systems (IS) literature. The mainstream in IS adoption research has evolved around The Technology Acceptance Model (TAM) by Davis (1989), which was originally developed for organizational context and built on the theory of reasoned action (TRA). TAM suggests that users’ decision to adopt it-systems is primarily determined by their attitudes toward usefulness and ease of use, which will affect the user motivation (intention) to use the system, which in turn leads to actual usage. Ease of use is positively linked both to customers’ ability and willingness to reuse e-services (Davis and Wiedenbeck 2001). A multitude of research is based on TAM and it has also been modified by several studies. TAM has been used to measure user perceived service quality of websites with the help of a varying amount of dimensions and factors which support the ability to use the website such as usability, support, training, and courses (Al-Gathani and King 1999). The key purpose of TAM is to provide a basis for tracing the effect of external factors on internal beliefs, attitudes and intentions. However research has questioned the applicability of TAM in consumer markets where consumers may be freer to choose among many alternatives (Lin, Shih and Sher 2007). TAM is interesting for the conceptual framework of this study, as it suggests that both usefulness and ease of use affects motivation, which in turn leads to adoption. Both can be interpreted also as benefits of the service.

A more recent stream of IS research has examined interface, navigation and design issues (Dennis, Merrilees, Jayawardhena and Wright 2009). The objectives of interaction design are related to usability and user experience goals. Traditionally, usability goals have been concerned with meeting specific usability criteria such as efficiency, safety, utility and learnability. However, more recently user experience goals
have been connected with the nature of the user experience, and more subjective goals such as being satisfying, enjoyable, exciting, motivating and fun (Rogers, Sharp and Preece 2011). A diversity of technologies also being used to draw people's attention to information that attempts to change attitudes or prompt actions. Fogg (2003) has labeled this phenomenon persuasive technology. It includes interface tools designed to change what people think and how they behave. Examples of persuasive techniques are pop-up ads, warning messages, reminders, prompts, personalized messages and recommendations.

User interface (UI) design and especially persuasive techniques are designed to change people's attitudes and behavior (Shneiderman and Ben 2003). However, UI design and persuasive techniques focus on the usability and the visual content of an interactive product such as an interface or a learning tool. Consequently, they do not study the consumer end benefit of using the interactive product or explain what motivates the consumer to try the interactive product for the first time.

2.1.2. Co-production and participation

The second stream of research deals with co-production and participation, which are relationship oriented and focused on the interaction between the consumer and the company. As the adoption of an e-service requires at least some level of co-operation and participation, the research on this stream is interesting for this study as it also aims to explain the underlying factors of why customers are willing to co-operate and participate in e-services.

Co-production means that customers are engaged as active participants in the organizations’ work. Treating customers as “partial employees” can influence service outcome (Schneider and Bowen 1995; Legnick-Hall, Claycomb and Inks 2000; Auh et al. 2007). Customers may find co-production attractive because they enjoy increased perceived control over the service delivery process and have additional opportunities to make choices. Co-production can also offer customers higher levels of customization and cost reductions, which in turn can lead to more favorable assessments of the organization and increase customers’ intentions to spend over time (Schneider and Bowen 1995 in Auh. et. al 2007). Across industries, firms are trying to develop stronger partnerships with their customers and help them to be better co-producers (Vargo and Lusch 2004).

Services marketing literature has long recognized the role of customers as participants but customer participation itself has remained less researched (Auh et al. 2007). Participation means "the degree to which the customer is involved in producing and delivering the service" (Dabholkar 1990, p.484). Past research in customer participation primarily represents three streams (Bendabudi and Leone 2003). One research stream studies the economic benefits of customers self-serving themselves. The second stream focuses on managing customers as partial managers and applies general management models measuring the impact of customer participation on service quality and satisfaction. The third stream is customer motivation to co-create a service. The third research stream is interesting for the conceptual framework of this study, as it suggests that customers may find service co-operation attractive because of the increased opportunities of control, more choices, increased possibility of customization and cost reductions. These can be viewed as benefits of the service. Past research in customer participation also indicates that motivation is needed in order to
co-create a service (Bateson 1985; Dabholkar 1996; Schneider and Bowen 1995). The effect of motivation on co-creation is taken into consideration also later in this chapter.

2.1.3. Value in e-services

The third and most recent research stream within e-service adoption is customer perception of value in e-services. Customers are not a passive audience but active co-producers who create value with service providers, to better serve their personal needs and satisfaction. The proposition that the customer becomes a co-creator of value is central to the service-dominant logic (Payne et al. 2008). The company is responsible of value-creating processes that involve the customer as a co-creator of value. These value-creating processes occur when a customer consumes or uses a product or service. This emphasizes the development of customer-supplier relationships through interaction and dialog. Increasingly, customers are actively engaged in value co-creation, either by serving themselves or by cooperating with service providers. Encouraging customers to be value co-creators is considered the next frontier in competitive effectiveness and reflects a major damaging shift from goods-centered to service-centered logic in marketing (Dong, Evans and Zou 2008). Research to date suggests that relatively little is known about how customers engage in the co-creation of value (Payne et al. 2008). Perceived customer value has also gained attention in the e-service research because of its role in predicting purchase and gaining competitive advantage as technology has been suggested to influence value creation processes (Heinonen 2004). According to Heinonen (2004), the reasons for the success of the Web are lower search costs as well as a removal of traditional temporal (time) and spatial (place) boundaries. Value is also represented as a trade-off between perceived benefits and sacrifices (Chen and Dubinsky 2003). However, a positive attitude towards e-services or an intention to use them, do not necessarily lead to usage due to situational variables such as time constraints (Dijk et al. 2007). This means that if the benefits of usage do not exceed the sacrifices, such as loss of time, effort, or technical difficulties, customers may simply switch back to traditional channels (Yang, Cai, Zhou and Zhou 2005). The research on e-service customer value gives this study insight of consumer perceived benefits in an e-service context. A comprehensive discussion of these benefits will be found later in this chapter.

2.1.4. Consumer readiness

The fourth stream of research is the consumer readiness model by Meuter et al. (2005) who found motivation, ability and role clarity to be the key mediators of e-service adoption. In their model, Meuter et al. (2005) divided predictors of e-service adoption into mediating variables (motivation, ability and role clarity) and antecedent predictors (innovation characteristics and individual differences). The contribution of their model is the establishment of a set of consumer readiness variables as mediators between the antecedent variables and e-service adoption.

Motivation is directly related to benefits, since it refers to the consumer’s desire to adopt e-services because of the perceived benefits of using the e-service. A motivation construct by Bayton (1958, p. 282), describes motivation as “the drives, urges, wishes or desires which initiate a sequence of events known as behavior”. Motivation is the driving force that directs humans toward their goals (Bignon et al. 2010). According to Bettman (1979), motivation also affects both the direction and intensity of behavior. It is unlikely that an e-service would be used without a reason to perform. Customers
must not only know what to do and be able to use the e-service, they must also be motivated to use the e-service (Kelley, Skinner and Donnelly 1992, Legnick-Hall et al. 2000, Meuter et al. 2005). If customers believe their actions will make a positive difference, they are more likely to put the effort to be effective co-producers (Lovelock and Young 1979, Legnick-Hall et al. 2000).

Motivation is the key predictor of usage of technology-based products and services and it is well supported in the theoretical literature (Barczak, Scholder and Pilling 1997, Meuter et al. 2005). The willingness to perform has also been shown to be dependent on motivational levels for both employees and customers in the production of services (Larsson and Bowen 1989, Vroom 1964, Meuter et al. 2005). Motivation is said to be either intrinsic or extrinsic. Intrinsic motivation refers to motivation that is driven by an interest or enjoyment in the task itself, and exists within the individual rather than relying on any external pressure. Consumers may prefer an active role in the production of a service because they find participation to be intrinsically attractive (Bateson 1985; Dabholkar 1996; Schneider and Bowen 1995). Feelings of accomplishment, prestige, personal growth or mere pleasure from engaging in the activity are intrinsic motivational factors that are related to the use of e-services (Becker 1970; Rogers 1995 in Meuter et al. 2005).

Extrinsic motivation, which comes from outside of the individual, is often based on the self-interest (Dabholkar 1996; Schneider and Bowen 1995 in Meuter et al. 2005). Common extrinsic motivations are rewards like money, bonuses and grades, time saving, coercion and threat of punishment. Meuter et al. (2005) showed that both intrinsic and extrinsic motivations are important in influencing e-service adoption. Motivation can also be divided into utilitarian and hedonic motivation. The utilitarian motivation is defined as mission critical, decision effective and goal oriented. Utilitarian motivation shows that action starts from a mission or a task, and the acquired benefit depends on whether the mission is completed or not, or whether the mission is completed effectively during the process (To, Liao and Lin 2007). Examples of utilitarian benefits are time and cost savings and access to data and support services that might not otherwise been available (Meuter and Bitner 1998, Walker et al. 2002).

Hedonic motivation is based on the experience itself. Examples of hedonic consumer motivations are fun or enjoyment from using the technology (Dabholkar 1996) and spontaneous delight (Bitner et al. 2000). Thus, consumer motivation of e-service usage is more rational because consumers in an e-service context are seen as goal oriented and the hedonic aspect is not seen as relevant in most e-service offerings. Hedonic motivations of e-service usage are scarce and seen as more relevant in leisure related services (van Riel et al. 2001). Motivation is interesting for the conceptual framework of this study since it refers to the consumer’s desire to adopt e-services because of the perceived benefits of using the e-service. Thus, within the context of this study it is presumed that benefits motivate the consumer to adopt the e-service. Consequently, a comprehensive discussion of these benefits is presented in chapter 2.2.

The second consumer readiness variable "ability" refers to the consumer's ability to adopt e-services. Consumers who think they have the skills needed are more likely to act than those who doubt their own abilities (McKee, Simmers and Sand 2006). Ability relates to having the necessary skills and confidence required to perform a task (Ellen, Scholder, Bearden and Sharma 1991, Jayanti and Burns 1998, Jones 1986, Meuter et al. 2005). The perceived ability to successfully perform a given task or behavior, is termed self-efficacy (Ellen et al. 1991). Ability and self-efficacy have both been shown to be strong predictors of attitudes in a variety of situations (Maddux and Rogers 1983). Research has shown that competent behavior in a situation requires both specific skills

When human contacts are replaced with digital communication and e-services, the consumer counterpart in the process is the system or the tool offering the e-service (Grönroos, Heinonen, Isoniemi and Lindholm 2000). Previous studies in consumer ability and self-efficacy show that consumer knowledge and ability to use the e-services are critical factors for the success of e-services (Gustavsson, Ekdahl and Edvardsson 1999, Walker et al. 2002, Bigne, Hernández, Ruiz and Andreu 2010, Liljander et al. 2006). Both ability and role clarity has been shown to be directly linked to consumer usage of e-services (Bitner et al. 2002).

Previous studies clearly show that both motivation and customer education are needed to overcome barriers associated with e-services (Bitner et al. 2002, Parasuraman and Colby 2001, Zao et al. 2007). Motivation refers to the consumer’s desire to adopt e-services because of the perceived benefits of using the e-service. Better customer expertise is shown to lead to better output of co-production (Schneider and Bowen 1995; Kelley et al. 1992). The more complex the service, the more time and effort should be put into teaching the customer how to adopt and use the service. It is therefore critical for a firm to manage the limited amount of time and effort customers are ready to devote for this.

The different phases of the e-service experience has been defined by Mittal and Sawhney (2001). During the initial, post-purchase learning experience, consumers may engage in a variety of activities such as reading manuals, taking tutorials or engaging in self-guided exploration of the e-service. A key characteristic of this initial pre-purchase learning experience is that it requires consumer time and motivation. Depending on the required skills needed for using the e-service, the amount and the length of the learning process varies. Kraiger (2003, p.171) defines the e-service education above as "activities directed at the acquisition of knowledge, skills and attitudes for which there is an immediate or near-term application". Thus, similar activities can also be based on orientation or training. Companies can offer customer orientation programs to assist customers in understanding their roles and what to expect from the e-service process before experiencing it. Customer orientation can take the form of formal orientation programs, written literature and customer handbooks, directional cues and signage in the service environment and information obtained (Wilson et al. 2008, Yang et al. 2005). Typical marketing communicational tools for this kind of educational means are videos, manuals, flash banners/displays and other materials showing “how-to-do it” in an easy way.

Three direct effects of education have been found from the e-service context. First, education induces the consumer ability and skills of e-service usage (Kraiger 2003). Second, it induces the self-efficacy level of the consumer. Third, education also helps to clarify the consumer role in the e-service encounter (Davis and Wiedenbeck 2001).

Both customer ability and self-efficacy are interesting for the conceptual framework of this study since they both have a persuasive effect on the consumer response to e-service. It seems evident that companies should motivate the consumers to use the e-services and enhance their ability to use the e-service in order to improve e-service adoption.

The third consumer readiness variable role clarity refers to customers’ understanding of what is required from them in the service production (McKee 2006) and how they
are expected to perform (Bowen 1986, Mills, Chase and Margulies 1983, Legnick-Hall 1996, McKee 2006). The clearer the consumer’s role expectations, the greater is the likelihood that their contributions will lead to improved service outcomes (Mills et al. 1983). In e-services customers themselves have a vital role to play in creating service outcomes. The customer role is important both in the production, delivery and consumption of many types of e-services. Depending on the type and level of participation, the consumer is faced with many different roles requiring different performances. Customer service roles have depth as well as breath depending on the service category and context. For example, restaurant services vary from fast-food restaurants to fine dining situations with different utensils and interactions. The consumer is responsible for knowing how to perform his/her role and the depth of involvement in each category and context. If service provider and recipient roles are clearly defined, expectations can become more consistent and better managed. The research within role clarity as such is not very comprehensive and the construct is often connected to other adoption related constructs such as ability and self-efficacy, which both have been discussed earlier in this chapter.

Further, role clarity is directly linked to the consumer usage of e-services (Bitner et al. 2002). Dong et al. (2008) studied the effects of customer participation in co-created service recovery and showed that when customers participate in an e-service recovery process, they are more likely to report higher levels of role clarity, perceived value of future co-creation, satisfaction with the service recovery and intention to co-create value in the future. Meuter et al. (2005) found a significant, direct relationship between role clarity and adoption. Role clarity was together with extrinsic motivation the dominant consumer readiness variable predicting e-service trial in the context of their study. The more clear the role, the greater the possibility of improved e-service outcomes. Despite the knowledge of the importance of clear roles in service encounters, the consumer side of service roles within an e-service context has received little academic attention.

Role clarity is interesting for the conceptual framework of this study since it has a persuasive effect on the consumer e-service trial. Role clarity is also related to ease of use and if it is not well communicated, the consumer can abandon the e-service.

The strengths of the model by Meuter et al. (2005) for this study are twofold: First, their study refers to the consumer’s motivation to adopt e-services because of the perceived benefits of using the e-service. Secondly, their study shows that the consumer ability in terms of required skills, confidence, motivation and role clarity all have a persuasive effect on the consumer response to adopt an e-service.

The next chapter identifies and discusses the fifth research stream reviewing which perceived benefits are presumably the most influential ones in motivating consumers to use e-services.

2.2. E-service benefits

The benefits are important parts of the motivations behind the usage of e-services. Potential consumer benefits of e-service usage can be divided into utilitarian (task related) and hedonic (the experience itself). Consumer benefits of e-service usage tend to be more rational because consumers in an e-service context are seen as goal oriented and the hedonic aspect is not seen as relevant in most e-service offerings. Hedonic motivations of e-service usage are scarce and seen as more relevant in leisure related services (van Riel et al. 2001). Examples of utilitarian benefits are time and cost
savings, greater control over the service delivery, potentially more reliable information delivery, access to data and support services that may not otherwise been available, reduced waiting time, a higher perceived level of customization (Meuter and Bitner 1998, Walker et al. 2002), convenience of location (Kauffman and Lally 1994), efficiency, flexibility (Bitner et al. 2000) and new additional or extended services not available otherwise (Walker et al. 2002). Furthermore, consumers may find technology-based options attractive for other reasons, such as that it is easy to use, more convenient than the alternatives, or allows consumers to purposely avoid contact with the provider's personnel (Dabholkar 1996, Meuter et al. 2000). Examples of hedonic consumer benefits are fun or enjoyment from using the technology (Dabholkar 1994;1996) and spontaneous delight (Bitner et al. 2000).

Consumer benefits and the utility of different marketing channels have also been researched from a consumer channel choice perspective. Wendel and Dellaert (2005) explain consumer's media channel consideration as a function of the media channel's perceived benefits (trustworthy, detailed, time saving, easy, personal, stimulating and informative) during different usage situations. The shopping channel choice and the use of different channels at various stages of the shopping process has also been explained with the perceived product and process utility of the channels (Balasubramanian, Raghunathan and Mahajan 2005). Research has also showed that consumers use multiple channels within a purchase process since they prefer distinct channels at various stages. However, similar studies explaining consumer e-service channel choice during the different stages of the purchase process could not be found.

An extensive literature search and review focused on concepts related to the consumer e-service benefits in order to find the most important e-service benefits. Past studies have emphasized the importance of perceived benefits and encouraged companies to pay more attention to the potential benefits that they offer to their online users. Consumer benefits are assumed to have a positive effect on e-service adoption. The benefit concepts that are presented in this chapter were synthesized from prior computer, information technology, website, online shopping, service and e-service adoption research. These seven benefits are assumed to motivate the consumer and give him/her a reason to use the e-service. The list of reviewed e-service benefits is not extensive, since there also might be other e-service benefits, which motivate the consumer to use e-services. Nevertheless, these seven benefits seem to be the most commonly mentioned.

The following sub-chapters review the seven e-service benefits that were found in the literature and that potentially explain consumer e-service adoption: 1) Time saving, 2) Access to accurate information, 3) Convenience, 4) Monetary benefit, 5) Social contact, 6) Control and 7) Easy to use. Each benefit will be presented separately identifying and discussing the research on the benefit within the e-service environment. The last chapter includes a summary of the conceptual framework and a discussion of the research gaps found.

### 2.2.1. Time saving

Time saving is a central benefit in the past research. Services are major consumers and generators of consumer time and e-services are often designed to save consumer time (Oydele and Simpson 2007). Research on time saving when performing online shopping is relevant because e-services constitute a relevant part of the online shopping experience.
Perceived time saving is defined as to the extent to which a person believes that using a particular system would save time expended on the service process. Internet is profiled as a potential timesaver, since customers can make orders anytime and anywhere (Boyer and Hult 2006). The perception of time spent online versus in store has been shown to be one of the primary reasons to shop online (McDonald 1994; Morgansky and Cude 2000) and one of the most cited reasons for online shopping is the benefit of saving time (Alreck and Settle 2002; Bellman, Lohse and Johnson 1999; Bhatnagar, Misra and Rao 2000; Donthu and Garcia 1999; Eastlick and Feinberg 1999; Prudhomme, Boyer and Hult 2007; Verhoef and Langerak 2001). Reasons such as it takes less time to shop online (Alba and Hutchinson 1997; Burke 1997; Keeney 1999) and it takes less time to search for information (Bakos 1991) are probably the most influential benefits of online shopping. Kaufman and Lane (1996) showed that shoppers aim at maximizing shopping time and prefer convenient shopping times in a retail environment. Efficiency of the shopping process has also been shown to be one motivation to shop online (Babin, William and Mitch 1994; Batra and Ahtola 1991; Sherry, McGrath and Levy 1993). Consumers find online store convenient because they can choose when to shop according to their own schedule (Verhoef and Langerak 2001; Wolfbarger and Gilly 2001; To et al. 2007). Time pressure has also been shown to be one of the determinants to shop online (Beatty and Smith 1987; Shiravasan and Ratchford 1991; Verhoef and Langerak 2001).

Online shopping also increases search efficiency through minimizing travel time, avoiding traffic and parking problems as well as waiting lines (Childers, Carr, Peck and Carson 2001; Morgansky and Cude 2000). Burke (1997) indicated that Internet shopping provides 24/7 online services, which are not limited by time, space or weather. Fast customer service has also been shown to indicate value for online consumers (Blake, Neuendorf and Valdiserri 2005).

Similarly, in the context of e-services, consumers find e-services attractive because they offer the possibility to save time. E-services allow the service to be performed more quickly or efficiently than the traditional interpersonal alternative. Dabholkar (1996) proposed that speed is an important attribute of consumer evaluation and use of e-services. Although speed was not found to be significant, other studies have found speed to be an important determinant of preference for e-service in general (Bateson 1985), self-scanning in particular (Anselmsson 2001) and as a part of e-service temporal value (Heinonen and Strandvik 2008; Heinonen 2009). E-service users are motivated by time saving (Bateson 1985; Dabholkar 1996; Ding, Verma and Iqbal 2007; Heinonen 2009; Howard and Worboys 2003; Lin and Hsieh 2006; Meuter and Bitner 1998; Meuter et al. 2000; Meuter et al. 2005; Walker et al. 2002; Udo, Bagchi and Kirs 2010). Time saving is also rated as the most important factor for choosing e-service among all dimensions associated with customers’ attitudes towards e-services (Ding et al. 2007). Time saving within e-services is also seen a relative advantage compared to human means of service delivery (Walker et al. 2002). Under time allocation theory, consumers who consider their time as a valued resource may operate under time pressure and may use e-services as a way to optimize their valued time (Oydele and Simpson 2007; Rojas-Mendez, Davies, Omer, Chethamronchai and Madran 2002). Many studies have found time to be a significant factor in affecting outcome measures such as service quality, satisfaction and repurchase intention (Durrande-Morreau 1999; Houston et al. 1998; Jones et al. 2003; Meuter et al. 2000; Parasuraman, Zeithaml and Berry 1988; 1991; Wolfinbarger and Gilly 2003). Anselmsson (2001) found speed of delivery and time to perform the self-service as significant factors for e-service quality. Time saving has also been shown to be a part of perceived usefulness in mobile
marketing (Karjaluoto, Lehto, Leppäniemi and Jayawardhena 2008; Gummerus and Pihlström 2011).

As further support of the presumed importance of time within e-services, reduced waiting time (Ding et al. 2007; Meuter and Bitner 1998; Walker et al. 2002,) and service and location convenience (Kauffman and Lally 1994), has received a lot of attention within marketing research (Houston et al. 1998; Meuter et al. 2000; Dabholkar and Bagozzi 2002). Consumers find e-service convenient because they offer the benefit to use the service at convenient times and the possibility to save time on information searching (Yen and Gwinner 2003). Berry et al. 2002 defined service convenience as consumer time and effort perceptions related to buying or using a service.

The time saving related benefit dimensions are listed in Table 1 with respective sources. The first column shows potential sub-dimensions of time saving related benefits. The second column provides references.

Table 1  Time saving related consumer benefit dimensions

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flexibility</td>
<td>Temporal value Heinonen 2009.</td>
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</table>

2.2.2. Access to accurate information

This chapter reviews the research on both information content and access to information within the e-service environment. The issue of online information is seen as a relevant area of research in this study because consumers find e-services attractive because they provide both information content and access to information (Zeithaml, Parasuraman and Malhotra 2002). E-services are also a part of online shopping and the
availability and depth of information are seen as important reasons for shopping online (Li et al. 1999; Lin et al. 2010; Swaminathan et al. 1999; Van den Poel, Leunis and Leunis 1999; Wolfinbarger and Gilly 2001; Zellwager 1997; Zeithaml et al. 2002).

The Web has become one of the most important tools for information search (Chen and Dubinsky 2003). One of the key benefits of online shopping is the reduction in search costs for products and product related information (Alba et al. 1997; Bakos 1997; Keeney 1999, Arierly 2000).

Research shows that both information and customization motivate consumers to shop online (Ghosh 1998; Keeney 1999). Information quality is one of the main determinants of user perceived usefulness and ease of use (McKinney et al. 2002, Yang et al. 2005). Yang et al. (2005) classified the information quality dimension into "usefulness of content" and the "adequacy of information". "The usefulness of content" was seen as the uniqueness, relevance and timeliness of the information. Personal information has also been shown to be a part of perceived usefulness in mobile marketing (Karjaluoto et al. 2006). "The adequacy of information" was seen as the comprehensiveness and completeness of the information. In a study by Delone and McLean (1992) relevance, timeliness and accuracy of the information were seen as the determinants of an information system (Yang et al. 2005, Wang et al. 2012). Similarly, the end-user computing satisfaction-model by Doll and Torkzadeh (1988; 94) emphasized three determinants of user satisfaction: content, accuracy and timeliness.

Online users also appreciate and look for supplementary services such as company information, professional tips and advice, research reports, hyperlinks to relevant Web sites, contact information and archives (Yang et al. 2005). Examples of information related benefits of e-services are potentially more reliable information delivery, access to data and support services that way not otherwise been available and a higher perceived level of customization (Meuter and Bitner 1998, Walker et al. 2002). The accessibility to relevant content and the relevance and timeliness of information has also been shown to have impact on online service quality (Jacoby 1984, Bauer, Falk and Hammerschmidt 2006). According to Kuo et al. (2009) a part of online service quality is content quality, which includes complete content (Chae, Kim, Kim and Ryu 2002), appropriate content (Kuo 2003), important content (Kim, Park and Jeong 2004), fashionable content (Yang et. al 2005) and regularly updated content (Kuo et al. 2009).

Research has also shown that companies which perform better at providing post-purchase customer support through their websites (information on troubleshooting, upgrades, maintenance etc.) are likely to build strong relationships with their customers and foster customer retention (Otim and Grover 2006). The ability to search for price and quality information has been shown to increase satisfaction with both the experience and product purchased and to improve intentions to revisit and repurchase from Internet (Lynch and Arierly 2000).

The "access to accurate information" related consumer benefit dimensions of e-service are listed in Table 2 with respective sources. The first column shows potential sub-dimensions of information content and access related benefits to both online shopping and e-service environments, as studied in past research. The second column provides references of the information content and access related benefit dimensions.
Table 2  Access to accurate information related consumer benefit dimensions

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>References</th>
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</table>

2.2.3. Convenience

This chapter reviews the research on convenience within both the online shopping and e-service environment. The issue of convenience is seen as a relevant area of research in this study because convenience is one of the reasons both for shopping online (Ghosh 1997; Morgansky and Cude 2000; Yang, Peterson and Huang 2001; King and Liu 2004; Chang, Cheung and Lai 2005) and using e-services (Burke 1997; Berry et al. 2002; Yen and Gwinner 2003).

Persons who perceive the online environment as offering great convenience are more likely to consider the online environment as useful (Childers et al. 2005). Perceptions of usefulness are manifested by the perceptions "easy to use" (Childers et al. 2005) and "to order easily" (To et al. 2007). This means that convenience is connected to the consumer benefit "easy to use" which is discussed in more depth later in this study (see chapter 2.2.7.).
Convenience is often connected to three main aspects such as 1) time 2) efficiency and 3) accessibility. Firstly, convenience is connected with a time aspect. The opportunity to access the online shop at any time (Hofacker 2001), at the most convenient buying and opening hours (Kaufman and Lane 1996) and without time constraints (Yale and Venkatesh 1986) are perceived as convenient aspects of online shopping. Secondly, convenience is connected to efficiency due to low search costs (Childers et al. 2001), saving time (Childers et al. 2001) and speed of delivery (Anselmsson 2001). Thirdly, convenience is connected to accessibility as the convenience of location (Kauffman and Lally 1994) and the possibility to shop anywhere (Udo et al. 2010), are perceived as elements of convenience. Furthermore, Yale and Venkatesh (1996) suggested six classes of online convenience: time utilization, handiness, appropriateness, portability, accessibility and avoidance of unpleasant issues.

Service and location convenience (Kauffman and Lally 1994), has received a lot of attention within marketing research (Dabholkar and Bagozzi 2002; Houston et al. 1998; Meuter et al. 2000). Consumers find e-service convenient because they offer the benefit to use the service at convenient times and the possibility to save time on information searching (Yen and Gwinner 2003). Berry, Seiders and Grewal (2002) defined service convenience as consumer time and effort perceptions related to buying or using a service. Both are important factors also in understanding e-service behavior; as they provide the freedom to shop, use and receive goods and services at anytime and anywhere (Burke 1997; Yen and Gwinner 2003). Similarly the temporal value suggested by Heinonen (2004), means the customer perceptions of time issues when the service interaction occurs. It contains the value received at different times. Temporal value related to time allocations, time availability, time orientations, opening hours and punctuality has been suggested to involve both benefits and sacrifice (Heinonen 2004). The convenience value of mobile services has been defined as the ease and speed of achieving a task effectively and conveniently (Pura 2005). This means that service convenience is connected to the e-service benefit time saving, which was discussed in more depth, earlier in this study.

According to Kim, Kim and Lennon (2006), customer satisfaction is positively affected by the convenience of an online marketplace. Also other researchers (Meuter et al. 2000; Shymanski and Hise 2000; Srinivasan et al. 2002; Torkzadeh and Dhillon 2002) have found that service convenience has a significant influence on perceived service quality and customer satisfaction.

The convenience related benefit dimensions are listed in Table 3 with respective sources. The first column shows potential sub-dimensions of convenience related benefits to both online shopping and e-service environments, as studied in past research. The second column provides references of the convenience related benefit dimensions.
Table 3  Convenience related consumer benefit dimensions

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>References</th>
</tr>
</thead>
<tbody>
<tr>
<td>Useful and easy to use</td>
<td>Childers et al. 2001, To et al. 2007.</td>
</tr>
<tr>
<td>Low search cost</td>
<td>Childers et al. 2001.</td>
</tr>
<tr>
<td>Low effort</td>
<td>Berry et al. 2002.</td>
</tr>
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</table>

2.2.4. Monetary savings

This chapter reviews the research on monetary savings within the e-service environment. The issue of monetary savings is seen as a relevant area of research in this study because the monetary benefits are seen as reasons for using e-services (Ding et al. 2007; Meuter and Bitner 1997; Walker et al. 2002).

Reibstein (2002) found that price is an important choice criterion for most online customers. Previous research also shows that cost saving (Ghosh 1998; Keeney 1999) is one of the benefits of Internet shopping. According to Ding et al. (2007), the cost saving can be operationalized as the price level, which is manipulated by varying price per transaction. Perceived cost saving is also viewed as the extent to which a person believes using a particular system will save his or her money expended to the service process (Ding et al. 2007). Cost savings can occur as lower search costs as customers do not have to physically get to the shop (Bakos 1991) and because it saves the expenditure of product cost and browsing cost (Keeney 1999). Consumers are therefore able to get the product at a lower overall cost (To et al. 2007).

The e-service option reduces the workload of service vendors (Ding et al. 2007), which in many cases leads to either lower product/service prices or/and service fees for the customer (Auh, Bell, McLeaold and Shih 2007). Similarly, Globerson and Maggard (1991) indicate that the more effort the customer is required to invest in the e-service, the lower the price the customer is typically willing to pay for that service. In this case, the service value is a tradeoff between the benefits (savings) and sacrifices (costs) involved. This means that consumers’ value e-services because the service reduces the cost involved with evaluating, buying or/and using the service (Sheth, Newman and Gross 1991). The effort the customer has to go through in the process constitutes the perceived costs of the e-service. The process of evaluating, buying and using the service online can lead to monetary savings in terms of lower product or service prices or reductions in service costs. The cost involved in the service process can be either monetary, time related, energy or psychological (Lanseng and Andreassen 2007). Consumers preferring self-service, perceived cost saving as critical positive factors in the service process (Ding et al. 2007). Customers save money in terms of lower service fees when they use the e-service (Davis 1989; Davis, Bagozzi and Warshaw 1989;
Meuter et al. (2000) identified the factor "save money" and other financial benefits as one of the sub-categories driving customers to use e-services. Moreover, Howard and Worboys (2003) found both price and cost savings as one of the big advantages favoring e-service. Monetary value has also been researched after using a given technology and defined as the degree to which a user evaluates e-services in terms of monetary value (Choi, Kim and Kim 2011; Dodds and Monroe 1985; Lee, Kim, Lee and Kim 2002; Pagani 2004; Zeithaml 1988).

The monetary savings related consumer benefits of e-service are listed in Table 4 with respective sources. The first column shows potential sub-dimensions of monetary savings related benefits to both online shopping and e-service environments, as studied in past research. The second column provides references of the monetary savings related benefit dimensions.

<table>
<thead>
<tr>
<th>Table 4</th>
<th>Monetary savings related consumer benefit dimensions</th>
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</thead>
<tbody>
<tr>
<td><strong>Dimensions</strong></td>
<td><strong>References</strong></td>
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</tbody>
</table>

### 2.2.5. **Lack of social contact**

This chapter reviews the research on lack of social contact within e-service environment. The issue of lack of social contact is seen as a relevant area of research in this study because the lack of social contact has been found to be a reason for using e-services (Dabholkar 1996; Meuter et al. 2000).

Consumers prefer websites because their questions can be answered in the online channel (Ariely 2000; Venkatesh 1998; Zeithaml et al. 2002) instead of having to contact people (Zeithaml et al. 2002). However, the lack of interaction with a service employee can also be a negative issue for some consumers, especially those who tend to avoid machines (Dabholkar and Bagozzi 2002).

Lack of social contact has also been found to be a reason for shopping online (Joerding and Meissner 1998; To et al. 2007; Wolfinbarger and Gilly 2001). Online shopping allows consumers to browse and buy products and services without any contact with the sales people. Shoppers do not have to worry about bargaining with sales people or worrying about others around them as online shopping offers the consumers the benefit of purposely avoiding contact with the provider’s personnel (To et al. 2007).
Overall it may be concluded that although the lack of social contact, is perceived as a benefit by some customers, it is not generally as relevant as the previously proposed benefits. Moreover, lack of social contact may be considered a reason not to use e-services.

The lack of social contact related benefit dimensions of online shopping and e-service are listed in Table 5 with respective sources. The first column shows potential sub-dimensions of lack of social contact related benefits to both online shopping and e-service environments, as studied in past research. The second column provides references of the lack of social contact related benefit dimensions.

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>References</th>
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### 2.2.6. Control

This chapter reviews the research on control within the e-service environment. The issue of control is seen as a relevant area of research in this study because control has been found to have an impact both on the consumer decision to use both self-services and e-services (Meuter et al. 2000; Walker et al. 2002).

Consumers play a vital role in the service encounter meaning that both customers and employees constitute the human resources of the service organization (Bowen 1986). This has led to the suggestion that customers should be viewed as "partial employees" at numerous points during the service creation. The role of the consumer is even more enhanced in e-services than in traditional face-to-face services, as the consumer often performs the e-service alone without any personal interaction with the company.

Perceived control has been described as the amount of control that a consumer feels that he/she has over the service encounter (Bateson and Hui 1987; Dabholkar 1996, Daniel and Storey 1997; Langeard, Bateson, Lovelock and Eiglier 1981; Rogers 1995). Behavioral control has been defined as the customers’ ability to successfully perform the service task without service personnel contact (Ding et al. 2007). Several empirical findings show that individual traits relate to the need for control or perceptions of ability to control the transaction process. Langeard et al. (1981) surveyed self-service customers and found that they preferred options that favored efficiency and increased control. Bateson (1985) found a group of customers, which used the self-service option even without monetary or timesaving benefits, which could be partially explained by the dimension of perceived control. Consumers who prefer self-service also perceive control as a critical factor in the service process (Ding et al. 2007; Langeard et al. 1981). Dabholkar (1996) proposed that those consumers, who enjoy self-service, also perceive greater control and higher service quality, which also directly impacts intention to use the option. Furthermore, service value can also be enhanced by increasing perceived control (Bateson and Hui 1987). Also, some self-service encounter benefits can be related to the aspects of personal control according to Meuter et al. (2000).
E-services offer the consumer the opportunity to control the business transaction process, which may enhance consumer usage of the e-service and his/her perceptions of the service quality (Oydele and Simpson 2006). Control within a e-service setting is defined as the possibility to initiate the transaction when ready, proceed at a desired rate, and be entirely responsible for the accuracy of the transaction when ready, given consumer proficiency with the e-service used.

Behavioral control has also been identified to impact perceived performance of e-service (Ding et al. 2007; Meuter et al. 2003; Oydele and Simpson 2006). Meuter et al. (2003) showed that consumers using e-service technologies provided customers with the intrinsic benefit "feelings of independence" and that customers view service quality as higher because self-service technology can "perform the service better than by relying on a service provider" or that "the e-service provides more control over the transaction" (Meuter et al. 2003). Thus, the e-service benefit control can be a critical factor in the decisions to use the e-service depending on the unique control-related traits of each individual (Oydele and Simpson 2006). Those consumers with high levels of self-confidence will likely choose to control the transaction and select e-service over the face-to-face service option (Oydele and Simpson 2006). Forcing consumers to use e-services has also been studied and previous research shows that consumers who can make their own choices are more intrinsically motivated than consumers engaging in activities without having a choice (Zuckerman et al. 2008). The support provided by the studies above, indicate that those consumer characteristics related to consumer perceptions about control as well as need for control may also be viable in explaining consumer e-service usage.

The control related benefit dimension of online shopping and e-service is listed in Table 6 with respective sources. The first column shows a sub-dimension of control related benefits to both online shopping and e-service environments, as studied in past research. The second column provides references of the control related benefit dimension.

<table>
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<th>Dimension</th>
<th>References</th>
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2.2.7. Easy to use

This chapter reviews the research on the benefit easy to use within the e-service environment. This chapter identifies and discusses research in customer self-efficacy and ability since both are related to the benefit “Easy to use”. If consumers are both able and confident in their e-service use, they find the e-service easy to use.

When human contacts are replaced with digital communication and e-service, the customer counterpart in the process is the system or the tool offering the e-service (Grönroos et al. 2000). In order to have the competent behavior for interacting with the e-service systems or the tool, the consumer must require at least some level of ability and self-efficacy for doing this. Ability is directly linked to consumer usage of e-services
Ability relates to having the necessary skills and confidence required to perform a task (Ellen et al. 1991; Jayanti and Burns 1998; Jones 1986; Meuter et al. 2005). The perceived ability to successfully perform a given task or behavior, is termed self-efficacy (Ellen et al. 1991). The concept of self-efficacy is usually referred to when consumers have the intention to carry out a behavior but the actual behavior is thwarted because of the lack of confidence or control over behavior. Perceptions of self-efficacy may come from several sources: personal experience, vicarious experience, verbal persuasion and emotional arousal (Bandura 1977). Thus, the strongest influence to self-efficacy comes from direct and previous related experiences (Venkatesh et al. 1996). According to Frantzich (1979), technological innovation is more likely to occur when the individual perceives that she/he has the necessary skills to implement the change. However, resistance discourages direct experience with an innovation. This means that potential adopters form expectations of their ability of their previous experiences and the information available on the innovation itself (Ellen et al. 1991).

An individual’s perception of a particular computer system’s ease of use is anchored to her or his general computer self-efficacy at all times (Venkatesh et al. 1996). According to Ribbink et al. (2004), research has shown that competent behavior in a situation requires both specific skills and beliefs of ability or skill (Ellen et al. 1991; Hoffman and Novak 1996; Maddux et al. 1986; Meuter et al. 2005; Seltzer 1983). Ability and self-efficacy have both been shown to be strong predictors of both behavior (Maddux et al. 1986) and attitudes (Maddux and Rogers 1983) in a variety of situations.

Also, experience with computer technology and perceived outcome and usage are related (Agarwal and Prasad 1999). Several studies show a strong effect on computer self-efficacy on the users responses to information technology, which includes technological innovations (Davis et al. 1989; Kelman and Warwick 1973; Leonard-Barton and Kraus 1985), resistance to technology (Ellen et al. 1991), word processors and personal computers (Hill, Smith and Mann 1985; Hill, Smith, Mann and Roberson 1885), online shopping (Agrawal and Prasad 1999; Venkatesh and Davis 2000; Wu, Chen and Lin 2007), computing skills (Talja 2005), Internet use (Hsu and Chiu 2004) and web-searching skills (Kuo, Chu, Hsu and Hsieh 2004). This means that a consumer, who has more experience of computer technology related use, might be more willing to use the e-service.

The subjective evaluation of competence or ability to perform the required task(s) or behavior is determined by the individuals’ interactions with and feedback from his/her environment and may not necessarily reflect actual competence or ability (Bandura 1977). When a new technological innovation is introduced, potential adopters consider both the perceived benefits over existing methods as well as the risks or costs involved in the change. However, when faced with a change or an alternative, which the person feels less capable of handling, he or she may resist because of feelings of inadequacy or discomfort, which may arise from anticipated change. People tend to gravitate toward those activities that they feel they are capable of and tend to avoid tasks that they feel exceed their coping capabilities (Bandura 1982). Even when a given alternative is
acknowledged as better, feelings of low-efficacy often lead individuals to choose the alternatives they can handle or manage rather than the best one (Seltzer 1983). In this way, individuals attempt to minimize discomfort.

In order to lower the customer expectations of the difficulty of the system use, it is important to enhance the consumer perception of the ease of use of the system. Ease of use is an essential element of consumer usage of computer technologies (Davis 1989; Morris and Turner 2001; Venkatesh 2000; Venkatesh and Davis 2000). Ease of use is also seen as particularly important for new users (Gefen and Straub 2000; Ribbnik, van Riel, Liljander and Streukens 2004) and it enhances the efficiency of using the e-service (Xue and Harker 2002). In an e-tailing context, aspects such as functionality, accessibility of information, ease of ordering and navigation (Reibstein 2002) are elements of ease of use. Ease of use is also a determinant of service quality (Dabholkar 1996) and decisive for customer satisfaction. In the e-service setting, resistance may arise from technology anxiety, which refers to the fear, apprehension and hope customers feel about general technology tools when considering e-services (Meuter et al. 2003). Research shows that technological anxiety has a negative effect on customer satisfaction and intention to use e-services, but if the individual is willing to try, perceptions of the efficacy affect the degree of effort, the persistence and the level of learning (Bandura 1977).

As discussed before, three facts support that an individual’s perception of ease of use is important in order to improve self-efficacy: First, an individual’s perception of a particular system’s ease of use is anchored to her or his general computer self-efficacy at all times (Venkatesh et al. 1996). Secondly, ease of use is an essential element of consumer usage of computer technologies (Davis 1989; Morris and Turner 2001; Ribbink et al. 2004; Venkatesh 2000; Venkatesh and Davis 2000). Third, ease of use is seen as particularly important for new users, which is especially relevant to the context of this study which measures the first trial of an e-service (Gefen and Straub 2000; Ribbnik et al. 2004).

Since previous research clearly shows that the individual’s perception of a particular system’s ease of use is anchored to her or his general computer self-efficacy, this study presumes that by improving the consumer’s perception about e-service ease of use, the self-efficacy is enhanced and the consumer is more willing to try the e-service. This can be achieved by communicating the e-service benefit “easy to use”.

Previous research indicates that if consumers are both able and confident of their e-service use, they find the e-service easy to use. In this study, for mobile subscriptions, the benefit easy to use is operationalized as the easiness to get access to your mobile subscription account, to easily check, buy and upgrade services and the easy access to customer service and invoices.

The easy to use related benefit dimensions of online shopping and e-service are listed in Table 7 with respective sources. The first column shows potential sub-dimensions of “Easy to use” related benefits to both online shopping and e-service environments, as studied in past research. The second column provides references of the “Easy to use” related benefit dimensions.
2.3. Conclusions regarding e-service benefits

Altogether seven consumer benefits of e-service were discussed in this chapter: 1) Time savings, 2) Access to accurate information, 3) Convenience, 4) Monetary benefits, 5) Lack of social contact, 6) Control and 7) Easy to use. The benefits were adopted mainly from prior online shopping, service, Self-service and e-service adoption research. They represent the most commonly proposed e-service benefits, based on my review of the literature. All seven benefits may contribute to explaining why new customers adopt an e-service. They motivate consumers and give them a reason to try and continuously use the e-service. The discussed e-service benefits are not exhaustive and there might be other benefits that motivate the consumer. Such benefits include hedonic benefits, and customization (Meuter and Bitner 1998; Walker et al. 2002), or the provision of services that are not available elsewhere (Walker et al. 2002). Nevertheless, for the purpose of this thesis, the seven listed benefits can be considered sufficiently corroborated by past research and applicable in many contexts. Although, out of the seven benefits presented, three benefits 1) Time saving, 2) Access to accurate information and 3) Easy to use, stand out as the benefits that have been researched and referred to most often, according to the literature review.

It is also important to remember that the same benefits do not motivate all consumers. Some consumers may value time saved and others may value monetary savings (Wilson et al. 2008). Consumers are dealing with services, which are becoming increasingly
sophisticated (Lin and Hiseh 2007). Even when customers can see the benefits of using e-services, they may avoid them if they are not comfortable and/or ready to use the technology (Meuter et al. 2003). This means that the potential company benefits or gains of e-services are accompanied by a number of potential risks: e-services can lead to frustrated customers and create distances between customers and service personnel which could lead to reduced customer loyalty and satisfaction (Parasuraman 2000; Seines and Hansen 2001; Walker et al. 2002; Yen and Gwinner 2003).

This study presumes that the benefits discussed above have a persuasive effect on the consumer e-service adoption. In order for the customers to understand the benefits involved, the company has to communicate the benefits to them.

2.4. E-service communication

This chapter reviews research on online communication of services, and on the effect of online communication on consumer responses. Thereafter research specifically on e-mail marketing is reviewed.

2.4.1. Online communication of services

The use of Internet as a service channel has increased during past years, which has created new demands for communicating and advertising services online. There are three main reasons why the Web is suitable for both promoting and delivering services. Firstly, the availability and depth of online information provide consumers flexible access to comprehensive amount of information (Zeithaml et al. 2002). Secondly, Internet facilitates service transactions (Luk et al. 2002). Thirdly, Internet offers the company a cost effective way to both reach and serve the consumer.

Service communication has been seen as a tool to assist consumers through the service process (George and Berry 1981; Mortimer 2002; 2008). Marketing communication is an essential part of service and service marketing communication effectiveness is tied to how the consumer interacts with the company at all contact points (Heinonen and Strandvik 2007). The limited amount of both time and effort customers are ready to devote to the e-service makes e-service communication even more critical for the firm. The more complex the e-service, the more time and effort should be put into assisting the consumer. Most of the service communication research has focused on service management in face-to-face contacts between the customer and the company (Luk, Chan and Li 2002), with only a few exceptions (Heinonen and Strandvik 2005; Liljander et al. 2006; Prins and Verhoef 2007). Further, the majority of studies within advertising of services have concentrated on either exploring the content of service advertisements or on creating general conceptual frameworks (Mortimer 2008). Thus, there are some exceptions from research within Internet banking. According to Laukkanen et al. (2009), communication is needed in order to reduce both risks perceptions and resistance of innovations (Laukkanen et al. 2009). Consequently, Laukkanen et al. (2009) claim that communication reduces risks perceptions and resistance in general and show results, which indicate that banks should more actively offer both guidance and education, which is related to Internet banking services, especially to those whose resistance are functional in nature. Moreover, they suggest that banks should use targeted mass media communication to current non-users in order to highlight the positive features of Internet banking.
Consequently, this study presumes that e-service communication should be seen as a way to increase both e-service accessibility and usage by supporting the consumer in the different stages of the e-service adoption process. The process of communicating e-services should cover the three steps of the adoption process defined earlier in this study (Chapter 2.1.) The first step, which is called initiation, is focused on the consumer being aware and evaluating the e-service. In order for the consumer to find and be able to start using the e-service, the company needs to communicate where the consumer can find the service. Although guiding the consumer to the e-service is essential, there is practically no previous research about either communicating the e-service or the effect of this kind of communication. The second step is based on making decisions to use the e-service meaning that if the consumer finds the e-service interesting enough, the consumer clicks further to the e-service. A positive attitude towards technology and e-services do not necessarily lead to adoption of the e-service, as consumers are willing to trade their time and effort only if they perceive some kind of value from using the e-service. Since e-service usage requires at least some level of effort from the consumer, consumers need to perceive some kind of benefit in order to adopt the e-service. A comprehensive discussion of those benefits, which motivate the consumer so use e-services, has been discussed comprehensively earlier in this chapter. The benefits are important parts of the motivations behind the usage of e-services. In order to build positive consumer perceptions of e-service benefits and drive e-service adoption, e-service benefits need to be communicated to the consumer.

A study within Internet banking (Laukkanen et al. 2009) suggest communication strategies for avoiding resistance with Internet banking, such as avoiding functional resistors by marketing the benefits and the relative advantage of using Internet banking. Consumer benefits are also included in advertising persuasion models such as the means-end-chain (Reynolds, Gengler and Howard 1995). The model explains persuasion through communicating means-ends levels of information in advertising. It argues that consumers perceive the personal relevance and desirability of product attributes in terms of their association with personal consequences of product usage. The relevance and desirability of personal consequences are derived from their association with a consumer’s personal values. The strength of association between means-end information communicated by an ad will contribute to the explanation of brand persuasion. Support is also obtained for the prediction that the effect on brand persuasion of communicating means-end associations will be stronger for those who are not loyal users of the brand (Reynolds et al. 1995). Persuasion models such as the means-end-chain are widely used. Examples of the use of means-end-chains within e-service research can be found within mobile banking studies (Laukkanen 2007).

To date, studies have shown that perceived benefits affect customer satisfaction and the intentions to use a service (Meuter 2000; 2005), but no research has been carried out about whether communicating e-service benefits has any effect on e-service adoption.

Finally, the third step is focused on the use of the service meaning that the communication has to assist consumers through the service process and to activate and support further use of the e-service. The two first steps of this process are of interest to this study.

So far the majority of studies within services advertising have concentrated on either exploring the content of service advertisements or on creating general conceptual frameworks (Mortimer 2008), whereas service communication research has mainly focused on service management in face-to-face contacts between the customer and the company (Luk et al. 2002). There are several evident research gaps within e-service
communication. Up to this date, no research within e-service research has discussed the role or the content of e-service communication during the different stages of e-service adoption. In particular, there is a lack of research on how communication can be used in order to encourage consumers to use e-services. When considering the number of studies that have shown that e-service benefits are important to customers, it is high time to study the effect of communicating these benefits.

2.4.2. Effect of online communication

Worldwide digital ad spending topped 100 billion USD in 2012 (eMarketer 2013). According to eMarketer (2013) the Internet share of worldwide total ad spending will increase from 21.7% in 2013 to 25.9% in 2016. Online advertising includes display ads, rich media ads, video ads, search engine advertising, classifieds, mobile and local advertising, sponsorships, affiliate marketing, e-mail marketing, online catalogs, social networks, blogs, apps and game advertising. The growth of online advertising is explained by its efficiency in terms of an addressable and cost-efficient medium, a flexible format and better accessibility compared to traditional offline channels.

The development of digital markets has created new opportunities for tracking the effect of online communication and lately an increasing amount of research has been dedicated to online advertising efficiency (Barreto 2013; Brettel and Spilker-Attig 2010; Chatterjee, Hoffman and Novak 2003; Dahlen 2001; Day, Shyi and Wang 2006; Madhavaram and Appan 2010; Patsioura, Vlachopoulou and Mathou 2009). Evaluation of the Web as an advertising medium has been affected by academic research in traditional advertising (Patsioura et al. 2009). Well known models such as the AIDA model (Meegnaghan 1998) and the hierarchy of effects model (Lavidge and Steiner 1961) have been used to explain the online consumer-persuasion process (Graham and Havlena 2007; Matzler, Mooradian, King and Linder 2010). Studies have established relationships such as the influence of online advertising on cognition, affect and behavior such as attitude toward an ad (e.g. Briggs and Hollis 1997; Karson and Fisher 2005), attitude towards a website (e.g. Elliot and Speck 2005), or a webstore (e.g. Kim and Lennon 2008), brand attitude (e.g. Madhavaram and Appan 2010), mood (e.g. Park et al. 2005), purchase intention (e.g. Kim and Lennon 2008; Kimelfeldt and Watt 2001), and selling performance (e.g. Luk et al. 2002; Manchanda, Dube, Coh and Chingunta 2006). Studies have also investigated the effect of banner ads on the brand awareness and image (e.g. Briggs and Hollis 1997) and the effect of banner ads for high and low involvement products (Dahlen, Ekborn and Möller 2000) or functional and expressive products (Dahlen 2001). Prior research has also attempted to explain online purchase intentions with the help of the framework of the technology adoption model, focusing on technical performance, or Roger’s diffusion of innovation model (e.g. Kah, Lee and Chung 2010).

Nevertheless, in their model of how online ads work, Shankar and Hollinger (2007) argued that only a small part of consumers remember Web ad content and interact with the brand due to the ad (Yoo 2012). Also Drèze and Hussrerr (2003) report that more than half of Internet users may not pay attention to online ads. The consumers decide if they spend, at what time they spend, and how much time they spend on the Internet. The consumers also decide what kind of information they browse and use (Luk et al. 2002). If consumers do not look at ads, they cannot consciously process, remember and click through it (Yoo 2012). This means that the traditional approaches of online advertising have failed to take into consideration the unique characteristics of the online medium, such as high-speed interactivity, short exposure time and space. The
majority of the described research is indirect evidence, such as surveys or laboratory experiments where the focus has been on understanding the effect of a single online element on the awareness stage. Due to the lack of objective and unbiased criteria for ad awareness and memorization, the results remain ambiguous.

Internet is a unique marketing medium because behavioral consumer responses to online communication can be easily tracked. Hence, the focus of Internet advertising research has shifted from consumers’ attitudes to advertising effectiveness in terms of actual behavior (Ha 2008 in Barreto 2013), such as the traffic generated in terms of click-throughs, logins and sales. Click-throughs are an important metric for the Web (Chatterjee et al. 2003). Rigorous examination of consumer click-throughs is important for several reasons. First, click-throughs are behavioral and therefore an accountable measure for online marketing activities. Second, click-throughs are an important mechanism for driving traffic to the websites. Finally, click-throughs address several fundamental issues of both theoretical and practical importance of online response measurement including the number of times an ad should be displayed or how many times an e-mail should be sent.

The effectiveness of Internet communication remains a controversial issue since the click-through rates are considered to be declining and have been reported to be between 0.06% and 6%, depending on the medium (Dahlen 2001; Sherman and Deighton 2001; Warren 2001; Yoo 2012). However, research shows that targeting online communication to specific customers and websites increases the response rates (Sherman and Deighton 2006). Using aggregate data also shows that increased online advertising leads to increased click-through rates (Ilfield and Winer 2002). Nevertheless, I have found one study (Manchanda et al. 2006) in which the effect of online advertising tracked a behavioral response (purchase). Thus, they did not have information on the specific message of each online element. Further, the identified individual was tracked with the help of a unique computer (cookie), albeit not on a unique consumer level.

Behavioral consumer responses, such as click-throughs, sales and logins can be easily tracked. However, the majority of the research is indirect evidence such as field surveys or laboratory experiments where the focus of the research has been on understanding the effect or an online element on the awareness stage. None of the research takes into consideration the potential for the kind of high-speed interaction in which awareness can lead directly to action. There is clearly a lack of studies measuring the effect of single independent online messages, which are real behavioral responses such as the measurement items of this study.

Finally, increasing the productivity and efficiency of services with the help of information and communication technology presumably leads to new requirements for the efficiency of e-service communication. Thus, there is a clear research gap within e-service advertising effectiveness research (Heinonen and Strandvik 2007; Mortimer 2008; Tripp 1997). The attention to the effect of marketing communication efforts on new service or e-service adoption remains limited (Prins and Verhoef 2007) and no studies of the behavioral effect of online marketing communication on consumer adoption of e-services could be found.
2.4.3. E-mail marketing

Companies use various types of e-mails, such as newsletters, invitations, welcome mails, campaign mails, promotions with rewards and coupons, virals, and service mails in order to promote new products and services, track delivery status, build customer commitment and to cross-sell and up-sell. According to marketing research, the usage of e-mails will further increase. The 2012 E-mail Marketing Benchmark Report notes that more than half of the companies expect their e-mail marketing budgets to increase with 10-30% (MarketingSherpa 2012).

E-mail usage offers several benefits for the company. E-mails offer a very short “one click route” to the website, helping the marketer to gain additional exposure and activity (DuFrene, Engelland, Lehman and Pearson 2005; Godin 1999; Jiang et al. 2000). E-mails also produce faster (Chaffey 2006) and higher (Durham 2003) response rates than mass mailings. The main reason behind the extensive use of e-mail marketing lies in its efficiency. According to reports, the typical click-through rate of in-house e-mails is 5-6%, which rates e-mails as the most efficient single online channel (eCommerce 2012). E-mails are also cost efficient and offer a low-cost tool to keep in touch with both potential and actual customers.

According to eCommerce (2012), opt-in e-mails are ranked as number two after Internet search engines in terms of average cost per customer acquisition. Another reason behind the increased expectations towards the growth of e-mails is the growth in smartphone penetration and faster networks which makes reading of mobile e-mails more user friendly (Apsis 2013). Further, e-mail usage will grow due to the growth of mobile websites, which consequently makes mobile e-mail landing pages better suited for marketing purposes. As the penetration of smartphones and faster networks increases, the e-mail sent to customers will also be seen as more personal than e-mail sent to a computer/laptop. The mobile phone is seen as "the most ubiquitous personal item in the world" (Jayawardhena, Kuckertz, Karjaluoto and Kautonen 2009, p.474), which will create even higher expectations for the relevance of the e-mails used.

Consumer attitudes towards e-mails, is paradoxical. According to Elkelä (2012) 24% of Finnish consumers prefer e-mails whereas 33% find them displeasing. Those consumers who find e-mails displeasing have negative attitudes towards spam. Consumers who prefer e-mails find them interactive and entertaining. E-mails also offer consumers control of what they want to read. Further, consumers find e-mails attractive due to their information content and the possibility to receive personalized information.

E-mail marketing can be deployed in several ways Chaffey (2006). Firstly, e-mails can be used as customer acquisition tools by sending e-mails to members of bought lists. Alternatively, it is possible to advertise in an established newsletter in order to drive traffic to the website. E-mails are also a great medium for time-critical information such as alerts and offers. Secondly, e-mails can be used as conversion tools by capturing leads in forms of e-mail addresses. E-mails can then be sent to these leads in order to convert the leads to sales. Automated multi-stage e-mails are also used in order to convert leads to sales. The third and most classical deployment of e-mails is the newsletter or promotional e-mails sent to in-house lists. The aim of this kind of e-mails is to renew and achieve more sales, keep the brand in the mind of the customer and let customers know about new products and services such as self-service options. E-mails can also be used when sending invitations for customers or they can be used as brand building tools in order to increase the frequency and depth of communications with the
customer. Typical examples of these kind of e-mails are news about celebrity endorses and the latest competitions and games. Many marketers also use e-mails as a research tool in order to learn more about both prospects and customers. Furthermore, e-mails can be used as viral tools in order to attract new customers by encouraging referrals from existing customers. Finally, e-mails can be used as service delivery tools instead of phone, chat or face-to-face services (Chaffey 2010). The automation of e-mails has also made it possible to use e-mails in business operation areas such as ordering, shipment, payment and delivery.

E-mails offer an ideal environment for testing. Typical testing variables of e-mails include customer segments, offers, subject lines, content (copy, style, tone, structure), links, call-to-actions, day, time, from and landing page. E-mails are also tested in order to investigate the best form of personalization (Chaffey 2006). Testing is usually done beforehand as pretesting with smaller samples with one group receiving test e-mail using one group as the control group. The success of different treatments can also be used as live split-testing or A/B testing in which there is again one control group and one or more test cells (Chaffey 2006). A valuable characteristic of e-mail marketing is that it enables detailed analysis of the results. Measurements such as number sent, bounce rate (don’t receive), open rate (number opened), number of click-throughs, number of logins, and number of completed sales, are the most typical measurement items for e-mails (Chaffey 2006).

The effect of e-mails has been researched from many different angles. Research in e-mail and direct marketing research has showed positive impact of e-mails and/or direct mailings on attitudes (DuFrene et al. 2005), brand images (DuFrene et al. 2005), brand loyalty (Merisavo and Raulas 2004), relationships (Broderick 2001; Yoon, Choi and Sohn 2012), store visits (Martin, Van Durme, Raulas and Merisavo 2003; Merisavo and Raulas 2004), W-O-M communication (Merisavo and Raulas 2004), and intention to purchase (DuFrene et al. 2005). Research in direct marketing communication has also established relationships, such as positive effects of direct marketing communication on cross buying (Verhoef, Franses and Hoekstra 2001), customer share attitude (Verhoef 2003) and purchase frequency (Kumar, Ramani and Bohling 2004).

Although e-mails have been deemed an effective tool in communicating with customers, there is still a lack of research on e-mail content and the effect of the content. Although, there has been a growing recognition that appropriate e-mail content plays a key role in advertising effectiveness (e.g. Carmichael 2000; Teinze et al. 2002; Waring and Martinez 2002; Du Frene et al. 2005). Yet while relevant content is recognized, recommendations for what specific content marketers should use is scarce and vague. It is suggested that e-mail content must be targeted (Waring and Martinez 2002), relevant and clear (Carmichael 2000) or irresistible (Yeager 2001). In the study by Martin et al. (2003), four types of e-mail were favored by more than half of the respondents. Namely information about special offerings, new products, competitions and additional info about product related issues. Pickton and Teinze et al. (2002) found that message relevance (Krishnamurthy 2001; Teinze et al. 2002); and personalization (Message personalization 2002; Taylor and Neuborn 2000) led to better results.

E-mails offer service related benefits for the consumer. Godin (1999) found that e-mails help consumers to organize their information search by drawing them back to particular sections of the website to receive more information. Consumers also benefit from e-mails because they have control over what they receive and when they read it (Godin 1999). E-mails give the customer the opportunity to choose the information they need and when they need it. Although both academic and managerial literature
shows that e-mails have many benefits, which make it an ideal tool for e-service communication, no studies of e-service related e-mail content could be found.

2.4.4. Conclusions regarding e-service communication

E-service benefits are important for motivating the usage of e-services. In order to build positive consumer perceptions of e-service benefits and thereby drive e-service adoption, the benefits need to be communicated to consumers. To date, studies have shown that perceived benefits affect consumer satisfaction and the intentions to use a service (Meuter 2000; 2005), but no research has been carried out to investigate whether communicating e-service benefits has a positive effect on e-service adoption. Although both academic and managerial literature shows that e-mails are useful means to reach customers, thus making it a natural tool for e-service communication, no research on its use as an e-services communication tool could be found. Further, the behavioral effect of click-throughs has not been used in connections with the adoption of e-services, or e-service research at large. Neither could any studies on the effect of e-service related e-mail content on consumer responses be found.

2.5. Summary of conceptual framework

First, research on the underlying factors that influence consumer trial or adoption of e-services were reviewed in order to gain insight about the theories, which have been used to explain e-service adoption. The separate research streams are relevant but also competing theoretical foundations could have been used in order to build the conceptual model to be used in the empirical study. The separate research streams all touch upon e-service benefits. Altogether seven consumer benefits of e-service were discussed and presented: 1) Time savings, 2) Access to accurate information, 3) Convenience, 4) Monetary benefits, 5) Lack of social contact, 6) Control and 7) Easy to use. Out of the seven benefits presented, three benefits 1) Time saving, 2) Access to accurate information and 3) Easy to use, stand out as the most researched and referred to benefits. Also, studies suggest that benefits should be communicated to the consumers, because without benefits, consumers are unlikely to adopt a service. Hence, it is of interest to study if communicating benefits really do have an effect or not on e-service adoption, by using real behavioral data.

In addition, it can be concluded that there is a need for more research on the specific behavioral effects of online communication to customers. The review showed that behavioral online measures have not been used within the e-service research even if online measures should be a natural measurement item for e-services. Although Internet delivered e-services are increasingly being made available for consumers, surprisingly little is known about how to communicate e-services in order to improve e-service adoption rates.

Thus all in all, this study claims that one way to improve e-service adoption rates is to communicate those particular e-service benefits, which the e-service offers to the consumer. In the literature review I have shown that 1) perceived benefits of the e-service are important for consumer adoption, 2) there is still a lack of research on both if and how consumer adoption of e-services can be enhanced with the help of communication, and 3) although e-mails have been deemed an effective tool in communicating with consumers, there is still a lack of research on the actual effects of company e-mails on consumer behavior. The empirical study of this thesis will
contribute to research on e-service adoption by studying if the communication of e-service benefits by e-mail will have positive effect on consumer adoption of the e-service.

The following chapter presents the methodology of the empirical part. The chapter motivates the choice of the empirical setting. It also provides a brief presentation of the three empirical studies: the Pilot study, the Main study, and the Post study.
3 METHOD

The main purpose of this study is to investigate the behavioral effect of e-service benefit communication through e-mail.

This is addressed by answering the following sub-questions in the empirical study:

1) Do e-service benefits differ in their effect on consumer e-service adoption?
2) Does the number of communicated benefits have an impact on e-service adoption?
3) Does the communication of benefits affect the participants’ perceptions of e-service benefits?

The first two sub-questions are answered in the main experimental study, whereas the third sub-question is answered in a post-survey.

The literature review in the previous chapter pointed out altogether seven consumer benefits of e-service which were chosen to the Pilot study: 1) Time savings, 2) Access to accurate information, 3) Convenience, 4) Monetary benefits, 5) Lack of social contact, 6) Control and 7) Easy to use.

Since it was not feasible to include all the presented seven benefits in the Main study, a Pilot study was conducted to explore potentially important benefits in the context of telecom services, which formed the empirical context of this thesis. The Pilot study supported the use of “time savings”, “easy to use” and “access to accurate information” as essential benefits. These also emerged in the literature review as central benefits.

The Main study investigates the effect of the e-mail communication of the three e-service benefits on e-service adoption, measured as web traffic, including e-mail open rates, click-through rates and login rates. A post-study survey was conducted to investigate if the e-mail communication affected the customers’ e-service benefit perceptions.

This chapter motivates the choice of the empirical setting and provides a brief presentation of the three empirical studies: the Pilot study, the Main study, and the Post study.

3.1 Choice of empirical setting

The empirical setting of this research could have been almost any consumer market with an e-service environment, such as banking, insurances, travel agencies, airlines, healthcare, telecom, it- or government services. New telecom B2C customers of a telecom operator were chosen for the following reasons.

First, Finland’s telecom market is among the most progressive in Europe. The Finnish market has considerable emphasis by both the regulator and operators on the need to testbed technologies, particularly in the mobile sector (Budde 2014). The country enjoys one of the highest broadband and mobile penetration rates in Europe. The telecom industry is an important area of research as it has an essential role in today’s economy.
Second, telecom products and services are complex and develop fast, which means that customers need continuous 24/7 online services in order to be able to use and upgrade services. Telecom customers need fast access to their customer data on subscription services and contracts, handsets and invoicing data. From the provider’s point of view, the price competition within the telecom sector is intensive and the investments in technology are heavy. Hence, the effective use of e-services is vital in order to lower the customer service costs (McKinsey 2013).

Third, the future growth in the telecom sector is in new content services such as pay TV, music and books (ATKearney 2013). The need for a self-serving online customer is important for the operator to actively cross-sell the new services.

Fourth, from an empirical point of view, telecom operators have comprehensive customer databases with customer e-mail addresses, which facilitate random access and sampling.

Fifth, telecom operators have comprehensive measurement tools and integrated data from different communication channels, which make it possible to track and combine the data needed for experiments and surveys.

Sixth, customer service is offered also in the shops and on the telephone. The fact that e-service is an optional service channel, means that the customer is not dependent on the e-service.

A European telecom company operating in the Finnish market, which prefers to remain anonymous, was chosen for the empirical study. The company was willing to co-operate with the researcher and gave full access to its customers as well as technical help with the measurement tools used in the study. The empirical study focuses on the company’s self-service portal in the Finnish consumer market. The telecom company is hereafter called the ‘Company’.

The Company introduced a B2C self-service portal in 2008. The portal offers customers a wide range of supplementary e-services related to the mobile subscription such as invoice history, product and service status, upgrades, up-sales, cross-sales, other offers, technical help and access to the contact center. Both web and mobile e-service options are offered. The e-service option is introduced and offered for free to every new customer. For example, finding the PIN code, or making a change in the service package, are free of charge when the consumer uses the e-service, but charged for if the service is performed either by the customer service or the retail shop personnel.

The e-service is offered in different ways, depending on from which channel the customer buys services or products. When the consumer buys online, a registration for the e-service is an automatic part of the web shop process but the consumer is not directed immediately to the e-service, and therefore may not use it. The subscription welcome package mailed by post to all new customers also introduces and informs about the service, but adopting the e-service is voluntary. Further, the Company sends SMS-messages to activate consumer use of the e-service portal.
3.2. Research design

This chapter presents the research design of the empirical study, including the Pilot, Main and Post study. Table 8 provides an overview of the sample and context of the three studies. Each study will be presented in brief.

Table 8  Research design

<table>
<thead>
<tr>
<th>Aim</th>
<th>Pilot study</th>
<th>Main study</th>
<th>Post study</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>To explore e-service benefits</td>
<td>To investigate the behavioral effect of communicating three main e-service benefits through e-mail.</td>
<td>To investigate both the perceptual and the behavioral effect of communicating e-service benefits through e-mail</td>
</tr>
<tr>
<td>Method</td>
<td>Survey</td>
<td>Experiment</td>
<td>Survey</td>
</tr>
<tr>
<td>Data and context</td>
<td>Telecom e-service usage and benefits</td>
<td>Behavioral data from e-mails; e-mail open rate and click-through rate. Login rate to the e-service.</td>
<td>Differences in perceptions of e-service benefits and e-service behavior between treatments/control groups.</td>
</tr>
<tr>
<td>Sample size Respondents</td>
<td>1780 students</td>
<td>20195 telecom customers / 18 000 / 16777 telecom customers</td>
<td>16697 telecom customers / 1659 telecom customers</td>
</tr>
</tbody>
</table>

3.2.1. Pilot study

First, a Pilot study was performed as an online survey among a sample of 1780 young consumers to explore the perceived benefits of telecom e-services. The objective of the Pilot study was to evaluate the relevance of the selected e-service benefits and to guide the choice of the e-service benefits to be used in the Main study. More specific sample characteristics are described in chapter 4.

After the literature review, a set of seven e-service benefits was selected for measurement in the Pilot study: 1) Time saving, 2) Access to accurate information, 3) Convenience, 4) Monetary benefits, 5) Social contact, 6) Control and 7) Easy to use. These benefits potentially explain e-service adoption to new customers and form the content of e-service communication aimed at increasing e-service adoption.

The main method of analysis used in the Pilot study was factor analysis. Factor analysis is a statistical approach that can be used to analyze interrelationships among a large number of variables and to explain these variables in terms of their common underlying dimensions (factors). The objective is to find a way of condensing the information contained in a number of original variables into a smaller set of factors with a minimal loss of information. Factor analysis is a technique particularly suitable for analyzing the patterns of multidimensional complex relationships. Factor analysis can be used in order to examine the underlying patterns of relationships for a large number of variables. Factor analysis can also be used in order to determine whether the information can be condensed or summarized in a smaller set of factors or components (Hair, Black, Babin and Anderson 2010).
The term factor analysis includes a variety of different, although related techniques (Pallant 2010). One of the main distinctions is what is termed principal component analysis (PCA) and factor analysis (FA). In PCA, which was the technique chosen for this study, the original variables are transformed into a smaller set of linear combinations, with all of the variance in the variables used. In factor analysis factors are estimated whereby only the shared variance is analyzed (Pallant 2010).

Factor analytic techniques can achieve their purposes from either an exploratory or confirmatory perspective (Hair et al. 2010). For most applications the exploratory or non-confirmatory use of factor analysis is appropriate. The exploratory application is based on exploring the data and providing the researcher with information about how many factors are needed to best represent the data. Confirmatory factor analysis is a way of testing how well the measured variables, represents a smaller number of theoretical constructs.

Because the aim of the Pilot study was to explore and help in the selection of e-service benefits, principal component analysis was chosen. The study was used to guide in the choice of e-service benefits for the experiment in the Main study. The study did not set out to explore new benefits but relied on the main benefits from the literature review. The Pilot study will be described in full in chapter 4.

3.2.2. Main study

The Main study was designed as an experimental study. The experiment is the fundamental research tool used to identify causal relationships in the experiment and to draw conclusions about cause-and-effect relationships. Experiments allow key variables to be directly manipulated. An experiment requires that individuals are randomly allocated to different groups and that they get different treatments after which the reactions of the different groups are compared (Söderlund 2010).

An experiment consists of one or more independent variables, which are consciously controlled (manipulated), and whose effects on the dependent variables(s) are measured. The objective is twofold: to measure the effects of the independent variables on a dependent variable and to simultaneously control for other variables that might confuse one’s ability to make valid causal inferences (Feinberg, Kinnear and Taylor 2008).

Treatments are the manipulated alternatives, or the independent variables, whose effects are measured. Examples in marketing are plentiful, including the effect on consumer responses of different product design, package design, advertising concepts, price levels etc. (Feinberg, Kinnear and Taylor 2008). It is important to note that causal explanations require the treatments to be given before the effects. The strength of experiments is in their possibility to produce such explanations (Söderlund 2010). For example, survey data may be used to study the effect of independent variables on dependent variables with, for example, regression analysis, but there is no evidence that the effect goes in the hypothesized direction, other than assumptions based on theory. Hence, an experiment is the preferred method for causal explanation.

An experiment is focused on finding out if previously defined specific effects, such as e-service trial, happened as a result of a treatment. It is also typical for an experiment, that the researcher is guided by a theory, which gives some guidelines about the expected effects, which are especially interesting to study (Söderlund 2010). To
determine that it was the treatment that caused the observed effect, an experiment must include a control group.

The experiment used in this study was a true field experiment, which means that the experiment was conducted in the real world. Field experiments use random assignment but they do not attempt to control all extraneous variables to the ones being manipulated (Lynn and Lynn 2003).

Alternatives to a field experiment were considered. One alternative method to study the behavioral response to e-service benefit treatments would have been to perform an experiment on scenarios, in which the treatment and accompanying questions would have been distributed by e-mail to customers, or collected as a pen and pencil study from a random selection of consumers. This ascertains that one gets a certain number of responses to each scenario. However, since the responses are behavioral intentions, one cannot know how well the responses correspond with actual behavior. Hence, the strength of the focal study is that it measured actual trial.

The study could have been a survey, where customers are asked to rate the importance of each e-service benefit, to evaluate the e-service benefits, and preferences regarding communication channels. The study would have been similar to other perceived benefits studies that link perceived benefits to behavioral intentions. The study would not have yielded actual behavioral data on customers, or a causal effect of communicating the benefits.

Instead, the experiment was conducted in an authentic environment in which a telecom company sent e-mails to their actual B2C customers. Measuring the actual impact of treatments in this environment is essential because of the speed of the digital environment. Studies show that consumer decisions to act in online channels are fast compared to offline channels. According to management research (Apsis 2013), the average time spent for reading e-mail is less than 11 seconds. Thus performing the study in an authentic environment was a requirement for both the validity and the reliability of this study.

The Main study was designed to test the behavioral effect of communicating e-service benefits through e-mail. Three benefits were included: 1) Time saving, 2) Access to accurate information, and 3) Easy to use. The benefits were presented alone, in pairs, or all three together.

Seven treatments with the different combinations of e-service benefits were used. For explorative reasons an 8th treatment group was included, which received the same treatment twice (including all three benefits). In addition, a control group was added which did not receive any communication (9th, non-treatment).

21 095 new customers represented the initial sample of new customers from the previous 4 weeks who qualified for the sample characteristics. The total sample size of the experiment was set to 2000 for each of the nine treatment groups, including the control group, totaling 18 000 customers which were randomly chosen from the initial group of 21 095 new customers. Since e-mail addresses change fast and all are initially not correct in the customer database, the final number of respondents became 16777 after the bounces had been removed from the total sample of 18 000 customers.

In terms of measurement, treatments need only form a nominal scale (Feinberg, Kinnear and Taylor 2008). Most measurements in the experiment of this study are on a nominal scale indicating that a benefit was present in the e-mail, and that customers
either clicked or/and logged in, or there was no action. An ordinal scale was used to measure the total amount of clicks or logins. The fact that most of the data from the experiments are measured on a nominal scale (clicked/did not click) puts a limitation on the use of analysis techniques. The analysis of the data is mainly performed with Pearson Chi-square and Cramer’s Effect sizes.

3.2.3. Post study

To gain further insight into the differences in the effect of the e-mail communication between the control group and the treatments, a Post study in the form of an online survey was sent to the same sample that took part in the experiment. The Post study had three purposes. The first purpose was to find out whether the participants remembered having received e-mails, its relationship with e-service logins, and the intended future use of the e-service. As the e-mail tracking in the Main study experiment covered only e-service logins via the e-mails, the second purpose of the Post experiment survey was to investigate all e-service logins, including those done outside of the links in the e-mails. The third purpose of the Post study was to investigate if the e-mail communication had an effect on the participants’ perceptions of e-service benefits.

The sample in the Post study was the same as in the Main study experiment but without the bounced e-mails and opted-out customers. Consequently, the sample consisted of 16,697 new Finnish customers of the Company. More specific sample characteristics are described in chapters 5 and 6.

The measured constructs of e-service benefits were mainly identical to the ones used in the Pilot study. However, measures were added to better cover the measurement scales used in past research.

The main analysis of the data from the Post study was performed with a pairwise test of independence between distributions. The e-service benefit data were analyzed with principal component analysis to find further support for the benefit constructs that were used in the Main study. The Post study also investigated if the communicated benefits had an effect on the customers’ perceptions of the benefits. The following chapters will present the research design and the results of each of the three studies.
4  PILOT STUDY

This chapter presents the study design and the findings from the Pilot study. The chapter begins with the survey design including the data collection, the sample characteristics and the measures. The second part presents the findings of the Pilot study. The chapter ends with the conclusions from the Pilot study as well as previous studies and their implications for the Main experimental study.

4.1. Survey design

Before conducting the Main study, a Pilot study was performed. The objective of the Pilot study was to evaluate the relevance of the selected e-service benefits and to guide the choice of benefits to be used in the Main study.

4.1.1. Data collection and sample characteristics

The Pilot study was performed as an online survey. An e-mail invitation to the online survey was sent to business school students in the Helsinki area during week 16 in 2012. A screening question assured that only those who had a private post-paid mobile phone subscription were included as respondents. E-services for pre-paid and post-paid subscriptions vary a lot depending on the telecom operator, which is why one type of customers (post-paid) was chosen to the study. The sample comprised Finnish-speaking business school students for three reasons. First, students have been found to be homogenous, which was important for the reliability of this study. Second, students have experience of answering online surveys. Third, students provided an accessible and inexpensive convenience sample. A lucky draw with ten movie ticket gift cards each worth 8€ were used as an incentive in the e-mail. A second reminder e-mail identical to the first one was sent to all respondents a week after the initial survey. Altogether 1780 students received the e-mail with the online survey link and 287 (16.1 %) answered the survey. The data sample size (287) was considered as large enough for factor analysis, according to the general rule of thumb of a minimum of 300 by Tabachnick and Fidell (2007). Another rule of thumb is that the number of observations should be ten times the number of items to be factor analyzed. This was requirement was also fulfilled. The third part of the questionnaire included a battery of 16 items measuring seven e-service benefits. The constructs are measured as perceived benefits in five-point Likert scales ranging from “strongly disagree” (1), to “strongly agree” (5) with a "do not know" option (6). If cases had missing data due to reasons such as the "do not know” option, the missing data (pairwise) correlation matrix was analyzed.

The survey was open for two weeks and the participants were required to provide their name, e-mail addresses and their mobile phone numbers if they wanted to participate in the lucky draw. The online survey tool used was Webropol (Version 2.0.) and the analysis tool SPSS (Mac Version 19).
4.1.2. Questionnaire design and measures

The questionnaire (Appendix 1.) was divided into three parts: 1) Background information including filter and demographic questions, 2) Telecom e-service use and e-service communication channels and 3) E-service benefit items.

The first part of the questionnaire gathered background information such as age, gender and customer relationship length. Two filter questions about mobile subscription type were placed in the first part of the questionnaire, since only those who had a private post-paid mobile phone subscription were accepted as respondents.

The second part of the questionnaire gathered information on telecom and e-service usage habits and preferred e-service functions. Respondents were asked if they had logged into the e-service, how often they used the e-service, their reasons for non-use and the e-service functions they use. They were also asked if they remember having received information about the e-service.

The third part of the questionnaire included a battery of 16 items measuring seven e-service benefits. The objective of the Pilot Study was to generate specific items for the proposed dimensions of several e-service benefits and to select the items that have face validity in terms of describing e-service benefits. To generate the items, an extensive literature search and review (see Chapter 2.2) focused on concepts related to e-service benefits. The construct items (e-service benefits) used in this study were adopted from prior computer, information technology, website and e-service adoption research.

The item measures are listed in Table 9 with respective sources. The first column lists the e-service benefit constructs. The second column lists the scale items used for measuring the e-service benefits. The literature indicates that these are important relevant items on the corresponding consumer benefits of e-service. The third column provides example sources of the items. The scale items were adapted from several previous studies.

Time saving

After the literature review, the following items were selected for measuring perceived consumer benefits of time savings; 1) I save time, 2) I can order the services fast, 3) I do not have to stand in line, 4) I can use the services any time and 5) I can order the services immediately. The scale items of the e-service benefit "Time saving" were adapted from several previous studies (Davis 1989; Davis et al. 1989; Dabholkar 1996; Heinonen 2009; Langeard et al. 1981; Ledingham 1984; To et al. 2007; Venkatesh and Davis 2000).

Access to accurate information

The second e-service benefit was named "Access to accurate information”. After the literature review, the following items were selected for measuring perceive consumer benefits of information content and accessibility; 1) I can find my customer data, 2) I can find up-to-date information 3) I can find accurate information and 4) I can find good tips. The scale items for the e-service benefit "Access to accurate information" were adapted from several previous studies from Davis (1989), Davis et al. (1989), Liu and Arnett (2000), Venkatesh and Davis (2000), Yang et al. (2005), Swaid and Wigand (2009).
Convenience

Thirdly, consumers may find technology-based options attractive for other reasons such as convenience (To et al. 2007). The third e-service benefit was named "Convenience". One item "I can order easily what I need", was selected for measuring the perceived consumer benefit of convenience. The scale item was adapted from To, Liao and Lin 2007.

Table 9  E-service benefits

<table>
<thead>
<tr>
<th>Benefit construct</th>
<th>Scale item</th>
<th>Scale source</th>
</tr>
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<tbody>
<tr>
<td>Value subdimension When-speediness</td>
<td>I can order fast</td>
<td>Heinonen 2009.</td>
</tr>
<tr>
<td>Value subdimension When-temporal latitude, Convenience</td>
<td>I can use the services 24/7</td>
<td>Heinonen 2009, To, Liao and Lin 2007.</td>
</tr>
<tr>
<td>Speed of service delivery</td>
<td>I can order immediately</td>
<td>Dabholkar 1996.</td>
</tr>
<tr>
<td>Usefulness-quality of information</td>
<td>I can find up-to-date information</td>
<td>Yang et al. 2005.</td>
</tr>
<tr>
<td>Usefulness-quality of information</td>
<td>I can find good tips</td>
<td>Yang et. al 2005.</td>
</tr>
<tr>
<td>Convenience</td>
<td>I can order easily what I need</td>
<td>To, Liao and Lin 2007.</td>
</tr>
<tr>
<td>Lack of sociality</td>
<td>I avoid personal contact with the company</td>
<td>To, Liao and Lin 2007.</td>
</tr>
<tr>
<td>Control over process</td>
<td>It is important for me that I can control my services</td>
<td>Bowen 1986, Bateson and Hui 1987, Guiry 1992, Langer and Saegert 1977, Langeard et al. 1981.</td>
</tr>
<tr>
<td>Ease of use</td>
<td>It is easy to learn</td>
<td>Lori and Riemenschneider 2008.</td>
</tr>
<tr>
<td>Value subdimension How-Process easiness/functionality</td>
<td>The user guides are clear</td>
<td>Heinonen 2009.</td>
</tr>
</tbody>
</table>

Monetary savings

In this study, for mobile subscriptions, monetary savings is operationalized as the benefit of lower service fees due to using the e-service. “I save in service fees” was
selected for measuring perceived consumer benefits of the mobile subscription e-service (Davis 1989; Davis et al. 1989; Venkatesh and Davis 2000).

Lack of social contact

The benefit "I avoid personal contact with the company" was selected for measuring the perceived consumer benefits of lack of social contact. Consumers also use e-services because they allow them to purposely avoid contact with the provider’s personnel (To et al. 2007). The scale item for avoiding social contact was adopted from To et al. (2007).

Control

Consumers who prefer self-service also perceive control as a critical factor in the service process (Ding et al. 2007). "It is important for me that I can control my services” was selected for measuring perceived consumer benefits of the mobile subscription e-service. The scale item for control was adopted from Langer and Saegert (1977), Langeard et al. (1981), Bowen (1986), Bateson and Hui (1987) and Guiry (1992).

Easy to use

Previous studies in consumer ability and self-efficacy show that customers’ knowledge and ability to use the e-services are critical factors for the success of e-services (Bigne et al. 2010; Gustavsson et al. 1999; Liljander et al. 2006; Walker et al. 2002). Customers’ ability and self-efficacy are also therefore also likely to have a persuasive effect on his/her response to e-service. The three scales used in measuring the e-service benefit easy-to-use were 1) It is easy to use, 2) It is easy to learn and 3) The user guides are clear. The scale item "easy to use" was adapted from Davis (1989), Davis et al. (1989), Venkatesh and Davis (2000), Lori and Riemenschneider (2008). The scale item "easy to learn" was adopted from Lori and Riemenschneider (2008) and the scale item "clear user guides" was adopted from Heinonen (2009). The combined literature from the relevant disciplines indicates, that these are important “easy to use” related consumer benefits of e-services.

Most of the constructs above consist of multiple scale items but the study also used a reduced set of items rather than several items per benefit, as recommended in the literature. However, there are sources that suggest that single-measures are good enough as the incremental information from each additional item is very small (Drolet and Morrison 2001; Rossiter 2002; Bergkvist and Rossiter 2007). Although, it would have been better to include more items on each variable in order to capture more variation in the constructs, a reduced set was chosen for the purpose of the pilot study.

The constructs are measured as perceived benefits in five-point Likert scales ranging from “strongly disagree” (1), to “strongly agree” (5) with a "do not know" option (6).

4.2. Findings from the Pilot study

The objective of the Pilot study was to evaluate the relevance of the selected e-service benefits and to guide the choice of benefits to be used in the Main study.

Firstly, the descriptive statistics are presented. Secondly, the underlying dimensions of the e-service benefits, which form the basis for the Main study, are presented. Thirdly, implications and conclusions are drawn from the Pilot study.
4.2.1. Descriptive statistics

To gain background knowledge, questions were asked regarding the telecom e-service usage habits of the respondents. The most important findings are presented here thus all descriptive statistics of the Pilot study can be found in Appendix 2.

68 percent of the respondents had logged into their mobile subscription e-service, while 32 percent had not logged into it. The two main reasons for not logging into the e-service were “No need for the e-service” (36.2%) and “No benefit from the e-service” (12.3%). Further, 9.8% had used the e-service only once. Two main reasons for not using it more than once were “No need for the e-service” (45.5%) and “No benefit from the e-service” (15.9%).

The results demonstrate that one reason for not actively using the e-service is a lack of perceived benefits. The sum of those who had not logged into their mobile phone e-service at all (32.1%), and those who had used the e-service only once (9.8%), shows that 41.9% of the total respondents were, at least, inactive users of the e-service. The two main reasons for this inactivity were: 1) no perceived need for the e-service, or 2) no benefits of using the e-service. However, having no need for the e-service can be seen as a lack of perceived benefit. Since the rest of the respondents did use the e-service, it could be assumed that they perceived some benefits from using it. This indicates that communicating benefits is worth studying.

Information about the respondents’ usage and perceived relevance of different e-service functions could provide indirect information of e-service benefits. The four most typically used e-service functions were “checking the invoices” (25.2%), “checking the customer data” (19.9%), “make changes in services” (15.7%), and “check my balance” (13.2%). This indicates that the benefit of having access to accurate and timely information could be an important e-service benefit.

The respondents were also asked if they remember having received communication about the e-service. 36.9 % remembered having received communication about the e-service, while 63.1% did not remember. Those who did not remember might still have received communication and forgotten it.

A cross-tabulation of respondents who had or had not logged into the e-service and either remembered or did not remember having received information about the e-service, showed that there was an association between remembering and logging into the service. A Chi-square test for independence showed a significant association of Chi-square (1, n= 287) = 0.294, p= 0.00. The effect size Cramers’V = 0.294 shows a medium effect. Thus catching customers’ attention with relevant communication may have a positive effect on e-service adoption.

4.2.2. E-service benefit measures

A battery of 16 items covered seven e-service benefit concepts. Each of these concepts included potential sub-dimensions of e-service benefits. Appendix 3 shows each item with mean, standard deviation, correlation, skewness and kurtosis. The items were factor analyzed to explore underlying latent constructs.

Prior to performing principal component analysis (PCA), the suitability of the data for factor analysis was assessed. Inspection of the correlation matrix (Appendix 4.)
revealed many coefficients of above $r = 0.3$. The Kaiser-Meyer-Olkin (KMO) value of 0.860 exceeded the recommended value of 0.6 (Kaiser and Rise, 1974) and Bartlett’s Test of Sphericity (Bartlett 1954) reached statistical significance ($p = 0.00$), supporting that the data were suitable for factor analysis. All scales were subjected to principal component analysis (PCA) using SPSS (Mac Version 19) in order to test scale validities. Composite reliability was used to assess the internal consistency of items hypothesized to measure a single construct (Fornell and Larcker 1981). The factor analyses and the items measuring the constructs can be considered internally consistent, as in all instances all composite reliability values exceed the 0.70 guideline suggested by Nunnally and Bernstein (1994).

The 16 benefit items were subjected to principal components analysis (PCA) (Appendix 5.). The rotated component matrix for the first principal component analysis with Varimix rotation revealed the presence of four components with eigenvalue exceeding 1 and explaining 42.84%, 10.14%, 8.01% and 6.33% of the variance respectively. The four components explained together 67.71% of the variance. The first two factor components formed two clean constructs, whereas the third and fourth components were not clean and the items loaded moderately on both. An inspection of the screeplot (Appendix 6.) revealed a break after the third component, and using Catell’s (1966) scree test, three components were further investigated.

The rotated component matrix for the second principal component analysis with a Varimix rotation with three components in Table 10 show that all items load higher than 0.50 of their respective construct, which provides support for a high degree of individual item reliability (Hulland 1999).
Table 10  Rotated component matrix for three components

<table>
<thead>
<tr>
<th>Component loadings</th>
<th>Save time</th>
<th>Access to accurate information</th>
<th>Easy to use</th>
</tr>
</thead>
<tbody>
<tr>
<td>The user guides are clear</td>
<td></td>
<td>0.818</td>
<td></td>
</tr>
<tr>
<td>It is easy to learn</td>
<td></td>
<td></td>
<td>0.859</td>
</tr>
<tr>
<td>It is easy to use</td>
<td>0.314</td>
<td></td>
<td>0.814</td>
</tr>
<tr>
<td>It is important for me that I can control my services</td>
<td>0.669</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I save time</td>
<td>0.809</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I do not have to stand in line</td>
<td>0.769</td>
<td>0.342</td>
<td></td>
</tr>
<tr>
<td>I can use services 24/7</td>
<td>0.728</td>
<td></td>
<td>0.358</td>
</tr>
<tr>
<td>I can order immediately</td>
<td>0.639</td>
<td>0.327</td>
<td></td>
</tr>
<tr>
<td>I can order fast</td>
<td>0.706</td>
<td></td>
<td>0.319</td>
</tr>
<tr>
<td>I save in service fees</td>
<td>-0.453</td>
<td>0.438</td>
<td></td>
</tr>
<tr>
<td>I can order easily what I need</td>
<td>-0.557</td>
<td>-0.459</td>
<td></td>
</tr>
<tr>
<td>I can find my customer data</td>
<td>-0.418</td>
<td></td>
<td>0.411</td>
</tr>
<tr>
<td>I can find accurate information</td>
<td></td>
<td></td>
<td>0.816</td>
</tr>
<tr>
<td>I can find up-to-date information</td>
<td></td>
<td>0.686</td>
<td>0.363</td>
</tr>
<tr>
<td>I can find good tips</td>
<td></td>
<td></td>
<td>0.801</td>
</tr>
<tr>
<td>I can avoid personal contact</td>
<td></td>
<td></td>
<td>0.480</td>
</tr>
</tbody>
</table>

Variance explained (61.38%) 42.84% 10.14% 8.41%

Extraction Method: Principal Component Analysis
Rotation Method: Varimax with Kaiser Normalization.
Rotation converged in 6 iterations

An item was judged to load on a factor if the loading on that factor was above 0.50. Coefficients under 0.3 were suppressed for greater clarity and to maintain only items with significant loadings, according to the recommendation of Pallant (2001). In line with Nunnally’s (1978) criterion of 0.7, the Cronbach’s alphas were good for all three factors: 1) Save time (0.828) with five items, 2) Easy to use (0.883) with three items, and Access to accurate information (0.784) with four items. All items were composed and averaged to provide single composite scores. The rotated component matrix for the second principal component analysis with Varimax rotation showed a clear separation between the three components with eigenvalue exceeding 1, which together explain 61.38 % of the variance (Table 10). Component 1 (Save time) contributed 42.84%, Component 2 (Easy to use) 10.14% and Component 3 (Access to accurate information) 8.41 % of the variance. Thus the final solution was a three-factor solution with all 16 items.

To conclude, the factor analysis revealed the three following components: 1) Time saving benefits, 2) User ability related benefits and 3) Information content and access related benefits, which were used in designing the Main study.
4.2.3. **Conclusions from the Pilot study**

The objective of the Pilot study was to evaluate the relevance of the selected e-service benefits and to guide the choice of benefits to be used in the Main study.

The Pilot study gained insight of telecom e-service behavior among customers with a mobile phone subscription. The study showed that the four most typically used e-service functions of telecom services were checking invoices, checking customer data, make changes in services, and checking the balance. This supported the relevance of the benefit of having access to accurate information.

The Pilot study resulted in three benefits being chosen: 1) "Time saving" benefits, 2) "Easy to use" benefits and 3) "Access to accurate information" related benefits. These benefits were chosen both based on the literature review and the results from the Pilot study.

Further, a high share (41.9%) of the respondents comprised inactive users of the e-service. The inactive respondents did not perceive a need for or benefits of the e-service. Having no need for the e-service can be interpreted as a lack of perceived benefits. It demonstrates a need for companies to find ways to increase customer use of e-services. The respondents were asked if they remembered having received information about the e-service and if they had used the e-service. The analysis showed that there was a positive association between remembering having received information about the e-service and using the e-service. This could indicate that by increasing communication about the benefits of e-service usage, it is possible to increase the trial of e-services. However, it could also indicate that because customers have logged into the e-service, they are more attentive towards information they receive about it.
5  MAIN STUDY

This chapter presents the Main study. The chapter begins with the experiment design including the treatments, the materials used, the sample, the data collection and tracking of the e-mails. The second part presents the findings and the conclusions from the Main study.

5.1.  Experiment design

The Main study was designed as an experimental study to test the behavioral effect of communicating e-service benefits through e-mail. Three benefits were chosen: 1) Time savings, 2) Access to accurate information, and 3) Easy to use. The benefits were presented alone, in pairs, or all three together. The behavioral effect measured web traffic such as e-mail open rates, click-through rates and login rates. Interest in the service, in terms of click-through rates, represent an attitudinal dimension of adoption, whereas login-rates represent the behavioral dimension of trial.

An experimental study seeks to determine whether an intervention has the intended causal effect on the studied participants. There are usually three key components of an experimental study design: (1) pre-post test design, (2) a treatment group and a control group, and (3) random assignment of study participants. A pre-post test design requires a collection of data of study participants' level of performance before the intervention took place (pre), and after the intervention took place (post) (Söderlund 2010). A pre-post test design was not used in the current study, since only new customers were included.

To get the true effect of an intervention, it is necessary to have both a treatment group and a control group. As the name suggests, the treatment group receives the intervention, while the control group does not. By having both a group that received the intervention and another group that does not, researchers control for the possibility that other factors not related to the intervention are responsible for the difference between the pre-test and post-test results.

The experiment (Figure 4.) was performed as a 3-way factorial design consisting of three e-service benefits. The treatments comprised all combinations of the three e-service benefits, which were described in the e-mails (for further details see Chapter 5.1.2.). This resulted in seven different e-mails, including: one benefit, two benefits, or in a combination of all three benefits. In addition, an eight treatment was added, including one group that received the same e-mail twice to test the effect of the repeat action. One group of respondents, which did not receive any e-mail, formed the control group. In total seven different e-mails were used for eight different treatment groups including one treatment which received the e-mail twice.

Since the control group did not receive e-mail, click-through rates are only compared between the treatments. The control group was used to compare actual login-rates to the e-service, a proxy for trial of the e-service.
In order to study the effect of e-mail communication on consumer e-service adoption and the differences between the three e-service benefits, the e-mails were tracked. Each individual e-mail address as well as the links and their frequencies in the e-mail messages were tracked separately. Finally, the login to the e-service was tracked in order to know whether the customer had logged into the e-service via the e-mails or not. In this study the used landing page was the actual e-service home page from which the customer could log in to the service. As the control group did not receive any e-mail communication, there was no control group e-mail traffic to track. However, the control group was used in the Post study (see Chapter 6.) in order to compare the responses of this group with the groups that received the e-mail communication.

5.1.1. Experiment treatments

The three e-service benefits 1) Save time, 2) Access to accurate information and 3) Easy to use, were chosen for the experiment. The number of benefits was limited to three since 1) the Pilot study showed that these three benefits were core constructs in the data, 2) because the three benefits had face validity with regard to the service, 3) because previous research presented in the literature review has shown the importance of these three benefits, and 4) Increasing the number of e-service benefits would have required a larger sample size. The total sample size was based on all monthly new B2C customers of the Company. A larger sample size would have required new customers from a longer time period than one month. This would have led to a situation in which
it would not have been possible to control the similarity between customers of the
direct mail and e-mail communication sent by the telecom company, which again
would have had serious implications for the validity of the Main experiment. In
addition, three messages were perceived as the limit of what could be included in the e-
mails without cluttering the design. Approximately 40% of Nordic consumers (Apsis
2013) read e-mails on their mobile phone, which limits further the amount of space and
messages. No assumptions were made about differences in importance of the three
benefits.

Table 11 lists the control group (To) and all treatments (T1-T7) with the corresponding
combinations of e-service benefits in the columns. The letter Y (Yes) shows which
benefits were included in which treatment mails. Similarly, the letter N (No) shows that
the e-mail did not contain that specific benefit. The experiment comprised seven
different e-mails (T1-T7) and a control group (To), which did not receive any e-mails
but which was used in the Post study analysis.

Table 11  Experiment treatments and control group

<table>
<thead>
<tr>
<th>Treatment</th>
<th>N</th>
<th>Benefit Save time</th>
<th>Benefit Access accurate information</th>
<th>Benefit Easy to use</th>
</tr>
</thead>
<tbody>
<tr>
<td>To</td>
<td>1861</td>
<td>N</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>T1</td>
<td>1886</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>T1Repeat</td>
<td>1855</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>T2</td>
<td>1871</td>
<td>Y</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>T3</td>
<td>1877</td>
<td>N</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>T4</td>
<td>1858</td>
<td>N</td>
<td>N</td>
<td>Y</td>
</tr>
<tr>
<td>T5</td>
<td>1851</td>
<td>Y</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>T6</td>
<td>1861</td>
<td>N</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>T7</td>
<td>1857</td>
<td>Y</td>
<td>N</td>
<td>Y</td>
</tr>
<tr>
<td>Total</td>
<td>16777</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

N=No, benefit was not included, Y=Yes, benefit was included, Repeat= the same treatment T1
was sent twice.

The treatment T1Repeat included the same benefits as T1, that is, all three benefits. It
was sent to a separate group of customers, which received the same e-mail twice
(T1Repeat). Each group originally included a sample of 2000 customers, but bounced
and opt-out mail addresses reduced the amount of customers, who received the
mailing, to between 1851-1886 customers per group.

5.1.2. Wireframes

A wireframe is a visual guide that represents the skeletal framework of a digital
element. Wireframes are created for the purpose of arranging elements to best
accomplish a particular purpose such as a business objective or a creative idea. The
wireframe depicts the page layout or arrangement of content, including interface
elements and navigational systems. The wireframe usually lacks typographic style,
color, or graphics, since the main focus lies in functionality, behavioral intention and
priority of content.

The wireframes of the treatments were designed on one main e-mail template, as the
idea was to keep all treatments as similar as possible in order to avoid measurement
bias. In order to make the treatments as identical as possible, the wireframes were
designed with the help of modules. The pre-header, header, introduction and footer modules were identical in all treatments, but the size of the message modules varied depending on whether the treatment had one, two or three messages (Save time, Access to accurate information and Easy to use). The wireframe of treatments T1 and T1Repeat, which included all three e-service benefits, is shown in the following figure 5. For the wireframes for the other treatments see Appendix 7.

![Figure 5 Wireframe of e-mails to groups T1 and T1Repeat](image)

Seven treatment e-mails were built, in which the three measured e-service benefits were used in all combinations. The e-mail benefit modules were always placed in the same order meaning that "Save time" was the first benefit, "Access to accurate information" the second benefit and "Easy to use" the third benefit from left to right. If the e-mail had only two modules, the same order was used meaning that "Save time" was the first on the left hand side and "Access to accurate information" on the right hand side. Rotating the benefit modules was not possible due to technical delimitations.

5.1.3. Visual elements

The visual elements used in the e-mails represented the graphic identity of the telecom operator. The idea was to keep the visuals in the different experiment treatment as similar to each other as possible. In order to avoid a measurement bias caused by varying attraction rates of visual images, icons were used instead of real pictures. The only visual images used in the e-mails were icons presenting the benefits of "Save time", "Access to accurate information" and "Easy to use". Figure 6 shows the visual icons presenting the benefits in the e-mail messages.
All e-mails were designed and produced by a professional digital art director from a
digital agency with more than 10 years of experience from customer communication in
digital channels.

![Figure 6](image.png)

**Figure 6** Visual icons presenting the benefits in the e-mail messages

### 5.1.4. Copywriting

The sender, subject line, the pre-header, the footer as well as the introductory text of
each mail were identical in all treatments. Only the texts of the e-service benefits were
subject to change. The objective was to keep the texts short and the length of the text in
each mediating message on the same length. The Finnish texts were all prepared by a
professional copywriter from a digital agency with more than 25 years of experience
from customer communication. The texts were translated into English, by a native
English speaker with a Master's degree in business studies (marketing). The text
content of the e-mails can be found in Appendix 8.

### 5.1.5. Sample

The sample consisted of all the new B2C customers of a Finnish telecom Company
within the past four weeks before the experiment. The study was limited to mobile
subscription customers because mobile subscription customers use customer services
more than broadband subscription customers. By choosing customers above 18 years
and those who were the actual users of the mobile subscription, it was secured that the
recipient of the e-mails was the paying end-customer of the mobile subscription. By
securing that 1) the customer had not been a customer during the previous 12 months,
2) had not logged into the service earlier, 3) had not received other communication
about the e-service and 4) had not received an invoice yet, the initial conditions for the experiment were same for all the respondents. In this way it could be assumed that the effect was due to the e-mail sent rather than other communication about the e-service.

The power of experimental research is in its ability to uncover causal relations. The reason why experimental research can achieve this goal is because of complete randomization. Randomization refers to the random assignment of treatments to the experimental units of participants (Lazar et. al 2010). While no two groups will ever be exactly alike, the best way to be sure that they are as close as possible is having a random assignment for the study participants in both the treatment groups and the control group. By randomly assigning participants, it is possible to be sure that any difference between the treatment group and control group is due to chance alone, and not by a selection bias. In a totally randomized experiment, no one is able to predict the condition to which a participant is going to be assigned.

Traditional random methods include tossing a coin, throwing a dice or drawing capsules from an urn. However, these types of randomization methods are not possible in cases such as this with thousands of customers. One method to use for large experiment groups is the use of random digit tables such as RAND (Lazar et al. 2010). The original RAND table consists of one million random digits and it can be used either manually or by assigning each participant a random digit (RAND 1955). Nowadays software driven randomization is commonly used among both researchers and practitioners. Randomization software tools can be found online. And most software tools and packages such as Excel, SAS, SPSS and SYSTAT include randomization functions. This study used the RAND function of Excel.

It is important that both the treatment group and the control group are of adequate size to be able to determine whether an effect took place or not. 21 095 new customers represented the initial sample of new customers from the previous 4 weeks who qualified for the sample characteristics. A random digit for each of the initial 21 095 customers was run in the Excel randomization tool (RAND digit table). The customers were rank ordered from the lowest to the highest value of the random digit after which the first 18 000 customers were chosen for the experiment. The total sample size of the experiment was set to 2000 for each of the nine groups, including eight treatment groups and one control group, totaling 18 000 customers out of the initial sample of 21 095 new customers.

5.1.6. Data collection

The e-mails were sent with a marketing communication tool (Postiviidakko), especially designed for sending mass e-mails. A customer contact list was received on Tuesday 12th of June 2012. Randomizing the recipients and the testing of the e-mails was performed on Wednesday 13th of June 2012. The e-mails were sent on the afternoon of Thursday 14th of June 2012 between 4 p.m. and 4:30 p.m. The repeat e-mail to the group TiRepeat was sent on Friday 15th of June 2012 at 12 p.m. The click-through and login data from the e-mail treatments were collected from June 14 to July 2, 2012.
5.1.7. **Measurement and tracking**

The behavioral measures were on nominal and ordinal scales. Nominal level scale indicated either a unique click or/and unique login, which was coded as one (1). When the customer took no action it was coded as zero (0). The total number of clicks or logins was on an ordinal level measuring values between 1 and 9. No action was coded as a zero (0). Using nominal and ordinal scale measurements is typical in digital communication. The primary objective of digital marketing communication is to convert a prospect to a website visitor by clicking a link which leads to the landing page (the web page to which the visitor arrives by clicking the link). The role of the landing page is to grab the attention of the visitor and to make the visitor act in terms of buying, logging in or asking for further information and/or contact. In this study the landing page was the e-service home page from which the customer could login to the service. The e-service login page was the original landing page used by the Company and it did not contain any of the elements (benefits, images, texts), which were used in the e-mails.

The e-mails were tracked in order to study the effect of the treatments. Tracking was done with the help of individual tags attached to each individual e-mail address. Also, each link in each e-mail message was tagged separately. A tag was also placed in the e-mail in order to measure the Open rates. Finally, the login to the e-service was tracked in order to know whether the customer had logged into the e-service via the e-mails (See Figure 7). Cookies were used in order to measure the frequencies (total number of clicks/logins) of each visitor.

- Seven different e-mails
- Each e-mail recipient has a unique ID/tag which shows who has clicked the link
- Each e-mail message link has a unique ID/tag which shows which link has been clicked
- Connecting sender data against open rate, click-through rate and login data
- Data about who has clicked and which links and how many times

**Figure 7  Tracking of the experiments**
The tracking (Figure 7.) of the data was done with the help of two digital tracking tools. The e-mail marketing tool (Postiviidakko), which was used for sending the e-mails, tracked e-mail address bounces and the individual recipients to the individual landing page level. But, as the e-mail marketing tool was not integrated to the telecom Company e-service login system, another more comprehensive tracking and measurement tool (Snoobi) was linked to the e-mail data stream in order to be able to track individual e-service logins. The reporting tools of both digital marketing systems were used in order to collect and report the data. In the treatments with two or three benefits customers could choose which of the two or three links they clicked on. They could also click on several benefit links at different times meaning that the e-mail treatments could result in more than one, two or three clicks. As marketing people are usually interested only in those clicking a link, not clicking a link could not be automatically coded as an observation of no click by the data program. Therefore values for not clicking the link or logging into the e-service had to be inserted separately. Not clicking or logging in was coded as zero (0).

The data could only be extracted on a treatment group level, meaning that both the bounce and the click stream data of each treatment group and of each measurement were all in a separate XLS-sheets. A third party Excel merge tool (Ablebits) was used in order to match the data files of customer and recipient ID. After this, Excel was used in order to add the zero (0) coding for those recipients who had not clicked a certain link. As the total Excel sheet included all treatment groups and all individual link combinations, zero (0) coding could be given only on a treatment basis for the given group who had received the particular treatments. The analysis tool of the study was SPSS (Mac Version 19).

Three tracking measures were used: 1) Open rate, 2) Click-through rate, and 3) Login rate.

1) Open rate (OR), is a measurement for how many customers open (clicks) the e-mail in their e-mail inbox, usually given in percentages. Open rate was tracked based solely on unique visits, which were defined as unique visitors from browsers, desktops, laptops or mobile handsets.

The e-mail preview varies depending on the e-mail client, the handset/pc/tablet used, the user preferences and the screen size used for opening the e-mail, and the preview (what the recipient sees when the e-mail is opened before rendering the pictures). The picture in Appendix 9 demonstrates the preview of the e-mail treatments for groups T1 and T1Repeat (all three benefits) on Outlook 2010, which was the most popular e-mail client in Finland in November 2012 (Apsis 2013). The e-mail client usually shows the preview without rendering the pictures. This means that the sender, subject line and preview header texts were identical in all treatments. The preview of the treatments the recipients received was almost identical and the texts from the e-service benefit modules could not be seen in the previews. As all e-mails had the same sender and subject line, no variations in open rates were expected apart from variations in the repeat treatment.

2) Click-through rate (CTR) is the most popular web analytics measurement, which measures how many visitors/recipients/customers click a link, usually given in percentages. CTR was defined as visitors from browsers, desktops, laptops or mobile handsets. Table 12 demonstrates the CTR measures used in the experiment.
Table 12  CTR measures used in the experiment

<table>
<thead>
<tr>
<th>Measurement</th>
<th>Definition</th>
<th>Usage in the analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unique CTR per benefit and treatment.</td>
<td>Solely no click or one click per benefit and treatment per respondent, regardless of the number of benefits in the treatment, or the number of clicks on each benefit.</td>
<td>To compare effects between CTR of benefits, treatments and number of benefits. Conversion rate.</td>
</tr>
<tr>
<td>Total CTR per treatment.</td>
<td>No click or one click per benefit of each treatment for each respondent.</td>
<td>To compare effects in total CTR between treatments.</td>
</tr>
</tbody>
</table>

The unique CTR per benefit and treatment measured solely no click or one click per benefit and treatment per respondent, regardless of the number of benefits in the treatment, or the number of clicks on each benefit. The unique CTR was used to compare the effects between CTR of benefits, treatments and number of benefits. An additional measure called conversion rate was built based on the unique CTRs and unique login rates. The conversion rate will be elaborated further in chapter 5.3.8.

The total CTR per treatment measured no click or one click per benefit of each treatment for each respondent. The total CTR per treatment was used to compare the effects in total CTR between treatments.

3) Login rate: Login access required both user ID and passwords, which the customer had received when he/she bought the subscription. Both user ID and passwords could also be retrieved with the help of either bank or mobile identification. This means that the customer could not login directly after clicking the e-mail links as she/he had to first find the user ID and the password. Login rates were tracked in the same way as the CTR above meaning that the login rate was defined as visitors from browsers, desktops, laptops or mobile handsets. Table 13 demonstrates login rate measures used in the experiment.

Table 13  Login measures used in the experiment

<table>
<thead>
<tr>
<th>Measurement</th>
<th>Definition</th>
<th>Usage in the analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unique login rate per benefit and treatment.</td>
<td>Solely no login or one login per benefit and treatment per respondent, regardless of the number of benefits in the treatment, or the number of logins on each benefit.</td>
<td>Compare effects between login rates of benefits, treatments and number of benefits. Conversion rate.</td>
</tr>
<tr>
<td>Total login rate per treatment.</td>
<td>No login or one login per benefit of each treatment for each respondent.</td>
<td>To compare effects in total login rate between treatments.</td>
</tr>
</tbody>
</table>

The unique login rate per benefit and treatment measured solely no login or one login per benefit and treatment per respondent, regardless of the number of benefits in the
treatment, or the number of logins on each benefit. The unique login rate was used to compare the effects between benefits, treatments and number of benefits. An additional measure called conversion rate was built based on the unique CTRs and unique login rates. The conversion rate will be elaborated further in chapter 5.3.8.

The total login rate per treatment measured no login or one login per benefit of each treatment for each respondent. The total login rate per treatment was used to compare the effects in the total login rates between treatments.

5.2. Research hypothesis

To date, there is comprehensive research on many of the underlying factors that influence consumer adoption of new e-services. However, most studies have investigated intended behavior rather than real behavior. In this study, consumer benefits are assumed to have a positive effect on e-service adoption, as outlined in the literature review. Past studies have emphasized the importance of perceived benefits and encouraged companies to pay more attention to the potential benefits that they offer their online users. However, there seem to be no previous studies on the actual effect of such communication.

Because there is a lack of understanding of how e-service benefits could be used to encourage e-service adoption it seems relevant to ask if companies could communicate the e-service benefits to consumers pro-actively. Research in online communication shows that consumers are influenced by online marketing communication.

The experiment can be seen as exploratory, because no past research can be used to guide the expected effects. For example, no hypotheses could be formed regarding which benefit would more likely lead to adoption. However, on a general level, it is assumed that communicating any e-service benefit to consumers will have a positive effect on adoption, which in this thesis is operationalized as the click-through rate and login rate to an e-service.

Thus, based on the literature review, it is proposed that communicating e-service benefits will have a positive effect on adoption, while acknowledging that there may be no effect (null hypothesis). In other words, the experiment tests the following main hypothesis:

H0: Communicating consumer e-service benefits to consumers through e-mail, has no effect on consumer e-service adoption.

H1: Communicating consumer e-service benefits to consumers through e-mail (T1-T7) leads to more consumers adopting the e-service than if they receive no e-mail (T0).
5.3. Findings from the Main study

The main purpose of the experiment was to study if communicating consumer e-service benefits to consumers through e-mails has a positive effect on consumer e-service adoption. The effect of the treatments with the e-service benefits "time saving", "access to accurate information" and "easy to use" on e-mail open rates, click-through rates and login rates to the e-service were analyzed.

First, the open rates of the treatments are presented. Second, the click-through rates (CTR) of the benefits and treatments are shown. Third, the login rates of the benefits and treatments are shown. Fourth, the results in terms of conversion rates are presented. The chapter ends with a summary of the findings.

5.3.1. Open rates

Open rate data show if the e-mail was opened or not. The preview of the e-mail treatments that the recipients received were almost identical and the texts of the e-service benefit modules could not typically be seen in the previews. Due to the similarity of the preview of each e-mail treatment (see Appendix 9.), no differences between the open rates of different treatments were found when the recipient received one e-mailing (Table 14). However, when a repeat e-mail with exactly the same content was sent, the open rate increased from the one e-mail open rate of 30.49 % (T1) to the two mailings open rate of 54.18 % (T1Repeat). This was the email that contained all three benefits.

Table 14 E-mail open rates

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Benefit</th>
<th>Benefit</th>
<th>Benefit</th>
<th>Total N</th>
<th>Unique Open Rate N</th>
<th>Unique Open rate %</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Save time</td>
<td>Access to accurate information</td>
<td>Easy to use</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>T1 Repeat</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>1886</td>
<td>575</td>
<td><strong>30.49</strong></td>
</tr>
<tr>
<td>T2</td>
<td>Y</td>
<td>N</td>
<td>N</td>
<td>1871</td>
<td>584</td>
<td>31.21</td>
</tr>
<tr>
<td>T3</td>
<td>N</td>
<td>Y</td>
<td>N</td>
<td>1877</td>
<td>589</td>
<td>31.38</td>
</tr>
<tr>
<td>T4</td>
<td>N</td>
<td>N</td>
<td>Y</td>
<td>1858</td>
<td>562</td>
<td>30.25</td>
</tr>
<tr>
<td>T5</td>
<td>Y</td>
<td>Y</td>
<td>N</td>
<td>1851</td>
<td>551</td>
<td>29.77</td>
</tr>
<tr>
<td>T6</td>
<td>N</td>
<td>Y</td>
<td>Y</td>
<td>1861</td>
<td>579</td>
<td>31.11</td>
</tr>
<tr>
<td>T7</td>
<td>Y</td>
<td>N</td>
<td>Y</td>
<td>1857</td>
<td>519</td>
<td>27.95</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td></td>
<td>14916</td>
<td>4964</td>
<td><strong>33.28</strong></td>
</tr>
</tbody>
</table>

Note: N=No, Y=Yes

5.3.2. Unique click-through rate of benefits and treatments

The second group of behavioral measurement items used in the experiment, were the unique click-through rate of both benefits and treatments. Table 15 shows the unique click-through rate (CTR) of each benefit and of each treatment.
### Table 15  Unique CTR of benefits and treatments

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Total N</th>
<th>Benefit</th>
<th>CTR</th>
<th>Benefit</th>
<th>CTR</th>
<th>Unique CTR %</th>
<th>Rank order unique CTR</th>
</tr>
</thead>
<tbody>
<tr>
<td>T1</td>
<td>1886</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>93</td>
<td>4.93</td>
<td>7</td>
</tr>
<tr>
<td>T1Repeat</td>
<td>1855</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>110</td>
<td>5.93</td>
<td>6</td>
</tr>
<tr>
<td>T2*)</td>
<td>1871</td>
<td>Y</td>
<td>N</td>
<td>N</td>
<td>124</td>
<td><strong>6.63</strong></td>
<td><strong>4</strong></td>
</tr>
<tr>
<td>T3*)</td>
<td>1877</td>
<td>N</td>
<td>Y</td>
<td>N</td>
<td>207</td>
<td><strong>11.03</strong></td>
<td><strong>1</strong></td>
</tr>
<tr>
<td>T4*)</td>
<td>1858</td>
<td>N</td>
<td>N</td>
<td>Y</td>
<td>168</td>
<td><strong>9.04</strong></td>
<td><strong>2</strong></td>
</tr>
<tr>
<td>T5</td>
<td>1851</td>
<td>Y</td>
<td>Y</td>
<td>N</td>
<td>114</td>
<td>6.16</td>
<td>5</td>
</tr>
<tr>
<td>T6</td>
<td>1861</td>
<td>N</td>
<td>Y</td>
<td>Y</td>
<td>129</td>
<td><strong>6.93</strong></td>
<td><strong>3</strong></td>
</tr>
<tr>
<td>T7</td>
<td>1857</td>
<td>Y</td>
<td>N</td>
<td>Y</td>
<td>90</td>
<td>4.85</td>
<td>8</td>
</tr>
<tr>
<td>Total</td>
<td>14916</td>
<td></td>
<td></td>
<td></td>
<td>1035</td>
<td>6.94</td>
<td></td>
</tr>
</tbody>
</table>

Note: N=No, Y=Yes
*) one benefit

The second column from the right in Table 15 shows that the e-service benefit "Access to accurate information" (T3) seemed to be the strongest in terms of consequent behavior, because it had the highest unique benefit CTR of 11.03%. The e-service benefit "Easy to use" (T4) came second with a unique benefit CTR of 9.04% followed by the benefit "Save time" (T2) which ranked third with a unique benefit CTR of 6.63%.

The first column from the right in Table 15 shows that the e-mail treatment with the benefit "Access to accurate information" (T3) seemed to be the strongest in terms of consequent behavior, because it had the highest unique treatment CTR of 11.03%. The e-mail treatment with the e-service benefit "Easy to use" (T4) came second with a unique treatment CTR of 9.04%. These were followed by an e-mail treatment with two benefits combined, so that the combination of "Access to accurate information" and "Easy to use" (T6) ranked third with unique treatment CTR of 6.93%. Pairwise tests of independence of the unique CTR rates were used to confirm the associations above (Table 16).

### Table 16  Pairwise test of independence of unique CTR of benefits and treatments

<table>
<thead>
<tr>
<th>Treatments</th>
<th>N</th>
<th>DF</th>
<th>Chi-square</th>
<th>P-value</th>
<th>Phi</th>
<th>Association</th>
</tr>
</thead>
<tbody>
<tr>
<td>T3/T2*)</td>
<td>3741</td>
<td>1</td>
<td>6.44</td>
<td>.01</td>
<td>-.05</td>
<td>T3&gt;T2</td>
</tr>
<tr>
<td>T4/T2*)</td>
<td>3714</td>
<td>1</td>
<td>5.02</td>
<td>.03</td>
<td>-.04</td>
<td>T4&gt;T2</td>
</tr>
<tr>
<td>T3/T4*)</td>
<td>3735</td>
<td>1</td>
<td>9.24</td>
<td>.00</td>
<td>.05</td>
<td>T3&gt;T4</td>
</tr>
<tr>
<td>T4/T6</td>
<td>3719</td>
<td>1</td>
<td>5.23</td>
<td>.02</td>
<td>.04</td>
<td>T4&gt;T6</td>
</tr>
<tr>
<td>T1Repeat</td>
<td>3741</td>
<td>1</td>
<td>1.93</td>
<td>.17</td>
<td>-.03</td>
<td>T1Repeat=T1</td>
</tr>
</tbody>
</table>

*) one benefit

The treatments with one benefit (T2-T4) were tested first. The Chi-square test for independence (Yates Continuity Correlation) indicated a significant association between the unique CTR of treatment T2 ("Save Time") and the treatment T3 ("Access to accurate information"), Chi-square (1, n=3741) = 6.44, p= .01, phi= -.05. The tests show that the unique CTR for the treatment T3 is higher than the unique CTR of
treatment T2. The effect shows a very small effect using Cohen’s (1988) criteria. Significant associations and their direction are shown in the last column of Table 16.

Similarly, the unique CTR of T4 ("Easy to use") is higher than unique CTR of treatment T2 ("Save time"). A Chi-square test for independence (Yates Continuity Correlation) indicated a significant association, Chi-square (1, n=3741) = 5.02, p=.03, phi=-.04. The effect shows a very small effect using Cohen’s (1988) criteria.

The unique CTR of treatment T3 ("Access to accurate information") is higher than the unique CTR of treatment T4 ("Easy to use"). A Chi-square test for independence (Yates Continuity Correlation) indicated a significant association, Chi-square (1, n=3735) = 9.24, p=.00, phi=.05. The effect shows a small effect using Cohen’s (1988) criteria.

The unique CTR of treatment T4 ("Easy to use") is higher than the unique CTR of treatment T6, including two benefits ("Access to accurate information" and "Easy to use"). A Chi-square test for independence (Yates Continuity Correlation) showed a significant association, Chi-square (1, n=3719) = 5.23, p=.02, phi=.04. The effect shows also a small effect using Cohen’s (1988) criteria.

Finally, comparing the unique CTR between treatment T1 (4.93%) and treatment T1Repeat (5.93%) showed that the treatment with a repeat mail had a higher absolute value of CTR than the CTR of treatment T1 (all three benefits without repeat). However, a Chi-square test for independence (Yates Continuity Correlation) showed no significant association between the treatments and effects, Chi-square (1, n=3741) = 1.93, p=.17, phi=-.03.

**5.3.3. Unique click-through rate and the number of benefits**

The unique CTRs of treatments were used to study if there was an effect on the unique CTR of the number of benefits that were included in the treatment (Table 17.). The treatments T2, T3 and T4, which included one benefit each formed one group (M1) with a mean unique CTR of 8.90%. A second group (M2, unique CTR mean 5.98%) was formed from treatments T5, T6 and T7, each including two e-service benefits. The third group (M3, unique CTR mean 4.93%) included treatment T1, with three benefits. The results regarding possible differences between the number of benefits, is of interest because e-mails are regarded as very fast channels meaning that the consumer is ready to use only a few seconds for reading the e-mail and deciding whether to click forward or exit the e-mail.

<table>
<thead>
<tr>
<th>Combinations</th>
<th>N</th>
<th>Unique CTR N</th>
<th>Unique CTR Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>One benefit M1 (T2/T3/T4)</td>
<td>1869</td>
<td>163</td>
<td>8.90</td>
</tr>
<tr>
<td>Two benefits M2 (T5/T6/T7)</td>
<td>1856</td>
<td>111</td>
<td>5.98</td>
</tr>
<tr>
<td>Three benefits M3 (T1)</td>
<td>1886</td>
<td>93</td>
<td>4.93</td>
</tr>
</tbody>
</table>

The three new groups were then compared with regard to the behavioral effect of displaying one benefit, two benefits, or three benefits. The pairwise test of independence is displayed in Table 18.
The unique CTR of M1 (one benefit) is higher than the unique CTR of M2 (two benefits), and higher than the unique CTR of M3 (three benefits). The Chi-square test for independence indicated a significant association between the unique CTR of M1 and M2, Chi-square (1, n=3725)= 10.26, p= .00, and between the unique CTR of M1 and M3, Chi-square (1, n=3755)= 21.23, p= .00. However, there was no difference between the unique CTR of M2 (two benefits) and the unique CTR of M3 (three benefits), with a Chi-square of (1, n=3742)= 2.00, p= .16.

The results show that there is a difference between the number of e-service benefits and the unique CTR. E-mails with one e-service benefit leads to a higher unique CTR than e-mails with two or three e-service benefits. However, presenting two e-service benefits leads to the same unique CTR as including three e-service benefits.

### 5.3.4. Total click-through rate of treatments

Table 19 shows the total CTR of each benefit and each treatment. The data include one click of all available benefits by the same recipient. The data also shows the total sum of CTR for each treatment, which was used to investigate the difference between the total CTR of each individual benefit (last row in Table 19.) throughout all treatments. According to the data, the total sum of CTR is highest for "Access to accurate information" (462 clicks), followed by "Easy to use" (350), and "Save time" (309).

Table 19  Total CTR of treatments

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Total N</th>
<th>Benefit Save time</th>
<th>Benefit Access to accurate information</th>
<th>Benefit Easy to use</th>
<th>N</th>
<th>Total CTR %</th>
<th>Rank order of total CTR</th>
</tr>
</thead>
<tbody>
<tr>
<td>T1</td>
<td>1886</td>
<td>39</td>
<td>40</td>
<td>28</td>
<td>107</td>
<td>5.67</td>
<td>7</td>
</tr>
<tr>
<td>T1Repeat</td>
<td>1855</td>
<td>48</td>
<td>54</td>
<td>33</td>
<td>135</td>
<td>7.28</td>
<td>4</td>
</tr>
<tr>
<td>T2*</td>
<td>1871</td>
<td>124</td>
<td></td>
<td>124</td>
<td></td>
<td>6.63</td>
<td>6</td>
</tr>
<tr>
<td>T3*</td>
<td>1877</td>
<td>207</td>
<td></td>
<td>207</td>
<td></td>
<td>11.03</td>
<td>1</td>
</tr>
<tr>
<td>T4*</td>
<td>1858</td>
<td>69</td>
<td>65</td>
<td>168</td>
<td>168</td>
<td>9.04</td>
<td>2</td>
</tr>
<tr>
<td>T5</td>
<td>1851</td>
<td>69</td>
<td>65</td>
<td>134</td>
<td></td>
<td>7.24</td>
<td>5</td>
</tr>
<tr>
<td>T6</td>
<td>1861</td>
<td>96</td>
<td>49</td>
<td>145</td>
<td></td>
<td>7.79</td>
<td>3</td>
</tr>
<tr>
<td>T7</td>
<td>1857</td>
<td>29</td>
<td>72</td>
<td>101</td>
<td></td>
<td>5.44</td>
<td>8</td>
</tr>
<tr>
<td>Total</td>
<td>14916</td>
<td></td>
<td></td>
<td></td>
<td>1121</td>
<td>7.52</td>
<td></td>
</tr>
</tbody>
</table>

*) one benefit
The data in the first column from the right in Table 19 shows that the e-mail "Access to accurate information" (T3) is the most effective treatment for total CTR, followed by "Easy to use" (T4), and "Access to accurate information and "Easy to use"" (T6). Comparing this data with the earlier unique CTR treatment data shows that the rank order of the benefits is the same both in terms of unique or total benefit CTR. The rank order of the three most effective treatments is also the same whether the data was unique or total treatment CTR.

5.3.5. **Unique login rate of benefits and treatments**

The third group of measurements, was the unique login rates of both benefits and treatments. Table 20 shows the unique login rates of both each e-mail benefit and treatment.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>N</th>
<th>Benefit</th>
<th>Benefit</th>
<th>Benefit</th>
<th>N</th>
<th>Unique login rate %</th>
<th>Rank order of unique login rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>T1</td>
<td>1886</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>17</td>
<td>0.90</td>
<td>4</td>
</tr>
<tr>
<td>T1Repeat</td>
<td>1855</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>10</td>
<td>0.54</td>
<td>6</td>
</tr>
<tr>
<td>T2*)</td>
<td>1871</td>
<td>Y</td>
<td>N</td>
<td>N</td>
<td>8</td>
<td>0.43</td>
<td>7</td>
</tr>
<tr>
<td>T3*)</td>
<td>1877</td>
<td>N</td>
<td>Y</td>
<td>N</td>
<td>24</td>
<td>1.28</td>
<td>1</td>
</tr>
<tr>
<td>T4*)</td>
<td>1858</td>
<td>N</td>
<td>N</td>
<td>Y</td>
<td>21</td>
<td>1.13</td>
<td>3</td>
</tr>
<tr>
<td>T5</td>
<td>1851</td>
<td>Y</td>
<td>Y</td>
<td>N</td>
<td>13</td>
<td>0.70</td>
<td>5</td>
</tr>
<tr>
<td>T6</td>
<td>1861</td>
<td>N</td>
<td>Y</td>
<td>Y</td>
<td>22</td>
<td>1.18</td>
<td>2</td>
</tr>
<tr>
<td>T7</td>
<td>1857</td>
<td>Y</td>
<td>N</td>
<td>Y</td>
<td>8</td>
<td>0.43</td>
<td>7</td>
</tr>
<tr>
<td>Total</td>
<td>14916</td>
<td></td>
<td></td>
<td></td>
<td>123</td>
<td>0.82</td>
<td></td>
</tr>
</tbody>
</table>

Note: N=No, Y=Yes  
*) one benefit

The second column from the right in Table 20 shows that the benefit "Access to accurate information" (T3) has the most positive effect, with the highest unique login rate of 1.28%. The benefit "Easy to use" (T4) has the second highest rate, with a unique login rate of 1.13%, followed by the benefit "Save time" (T2) which ranked third, with a unique login rate of .43%.

The data in the first column from the right in Table 20 shows that the treatment with "Access to accurate information" (T3) has the most positive effect on behavior, with the highest unique login rate of 1.28%. The treatment with a combination of "Access to accurate information" and "Easy to use" (T6) has the second highest rate, with a unique login rate of 1.18%, followed by "Easy to use" (T4) ranked third, with a unique login rate of 1.13%. Thus the results differ from the CTR results regarding the rank order since the treatment with the benefits "Easy to use (T4), was second highest in terms of CTR but third in terms of the login rate. This will be elaborated on later.

Pairwise tests of independence of the unique login rates were used in order to confirm the associations above. The Fisher’s Exact Probability Test was used as one cell showed too small a cell size in all three tests. The test shows that all treatments have the same effect.
5.3.6. *Unique login rate and the number of benefits in the treatments*

Similarly to the CTR rates, the unique login rate data were used to investigate the effect of the number of benefits per treatment on the unique login rate (Table 21). The treatments T2, T3 and T4 with one benefit formed a one group (M1) with a mean unique login rate of .94%. The treatments T5, T6 and T7, each including two benefits, formed a second group (M2), with a login mean rate of .77%. The treatment T1, with three benefits, formed the third group (M3), with a login mean rate of .90%.

<table>
<thead>
<tr>
<th>Combinations</th>
<th>Mean N</th>
<th>Unique Login N</th>
<th>Unique Login rate mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>One benefit M1 (T2/T3/T4)</td>
<td>1869</td>
<td>18</td>
<td>.94</td>
</tr>
<tr>
<td>Two benefits M2 (T5/T6/T7)</td>
<td>1856</td>
<td>14</td>
<td>.77</td>
</tr>
<tr>
<td>Three benefits M3 (T1)</td>
<td>1886</td>
<td>17</td>
<td>.90</td>
</tr>
</tbody>
</table>

A pairwise test for independence was performed, in which the unique login rate of treatments, with one, two and three benefits were compared (Table 21), but no significant differences between the treatments were detected.

5.3.7. *Total login rate of treatments*

Table 22 shows the total login rate of each benefit for each treatment. The data include one click per benefit of all available benefits by the same recipient. The total login rate data were used to investigate the difference both between the login rate of each individual benefit and treatment. The total login rate of benefits is highest for "Access to accurate information" (58), followed by "Easy to use" (46), and "Save time" (33). The treatment with a combination of "Access to accurate information" and "Easy to use" (T6) has the most positive effect, with the highest total login rate of 1.45%. The treatment with "Access to accurate information" (T3) had the second highest total login rate 1.28%, followed by the treatment with "Easy to use" (T4) with a total login rate of 1.13%.
<table>
<thead>
<tr>
<th>Treatment</th>
<th>N</th>
<th>Benefit Save time</th>
<th>Benefit Access to accurate information</th>
<th>Benefit Easy to use</th>
<th>N</th>
<th>Total login rate %</th>
<th>Rank order total login rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>T1</td>
<td>1886</td>
<td>10</td>
<td>5</td>
<td>6</td>
<td>21</td>
<td>1.11</td>
<td>4</td>
</tr>
<tr>
<td>T1Repeat</td>
<td>1855</td>
<td>3</td>
<td>3</td>
<td>5</td>
<td>11</td>
<td>0.59</td>
<td>6</td>
</tr>
<tr>
<td>T2</td>
<td>1871</td>
<td>8</td>
<td>8</td>
<td></td>
<td></td>
<td><strong>0.43</strong></td>
<td>8</td>
</tr>
<tr>
<td>T3</td>
<td>1877</td>
<td></td>
<td>24</td>
<td></td>
<td></td>
<td><strong>1.28</strong></td>
<td>2</td>
</tr>
<tr>
<td>T4</td>
<td>1858</td>
<td></td>
<td>21</td>
<td></td>
<td></td>
<td><strong>1.13</strong></td>
<td>3</td>
</tr>
<tr>
<td>T5</td>
<td>1851</td>
<td>8</td>
<td>7</td>
<td></td>
<td></td>
<td>0.81</td>
<td>5</td>
</tr>
<tr>
<td>T6</td>
<td>1861</td>
<td></td>
<td>19</td>
<td>8</td>
<td>27</td>
<td><strong>1.45</strong></td>
<td>1</td>
</tr>
<tr>
<td>T7</td>
<td>1857</td>
<td>4</td>
<td>6</td>
<td></td>
<td></td>
<td>0.54</td>
<td>7</td>
</tr>
<tr>
<td>Total</td>
<td>14916</td>
<td>33</td>
<td>58</td>
<td>46</td>
<td>137</td>
<td><strong>0.92</strong></td>
<td></td>
</tr>
</tbody>
</table>

Pairwise tests of independence were used to confirm the associations between the benefits and treatments total login rates. The Fisher’s Exact Probability Test was used as one cell showed too small a cell size in all three tests. There were no differences in effects between the benefits or the treatments.

### 5.3.8. Conversion rate

The e-mail communication used in the experiment of this study has two objectives. The first objective is to convert consumers to the e-service login page. The effect of this communication is measured with CTR. The second objective of the communication is to convert consumers to login to the e-service. This kind of process with several steps with the same final objective is called the conversion process. The rate measuring the effect of each of the different steps is called conversion rate. The conversion rate gives an indication of how good each step is in terms of creating clicks to the next step.

The conversion rate was built based on calculating the percentage share of unique logins out of unique CTR (Table 23). The Table 23 shows that even through T3 (Access to accurate information) had a higher sum of unique logins (1.28%) than T1 (0.90%), with all three benefits, the treatment T1 was better in terms of converting those who had clicked to the login page to login. The column on the right side in Table 23 shows that treatment T1 with all three benefits was the best converter at the final stage of the conversion process with the conversion rate 18.28%.
Table 23  Conversion rate of unique login vs. unique CTR

<table>
<thead>
<tr>
<th>Version</th>
<th>N</th>
<th>Benefit</th>
<th>Benefit</th>
<th>Benefit</th>
<th>N</th>
<th>Unique</th>
<th>N</th>
<th>Unique</th>
<th>Conversion</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Save</td>
<td>Access</td>
<td>Easy</td>
<td></td>
<td>CTR %</td>
<td></td>
<td>login %</td>
<td>rate %</td>
</tr>
<tr>
<td>T1</td>
<td>1886</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>93</td>
<td>4.93</td>
<td>17</td>
<td>0.90</td>
<td>18.28</td>
</tr>
<tr>
<td>T1Repeat</td>
<td>1855</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>110</td>
<td>5.93</td>
<td>10</td>
<td>0.54</td>
<td>9.09</td>
</tr>
<tr>
<td>T2</td>
<td>1871</td>
<td>Y</td>
<td>N</td>
<td>N</td>
<td>124</td>
<td>6.63</td>
<td>8</td>
<td>0.43</td>
<td>6.45</td>
</tr>
<tr>
<td>T3</td>
<td>1877</td>
<td>N</td>
<td>Y</td>
<td>N</td>
<td>207</td>
<td>11.03</td>
<td>24</td>
<td>1.28</td>
<td>11.59</td>
</tr>
<tr>
<td>T4</td>
<td>1858</td>
<td>N</td>
<td>N</td>
<td>Y</td>
<td>168</td>
<td>9.04</td>
<td>21</td>
<td>1.13</td>
<td>12.50</td>
</tr>
<tr>
<td>T5</td>
<td>1851</td>
<td>Y</td>
<td>Y</td>
<td>N</td>
<td>114</td>
<td>6.16</td>
<td>13</td>
<td>0.7</td>
<td>11.40</td>
</tr>
<tr>
<td>T6</td>
<td>1861</td>
<td>N</td>
<td>Y</td>
<td>Y</td>
<td>129</td>
<td>6.93</td>
<td>22</td>
<td>1.18</td>
<td>17.05</td>
</tr>
<tr>
<td>T7</td>
<td>1857</td>
<td>Y</td>
<td>N</td>
<td>Y</td>
<td>90</td>
<td>4.85</td>
<td>8</td>
<td>0.43</td>
<td>8.89</td>
</tr>
<tr>
<td>Total/Mean</td>
<td>14916</td>
<td></td>
<td></td>
<td></td>
<td>1035</td>
<td>6.94</td>
<td>123</td>
<td>0.82</td>
<td>11.88</td>
</tr>
</tbody>
</table>

Thus it can be speculated that if the most effective treatment T3 in terms of all CTRs were sent to all customers, the number of individual customers landing on the e-service login page would have been 1645 (14916 * 11.03%) and if the e-service login page had communicated all three benefits of treatment T1, it would be possible to get 300 (1645*18.28 %) logged in customers.

5.3.9. Analysis of the control group and treatment group logins

All the previously presented measurements were either click-through or login rates, which came via the e-mails during four weeks. As the control group (T0) did not receive any e-mail communication, an additional analysis was performed, including all logins to the e-service, in order to compare the control group login data with the login data of the treatment groups. The data included all logins to the e-service between June 14-July 2, 2012. Two measures were used: 1) the unique login rate and 2) the total login rate. Table 24 shows both measures of login rates. The Total N in Table 25 is smaller than the N of the previously presented data due to the fact that some customers had left the company and could not be matched to the data afterwards. However, the decline in the number of customers for each treatment and also for the control group is approximately the same for each group.
Table 24  Unique and total logins to the e-service

<table>
<thead>
<tr>
<th>Control group/ Treatment</th>
<th>Total N</th>
<th>Unique login rate N</th>
<th>Unique login rate %</th>
<th>Total login rate N</th>
<th>Total login rate %</th>
</tr>
</thead>
<tbody>
<tr>
<td>T0</td>
<td>1819</td>
<td>62</td>
<td>3.41</td>
<td>78</td>
<td>4.29</td>
</tr>
<tr>
<td>T1</td>
<td>1834</td>
<td>70</td>
<td>3.82</td>
<td>102</td>
<td>5.56</td>
</tr>
<tr>
<td>T1Repeat</td>
<td>1817</td>
<td>67</td>
<td>3.69</td>
<td>97</td>
<td>5.34</td>
</tr>
<tr>
<td>T2</td>
<td>1827</td>
<td>75</td>
<td>4.11</td>
<td>106</td>
<td>5.80</td>
</tr>
<tr>
<td>T3</td>
<td>1834</td>
<td>83</td>
<td>4.53</td>
<td>100</td>
<td>5.45</td>
</tr>
<tr>
<td>T4</td>
<td>1804</td>
<td>61</td>
<td>3.82</td>
<td>94</td>
<td>5.21</td>
</tr>
<tr>
<td>T5</td>
<td>1808</td>
<td>77</td>
<td>4.26</td>
<td>96</td>
<td>5.31</td>
</tr>
<tr>
<td>T6</td>
<td>1816</td>
<td>60</td>
<td>3.30</td>
<td>82</td>
<td>4.52</td>
</tr>
<tr>
<td>T7</td>
<td>1812</td>
<td>52</td>
<td>2.87</td>
<td>73</td>
<td>4.03</td>
</tr>
<tr>
<td>Total</td>
<td>16371</td>
<td>607</td>
<td>3.71</td>
<td>828</td>
<td>5.06</td>
</tr>
</tbody>
</table>

Pairwise tests of independence of unique login rates were used in order to confirm the associations between the control group and the treatment groups (Table 25). The Fisher’s Exact Probability Test was used since the cell sizes were small. Although the login rate of the control group appears to be lower than for most of the treatments, the tests show the difference is not significant. The control group and all treatments have the same effect on the login rate. Also no differences could be found between treatment groups.

Table 25  Pairwise tests of independence of unique login rates

<table>
<thead>
<tr>
<th>Control group/ Treatment</th>
<th>N</th>
<th>DF</th>
<th>Chi-square</th>
<th>P</th>
<th>phi</th>
<th>Association</th>
</tr>
</thead>
<tbody>
<tr>
<td>T0/T1</td>
<td>3653</td>
<td>1</td>
<td>.33</td>
<td>.57</td>
<td>.01</td>
<td>To=T1</td>
</tr>
<tr>
<td>T0/T1Repeat</td>
<td>3636</td>
<td>1</td>
<td>.13</td>
<td>.72</td>
<td>.00</td>
<td>To=T1Repeat</td>
</tr>
<tr>
<td>T0/T2</td>
<td>3646</td>
<td>1</td>
<td>1.04</td>
<td>.31</td>
<td>.02</td>
<td>To=T2</td>
</tr>
<tr>
<td>T0/T3</td>
<td>3653</td>
<td>1</td>
<td>2.70</td>
<td>.10</td>
<td>.03</td>
<td>To=T3</td>
</tr>
<tr>
<td>T0/T4</td>
<td>3623</td>
<td>1</td>
<td>.00</td>
<td>1.00</td>
<td>-.00</td>
<td>To=T4</td>
</tr>
<tr>
<td>T0/T5</td>
<td>3627</td>
<td>1</td>
<td>1.56</td>
<td>.21</td>
<td>.02</td>
<td>To=T5</td>
</tr>
<tr>
<td>T0/T6</td>
<td>3635</td>
<td>1</td>
<td>.01</td>
<td>.93</td>
<td>-.00</td>
<td>To=T6</td>
</tr>
<tr>
<td>T0/T7</td>
<td>3631</td>
<td>1</td>
<td>.69</td>
<td>.40</td>
<td>-.02</td>
<td>To=T7</td>
</tr>
</tbody>
</table>

However, it should be recognized that the number of observations is small and that a larger sample might have yielded significant differences. To conclude, the data indicated no differences between the different e-mail treatments and the control group in terms of unique login rates.

H1 stated that receiving e-mail of e-service benefits (T1-T7) leads to more consumers adopting the e-service than if they receive no e-mails (To). This hypothesis was rejected and H0 accepted. Communicating e-service benefits to consumers had no significant effect on their adoption behavior, measured as login, in this study.
5.4. Conclusions from the Main study

The Main study revealed several findings. Firstly, the findings showed that there was no difference in the effects between the treatments on logins to the e-service. The analysis shows that all three benefits have the same effect on both unique and total login rates. The login rates of treatments with one, two, and three e-service benefits were compared, but no significant differences between the treatments were detected. Using a repeat e-mail treatment had no increasing effect on the login rate, which is the ultimate measure of consumer trial of the service.

Nevertheless, there were differences in consumers' responses across the other adoption measures. For example, the findings of the login conversion rates revealed that treatment T1 with all three benefits was the best converter in terms of converting those who had clicked to the login page to login.

Overall, it should be recognized that the number of observations are small and that a larger sample might have yielded significant differences between the treatments. Login to the e-service is time consuming for the consumer, as the login access required both user ID and passwords, which the consumer had received when he/she bought the subscription. Both user ID and passwords could also be retrieved with the help of either bank or mobile identification. This means that the consumer could not login directly after clicking the e-mail links, as she/he had to either find or retrieve the user ID and the password. Thirdly, the login page of the telecom operator e-service did not present the benefits used in the e-mails. If the e-service benefits had been repeated on the login page, it might have had positive effects in terms of higher login rates as speculated below.

Secondly, the results in Table 26 of the CTR rates revealed that the e-service benefit "Access to accurate information" (T3) was the strongest in terms of consequent behavior, because it had both the highest unique and total benefit CTR. The e-service benefit "Easy to use" (T4) came second, followed by the benefit "Save time" (T2). Although the CTR shows only consumers' initial interest in the e-service, this interest may, at a later date, lead to trial. The results also showed that the e-mail treatment "Access to accurate information" (T3) is the most effective treatment both in terms of unique and total CTR, followed by "Easy to use" (T4), and "Access to accurate information and "Easy to use" (T6). The tests showed no significant association of the effect of the repeat e-mail treatment, on unique CTR.

<table>
<thead>
<tr>
<th>Benefit/treatment - Unique CTR</th>
<th>Association</th>
</tr>
</thead>
<tbody>
<tr>
<td>Access to accurate information (T3)*</td>
<td>T3&gt;T2 and T3&gt;T4</td>
</tr>
<tr>
<td>Easy to use (T4)*</td>
<td>T4&gt;T2 and T4&gt;T6</td>
</tr>
<tr>
<td>Easy to use and Access to accurate information (T6)</td>
<td>T6&lt;T4</td>
</tr>
<tr>
<td>Save time (T2)*</td>
<td>T2&lt;T3 and T2&lt;T4</td>
</tr>
<tr>
<td>One benefit/Two benefits (M1/M2)</td>
<td>M1&gt;M2</td>
</tr>
<tr>
<td>One benefit/Three benefits (M1/M3)</td>
<td>M1&gt;M3</td>
</tr>
<tr>
<td>Two benefits/three benefits (M2/M3)</td>
<td>M2=M3</td>
</tr>
</tbody>
</table>

*) one benefit
The findings also showed that there is a difference between the number of e-service benefits and the unique CTR. E-mails with one e-service benefit leads to a higher unique CTR than e-mails with two or three e-service benefits. However, presenting two e-service benefits leads to the same unique CTR as including three e-service benefits.
6  POST STUDY

This chapter presents the design and the findings from the Post study. The chapter begins with the survey design, including the data collection, the sample characteristics, the questionnaire design, and the measures. The second part presents the results of the Post study. The chapter ends with the findings from the Post study.

6.1.  Survey design

The Post study was also exploratory and it had three purposes. The first purpose was to find out whether the participants remembered having received e-mails, its relationship with e-service logins, and the intended future use of the e-service. As the e-mail tracking in the Main study experiment covered only e-service logins via the e-mails, the second purpose of the Post experiment survey was to investigate all e-service logins, including those done outside of the links in the e-mails. The third purpose of the Post study was to investigate if the e-mail communication had an effect on the participants’ perceptions of e-service benefits.

6.2.  Data collection and sample characteristics

The Post study was performed as an online survey. The e-mail invitation to the survey was sent to the same total sample of non-bounced emails as in the Main study (Chapter 5.) with one exception. The online survey invitation was also sent to the control group (T0), which did not receive any e-mail treatments.

A lucky draw with three gift cards each worth 100 € were used as an incentive. The survey was sent four days after the treatments (June 18, 2012 at 10.15 a.m.). A second reminder e-mail was sent a week later. The survey was closed a week after the reminder (July 2, 2012 at 12 a.m.) and was altogether open for two weeks. A total of 16697 customers received the invitation with the online survey link and 1659 (9.94 %) customers answered the survey. The sample size was large enough for factor analysis, according to the general rule of thumb of a minimum of 300 by Tabachnick and Fidell (2007). The Factor analysis was performed on a battery of 15 items measuring the perceptions of the three e-service benefits.

The participants were required to provide their name, e-mail addresses and their mobile phone numbers if they wanted to participate in the lucky draw. The online survey was sent with the e-mail marketing tool (Postiviidakko), which was also used in the experiment. The online survey tool used was Webropol (Version 2.0.) and the analysis tool SPSS (Mac Version 19).

6.2.1.  Questionnaire design and measures

The questionnaire (Appendix 10.) was divided into three parts: 1) Background information with demographic questions, 2) Information about how they remembered having received e-mails, e-service adoption and the probability to use the e-service in the future, and 3) Perceptions of e-service benefits. As the e-mail tracking in the Main study experiment covered only e-service logins via the experiment e-mails, the purpose
of the Post experiment survey was to cover all e-service logins, also those outside the tracked e-mails.

The first part of the questionnaire gathered background information such as age, gender and education. Another part of the questionnaire included questions on whether the customers remembered having received e-mail communication and if they had logged into the e-service.

The second part of the questionnaire also included a question about the probability to use the e-services in the future. The construct ‘probability to use the e-services in the future’ was measured as a five-point-scale ranging from “not at all probable” (1) to "very probable" (5).

The third part of the questionnaire included a battery of 15 items measuring the three e-service benefits used in the Main study treatments. The e-service benefit "Save time" included five measurement items, "Access to accurate information" included four items, and the e-service benefit "Easy to use" included six items. The constructs were measured as perceived benefits on five-point Likert scales ranging from “strongly disagree” (1), to “ strongly agree” (5) with a "do not know" option (6). If cases had missing data due to reasons such as choosing the "do not know" option, the data (pairwise) correlation matrix, without missing values, was analyzed.

The measures are listed in Table 27 with the respective sources. The first column lists the e-service benefits. The second column lists the scale items used for measuring the benefits. The third column provides example sources of the items, which were adapted from several previous studies and modified when needed.

The constructs were measured as perceived benefits on five-point Likert scales ranging from “strongly disagree” (1), to “ strongly agree” (5) with a "do not know" option (6).

*Time saving*

The first e-service benefit construct was “Time saving”. The following items, which were identical to the ones used in the Pilot study, were selected for measuring time savings; 1) I save time, 2) I can order the services fast, 3) I do not have to stand in line, 4) I can use the services any time and 5) I can order the services immediately. The scale items of the e-service benefit "Save time" were adapted from several previous studies (Davis 1989; Davis et al. 1989; Dabholkar 1996; Heinonen 2009; Langeard et al. 1981; Ledingham 1984; To et al. 2007; Venkatesh and Davis 2000).

*Access to accurate information*

The second e-service benefit was "Access to accurate information". The following items, which were identical to the ones used in the Pilot study, were selected for measuring perceived consumer benefits of information content and accessibility; 1) I can find my customer data, 2) I can find up-to-date information 3) I can find accurate information and 4) I can find good tips. The scale items for the e-service benefit "Access to accurate information" were adapted from previous studies (Davis 1989; Davis et al. 1989; Liu and Arnett 2000; Venkatesh and Davis 2000; Yang et al. 2005 and Swaid and Wigand 2009).
Easy to use

The third e-service benefit was “Easy to use”. The six scales used in measuring the e-service benefit “Easy to use were”; 1) It is easy to use, 2) It is easy to learn, 3) I can use easily when needed, 4) I am fully capable of using the e-service, 5) I am confident of my ability to use the service and 6) The user guides are clear. The Pilot study included three items (“It is easy to use”, “It is easy to learn” and “The user guides are clear”) but three additional items (“I can use easily when needed”, “I am fully capable of using the e-service”, “I am confident of my ability to use the service”) were added to the Post study survey in order to better cover the construct.

The scale item "Easy to use" was adapted from Davis (1989), Davis et al. (1989), Venkatesh and Davis (2000), Lori and Riemenschneider (2008). The scale item "Easy to learn" was adopted from Lori and Riemenschneider (2008). The scale item "I can use easily when needed" was adopted from To et al. (2007). The scale items "I am fully capable of using the e-service" and "I am confident of my ability to use the e-service" were adopted from Meuter et al. (2005). Finally, the scale item "The user guides are clear" was adopted from Heinonen (2009). The combined literature from the relevant disciplines indicates, that these are important easy to use related consumer benefits of e-services.
<table>
<thead>
<tr>
<th>Benefit construct</th>
<th>Scale item</th>
<th>Scale source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Value subdimension When-speediness</td>
<td>I can order fast</td>
<td>Heinonen 2009.</td>
</tr>
<tr>
<td>Speed of service delivery</td>
<td>I do not have to stand in line</td>
<td>Dabholkar 1996, Langeard et al. 1981, Ledingham 1984</td>
</tr>
<tr>
<td>Value sub-dimension When-temporal latitude, Convenience</td>
<td>I can use services 24/7</td>
<td>Heinonen 2009, To, Liao and Lin 2007.</td>
</tr>
<tr>
<td>Speed of service delivery</td>
<td>I can order immediately</td>
<td>Dabholkar 1996.</td>
</tr>
<tr>
<td>Usefulness-quality of information</td>
<td>I can find up-to-date information</td>
<td>Yang et al. 2005.</td>
</tr>
<tr>
<td>Usefulness-quality of information</td>
<td>I can find good tips</td>
<td>Yang et al. 2005.</td>
</tr>
<tr>
<td>Ease of use</td>
<td>It is easy to use</td>
<td>Davis 1989, Davis, Bagozzi and Warshaw 1989, Venkatesh and Davis 2000, Lori and Riemenschneider 2008.</td>
</tr>
<tr>
<td>Ease of use</td>
<td>It is easy to learn</td>
<td>Lori and Riemenschneider 2008.</td>
</tr>
<tr>
<td>Ability</td>
<td>I can use easily when needed</td>
<td>To, Liao and Lin 2007.</td>
</tr>
<tr>
<td>Ability</td>
<td>I am fully capable of using the e-service</td>
<td>Meuter et al. 2005.</td>
</tr>
<tr>
<td>Ability</td>
<td>I am confident of my ability to use the e-service</td>
<td>Meuter et al. 2005.</td>
</tr>
<tr>
<td>Value subdimension How-Process easiness/functionality</td>
<td>The user guides are clear</td>
<td>Heinonen 2009.</td>
</tr>
</tbody>
</table>
6.3. Findings from the Post study

First, the descriptive statistics are presented. Second, the effects of the e-mail communication on behavior are analyzed. Third, the results of the e-service benefit measurements are presented. The chapter ends with the conclusions from the Post study.

6.3.1. Descriptive statistics

To gain background knowledge, questions were asked regarding the telecom e-service usage habits of the respondents. The most important findings are presented here but all descriptive statistics of the Post study can be found in Appendix 11.

The age ranged between 18 and 88 years, with a mean of 47 years. This was a bit higher than the mean age of the total sample, which was 44 years. 62.9% of the respondents were male and 37.1% female. Since the gender distribution was approximately equal in the total sample, men are overrepresented among the respondents.

The respondents were asked to rank their preferred service channels from one (most preferred) to six (least preferred). Table 28 shows the channel preferences in rank order (how many times each channel was ranked as number one). The phone was the most preferred service channel with e-mails in second place. Shops, the website and e-service came on the third, fourth and fifth places. Using the chat function was ranked as the least preferred channel.

Table 28  Channel preference

<table>
<thead>
<tr>
<th>Channel preference</th>
<th>N</th>
<th>Rank order</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phone</td>
<td>1606</td>
<td>1</td>
</tr>
<tr>
<td>E-mail</td>
<td>1584</td>
<td>2</td>
</tr>
<tr>
<td>Shop</td>
<td>1546</td>
<td>3</td>
</tr>
<tr>
<td>Website</td>
<td>1545</td>
<td>4</td>
</tr>
<tr>
<td>E-service</td>
<td>1540</td>
<td>5</td>
</tr>
<tr>
<td>Chat</td>
<td>1513</td>
<td>6</td>
</tr>
</tbody>
</table>

6.3.2. Effect of e-mail communication

The first purpose of the Post study was to find out whether the participants remembered having received e-mails and its relationship with e-service logins and the probability to use the e-service. The following analyses represent consumers of the treatments T1-T7, who received e-mail treatments in the Main study (excluding the control group).

In order to investigate the effect of the e-service benefit e-mails, the participants were asked 1) if they remembered receiving e-mails about the e-service, 2) if they had logged into the e-service, and 3) the probability to use the e-service in the future.
Table 29 shows the distribution of respondent logins to the e-service. 25.7% of the respondents who had received an e-mail had logged into the e-service and 74.3% had not logged in.

<table>
<thead>
<tr>
<th>Has logged into the e-service</th>
<th>Has not logged into the e-service</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>N 341</td>
<td>986</td>
<td>1327</td>
</tr>
<tr>
<td>% 25.7 %</td>
<td>74.3 %</td>
<td>100.0 %</td>
</tr>
</tbody>
</table>

61.4% of the respondents remembered receiving e-mail about the e-service (Table 30).

<table>
<thead>
<tr>
<th>Remember receiving e-mail</th>
<th>Does not remember receiving e-mail</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>N 815</td>
<td>512</td>
<td>1327</td>
</tr>
<tr>
<td>% 61.4 %</td>
<td>38.6 %</td>
<td>100.0 %</td>
</tr>
</tbody>
</table>

A pairwise test of independence was performed between remembering receiving e-mail and logging into the e-service (Table 31). A Chi-square test for independence (Yates Continuity Correlation) indicated a significant relationship between remembering receiving e-mail about the e-service and logging in to the e-service, Chi-square (1, n=1327) = .19, p=.00. The effect size phi=.19 showed a small effect using Cohen’s (1988) criteria. Of those who had logged into the e-service, a larger part remembered receiving e-mail (77.1%) compared to those who did not remember (22.9%). However, of those who had not logged in 56.0% did remember the e-mail whereas 44.0% of those who had not logged in did not remember the e-mail.

Table 31 Cross-tabulation of remembering the e-mail and logins

<table>
<thead>
<tr>
<th>Login</th>
<th>Remember e-mail</th>
<th>Does not remember</th>
<th>Does not remember</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Login</td>
<td>Has logged in</td>
<td>Count</td>
<td>263</td>
<td>78</td>
</tr>
<tr>
<td></td>
<td>%</td>
<td>77.1%</td>
<td>22.9%</td>
<td>100.0%</td>
</tr>
<tr>
<td></td>
<td>Has not logged in</td>
<td>Count</td>
<td>552</td>
<td>434</td>
</tr>
<tr>
<td></td>
<td>%</td>
<td>56.0%</td>
<td>44.0%</td>
<td>100.0%</td>
</tr>
<tr>
<td>Total</td>
<td>Count</td>
<td>815</td>
<td>512</td>
<td>1327</td>
</tr>
<tr>
<td></td>
<td>%</td>
<td>61.4%</td>
<td>38.6%</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

Participants were also asked for the probability to use the e-service in the future (see Table 32) with a scale from one (not at all probable) to five (very probable). The mean was 3.30 for all the respondents, but 3.45 for those who remembered the e-mail and 3.15 for those who did not remember the e-mail.
Table 32  Does remember/does not remember having received e-mail and probability to use the e-service in the future

<table>
<thead>
<tr>
<th></th>
<th>Does remember receiving e-mail</th>
<th>Does not remember receiving e-mail</th>
<th>Total</th>
<th>t-value</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>814</td>
<td>512</td>
<td>1326</td>
<td></td>
<td></td>
</tr>
<tr>
<td>%</td>
<td>61.4%</td>
<td>38.6 %</td>
<td>100 %</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Probability to use the e-service in the future</td>
<td>3.45</td>
<td>3.15</td>
<td>3.30</td>
<td>5.17</td>
<td>.00</td>
</tr>
</tbody>
</table>

An independent-samples t-test showed a significant difference between the probability scores, with higher scores for those who remembered receiving e-mail about the e-service (M=3.45, SD= 1.04) than for those who did not remember (M=3.15, SD= 1.06); \(t(1070) = 5.17, p= .00\), two-tailed). The magnitude of the difference (mean difference = .31, 95% CI: .19 to .43) was small (eta squared = .024).

6.3.3. Comparison of login data between the treatments and the control group

As the e-mail tracking in the Main study experiment covered only e-service logins via the e-mails, the second purpose of the Post experiment survey was to investigate all e-service logins, including those done outside of the links in the e-mails. The online survey was also sent to the control group (To), which had not received any e-mail in the experiment. The Post study survey login data of the groups T1-T7 were compared with the To control group (Table 33).

Respondents were asked if they had logged into the e-service. A Chi-square test for independence (Pearson Chi-square) was performed between each of the treatments T1-T7, and the control group To, for the login data. There was a significant association only between T1Repeat and To and Login data, Chi-square (1, n=251) = .18, \(p= .00\), \(\phi = .18\). The effect shows a small effect using Cohen’s (1988) criteria. No significant associations between To and the other treatments were found in terms of Login to the e-service. This means that, except for the repeat treatment, the treatments did not result in a significant increase in logins.
<table>
<thead>
<tr>
<th>Group</th>
<th>Has logged in</th>
<th>Has not logged in</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>T0</td>
<td>N 17</td>
<td>79</td>
<td>96</td>
</tr>
<tr>
<td>%</td>
<td>17.7%</td>
<td>82.3%</td>
<td>100.0%</td>
</tr>
<tr>
<td>T1</td>
<td>N 47</td>
<td>131</td>
<td>178</td>
</tr>
<tr>
<td>%</td>
<td>26.4%</td>
<td>73.6%</td>
<td>100.0%</td>
</tr>
<tr>
<td>T1Repeat</td>
<td>N 53</td>
<td>102</td>
<td>155</td>
</tr>
<tr>
<td>%</td>
<td>34.2%</td>
<td>65.8%</td>
<td>100.0%</td>
</tr>
<tr>
<td>T2</td>
<td>N 39</td>
<td>128</td>
<td>167</td>
</tr>
<tr>
<td>%</td>
<td>23.4%</td>
<td>76.6%</td>
<td>100.0%</td>
</tr>
<tr>
<td>T3</td>
<td>N 47</td>
<td>128</td>
<td>175</td>
</tr>
<tr>
<td>%</td>
<td>26.9%</td>
<td>73.1%</td>
<td>100.0%</td>
</tr>
<tr>
<td>T4</td>
<td>N 37</td>
<td>114</td>
<td>151</td>
</tr>
<tr>
<td>%</td>
<td>24.5%</td>
<td>75.5%</td>
<td>100.0%</td>
</tr>
<tr>
<td>T5</td>
<td>N 40</td>
<td>140</td>
<td>180</td>
</tr>
<tr>
<td>%</td>
<td>22.2%</td>
<td>77.8%</td>
<td>100.0%</td>
</tr>
<tr>
<td>T6</td>
<td>N 40</td>
<td>135</td>
<td>175</td>
</tr>
<tr>
<td>%</td>
<td>22.9%</td>
<td>77.1%</td>
<td>100.0%</td>
</tr>
<tr>
<td>T7</td>
<td>N 39</td>
<td>109</td>
<td>148</td>
</tr>
<tr>
<td>%</td>
<td>26.4%</td>
<td>73.6%</td>
<td>100.0%</td>
</tr>
<tr>
<td>Total</td>
<td>N 359</td>
<td>1066</td>
<td>1425</td>
</tr>
<tr>
<td>%</td>
<td>25.2%</td>
<td>74.8%</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

6.3.4. **E-service benefit measures**

The third purpose of the Post study was to investigate if the e-mail communication had an effect on the participants’ perceptions of e-service benefits. The third part of the questionnaire included a battery of 15 items measuring the three e-service benefits, which were used in the Main study. The following analyses represent consumers of the treatments T1-T7, who received e-mail treatments in the Main study and answered the Post study survey.

The 15 benefit items were subjected to principal components analysis (PCA). Appendix 12 lists each item with the mean, standard deviation, correlation, skewness and kurtosis. Prior to performing PCA, the suitability of data for factor analysis was assessed. Inspection of the correlation matrix revealed many coefficients of above r = .30. (Appendix 13.) The Kaiser-Meyer-Olkin (KMO) value of .936 exceeded the recommended value of .60 (Kaiser and Rice, 1974) and Bartlett’s Test of Sphericity (Bartlett 1954) reached statistical significance (p = .00), supporting that the data were suitable for factor analysis. An item was judged to load on a factor if the loading on that factor was above 0.50. Coefficients under .3 were suppressed for greater clarity and to maintain only items with significant loadings, according to the recommendation of
Pallant (2001). The rotated component matrix for the principal component analysis with a Varimax rotation with three components in Table 35 show that all items load higher than .50 of their respective construct, which provides support for a high degree of individual item reliability (Hulland 1999).

Table 34 shows the rotated component matrix of the initial PCA with Varimax rotation and eigenvalue 1 as the cutoff point, which revealed the presence of two components, explaining 60.71% and 10.32% of the variance respectively. The two components together explain 71.03% of the variance. The two e-service benefit items "Save time" and "Access to accurate information" loaded on the same construct, whereas "Easy to use" formed a separate construct.

<table>
<thead>
<tr>
<th>E-service benefit items</th>
<th>Component loadings</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
</tr>
<tr>
<td>The users guides are clear</td>
<td>.494</td>
</tr>
<tr>
<td>It is easy to learn</td>
<td>.440</td>
</tr>
<tr>
<td>It is easy to use</td>
<td>.481</td>
</tr>
<tr>
<td>I save time</td>
<td>.639</td>
</tr>
<tr>
<td>I do not have to stand in line</td>
<td>.806</td>
</tr>
<tr>
<td>I can use services 24/7</td>
<td>.848</td>
</tr>
<tr>
<td>I can order immediately</td>
<td>.845</td>
</tr>
<tr>
<td>I can order fast</td>
<td>.816</td>
</tr>
<tr>
<td>I can find my customer data</td>
<td>.678</td>
</tr>
<tr>
<td>I can find accurate information</td>
<td>.687</td>
</tr>
<tr>
<td>I can find up-to-date information</td>
<td>.772</td>
</tr>
<tr>
<td>I can find good tips</td>
<td>.663</td>
</tr>
<tr>
<td>I am fully capable of using the e-service</td>
<td></td>
</tr>
<tr>
<td>I am confident of my capability of using the e-service</td>
<td></td>
</tr>
<tr>
<td>I can easily use the e-service when needed</td>
<td></td>
</tr>
</tbody>
</table>

Variance explained (71.03%)  60.71%  10.32%

Extraction Method: Principal Component Analysis.
Rotation method: Varimax
Rotation converged in 3 iterations.

However, an inspection of the screeplot (Appendix 14.) revealed a break after the third component, suggesting that a three-component solution would fit the data. Using Catell’s (1966) scree test, a solution with three components was sought.

The rotated component matrix for the second principal component analysis (Table 35), with Varimax rotation revealed the presence of two components with eigenvalues
exceeding 1 and a third component “Access to accurate information” contributing 5.08% with an eigenvalue of 0.762.

Although there seems to be a close relationship between accuracy of information and saving time, a three-factor solution separates them into two constructs. The fact that the third component (Access to accurate information) had an eigenvalue <1, raises concerns about the independence of the construct, but it was decided to keep the three factors based on the scree-plot and face validity of the solution, in addition to the fact that the Main study had used the constructs separately.

<table>
<thead>
<tr>
<th>E-service benefit items</th>
<th>Component loadings</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Save Time</td>
</tr>
<tr>
<td>The users guides are clear</td>
<td>.524</td>
</tr>
<tr>
<td>It is easy to learn</td>
<td>.548</td>
</tr>
<tr>
<td>It is easy to use</td>
<td>.515</td>
</tr>
<tr>
<td>I save time</td>
<td>.644</td>
</tr>
<tr>
<td>I do not have to stand in line</td>
<td>.813</td>
</tr>
<tr>
<td>I can use services 24/7</td>
<td>.779</td>
</tr>
<tr>
<td>I can order immediately</td>
<td>.726</td>
</tr>
<tr>
<td>I can order fast</td>
<td>.715</td>
</tr>
<tr>
<td>I can find my customer data</td>
<td>.565</td>
</tr>
<tr>
<td>I can find accurate data</td>
<td></td>
</tr>
<tr>
<td>I can find up-to-date information</td>
<td></td>
</tr>
<tr>
<td>I can find good tips</td>
<td></td>
</tr>
<tr>
<td>I am fully capable of using the e-service</td>
<td>.759</td>
</tr>
<tr>
<td>I am confident of my capability to use the e-service</td>
<td>.857</td>
</tr>
<tr>
<td>I can easily use when needed</td>
<td></td>
</tr>
<tr>
<td>Variance explained</td>
<td>60.71%</td>
</tr>
</tbody>
</table>

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.
Rotation method: Varimax
Rotation converged in 6 iterations.

Three items loaded on both "Save time" and "Easy to use". Thus if an e-service is easy to use it saves time. Further, the item "I can find my customer data" loaded with "Save time", which can be explained with that finding customer data can also save consumer time. However, the factor analysis raises a concern of discriminant validity, and whether the components are truly distinct from each other in customers’ minds. Items with high cross-loadings should be removed. Alternatively, one could use Confirmatory
Factor Analysis instead of PCA to test the discriminant validity of the constructs. This was not feasible in this case. Likewise, logistic regression analysis could be used to estimate probabilities of the likelihood to log in depending on whether the respondent had received e-mail or not. Unfortunately, it was not possible for me to get the skills needed for this kind of analysis within a feasible time span.

In view of the fact that the Post study was performed as an exploratory study to get additional information to the Main study, it was deemed appropriate to use three factors for the current purpose. Composite reliability was used to assess the internal consistency of the items hypothesized to measure a single construct (Fornell and Larcker 1981). Inspection of the individual item loadings presented in Table 35 show that all items load higher than .50 on their respective construct, which provides support for a high degree of individual item reliability (Hulland 1999). The factor analysis can be considered internally consistent, as in all instances the composite reliability values exceed the .70 guideline suggested by Nunnally and Bernstein (1994). The Cronbach's alphas were good for all three items Save time (0.910), Easy to use (0.921), and Access to accurate information (0.898). All items were composed and averaged to provide single composite scores.

Thus the final solution was a 3-factor solution: 1) "Save time", 2) "Access to accurate information" and 3) "Easy to use" with all 15 items.

6.3.5. Comparison of login data and perceived benefits

Since e-services are supposed to provide benefits to consumers, analyses were performed on differences in perceived benefits between those who had logged into the e-service and those that had not. The following analyses represent customers of the treatments T1-T7, who received e-mail treatments in the Main study (excluding the control group) and answered the Post study online survey.

An independent-samples t-test was conducted to compare the benefit construct means for those who had logged into the e-service and those who had not (Table 36). A t-test confirmed a significant difference between the benefit construct means for those who had logged into the e-service and those who had not.
### Table 36  T-test on differences in benefit constructs of e-service login

<table>
<thead>
<tr>
<th>Benefit construct</th>
<th>Logged in</th>
<th>Not logged in</th>
<th>N</th>
<th>t-value</th>
<th>Df</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Save time benefit construct</strong></td>
<td>263</td>
<td>184</td>
<td>447</td>
<td>3.26</td>
<td>445</td>
<td>.00</td>
</tr>
<tr>
<td>Mean</td>
<td>3.92</td>
<td>3.65</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>St.Dev.</td>
<td>0.80</td>
<td>0.95</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Access to accurate information benefit construct</strong></td>
<td>252</td>
<td>183</td>
<td>435</td>
<td>2.20</td>
<td>433</td>
<td>.03</td>
</tr>
<tr>
<td>Mean</td>
<td>3.73</td>
<td>3.54</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>St.Dev.</td>
<td>0.86</td>
<td>0.90</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Easy to use benefit construct</strong></td>
<td>276</td>
<td>166</td>
<td>442</td>
<td>3.31</td>
<td>440</td>
<td>.00</td>
</tr>
<tr>
<td>Mean</td>
<td>3.50</td>
<td>3.21</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>St.Dev.</td>
<td>0.85</td>
<td>0.93</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

There was a significantly higher mean of "Save time" for those who had logged into the e-service (M=3.92, SD= .80) compared with those who had not (M=3.65, SD=.95; t (445) = 3.26, p=.00, two-tailed). The magnitude of the differences in the means (mean difference = .27, 95% CI: .11 to .43) was small (eta squared = .02).

Furthermore, there was a significantly higher mean of “Access to accurate information” for those who had logged into the e-service compared with those who had not (M=3.73, SD= .86) compared with those who had not logged in (M=3.54, SD= .90; t (433) = 2.20, p= .03, two-tailed). The magnitude of the differences in the means (mean difference = .19, 95% CI: .02 to .36) was small (eta squared = .01).

Finally, those who had logged into the e-service (M=3.50, SD= .85) had a significantly higher mean of "Easy to use" benefit compared with those who had not logged in (M=3.21, SD= .93; t (440) = 3.31, p=.00, two-tailed). The magnitude of the differences in the means (mean difference = .29, 95% CI: .12 to .46) was small (eta squared = .02).

#### 6.3.6. The effect of treatments on e-service benefit perceptions

To investigate if the communicated benefits had an effect on customers’ perceptions of the benefits, a One-way Anova was performed on the data. The treatments were used as the independent variable (factor) and the three perceived customer benefit construct means were used as the dependent variables. The construct means and F-values are displayed in Table 37.
Table 37  One-way Anova on the effect of treatment on the perceived benefits

<table>
<thead>
<tr>
<th>Benefit construct means/Treatments</th>
<th>T0</th>
<th>T1</th>
<th>T1 Repeat</th>
<th>T2</th>
<th>T3</th>
<th>T4</th>
<th>T5</th>
<th>T6</th>
<th>T7</th>
<th>F-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Save time</td>
<td>3.87</td>
<td>3.77</td>
<td>3.87</td>
<td>3.72</td>
<td>3.76</td>
<td>3.85</td>
<td>3.90</td>
<td>3.84</td>
<td>3.71</td>
<td>0.38</td>
</tr>
<tr>
<td>Access to accurate information</td>
<td>3.35</td>
<td>3.51</td>
<td>3.75</td>
<td>3.64</td>
<td>3.70</td>
<td>3.70</td>
<td>3.64</td>
<td>3.63</td>
<td>3.63</td>
<td>0.73</td>
</tr>
<tr>
<td>Easy to use</td>
<td>3.40</td>
<td>3.32</td>
<td>3.39</td>
<td>3.27</td>
<td>3.44</td>
<td>3.44</td>
<td>3.53</td>
<td>3.91</td>
<td>3.31</td>
<td>1.70</td>
</tr>
</tbody>
</table>

The construct means were calculated only for those respondents that had completed all the e-service benefit questions. Hence, the total number of observations were N=470 for "Save time", N=453 for "Access to accurate information" and N=459 for "Easy to use". Responses that included missing values or "do not know" were thus removed.

The observations per treatment ranged from 23 (T0) to 67 (T3). There was homogeneity of variance between all the groups for "Save time" (Levene= 1.34, p= .22), and "Access to accurate information" (Levene=1.06, p= .39), but not for Easy to use (Levene 2.14, p= .03).

As indicated by the F-values in the table none of the models were significant. Thus the treatments had no effect on the perceived benefits of "Save time" (F = .38, p= .93), "Access to accurate information" (F = .73, p= .66), or Easy to Use (F=1.70, p= .10).

The results show that none of the treatments led to higher perceived benefits and that none of the treatments performed better than the control group that received no e-mail communication.

6.3.7. Conclusions from the Post study

The Post study had three purposes. The first purpose was to find out whether the participants remembered having received e-mail communication and its relationship with e-service logins and the probability to use the e-service. A Chi-square test for independence indicated a significant relationship between remembering receiving e-mail about the e-service and logging in to the e-service. Further, an independent-samples t-test showed a significant difference between the probability scores, with higher scores for those who remembered receiving e-mail about the e-service than for those who did not remember receiving e-mail. This would indicate that the e-mail might have had an impact on both login rates and the future probability to login to the e-service. Thus, it could also indicate that because they have logged into the e-service, they might be more interested in e-services in the first place, or they might have been more satisfied with using the e-service.

As the e-mail tracking in the Main study experiment covered only e-service logins via the e-mails, the second purpose of the Post experiment survey was to investigate all e-service logins, also those done outside the e-mails. Customers were asked whether they had logged into the e-service. No significant associations between T0 and the other treatments were found in terms of login to the e-service except for the repeat treatment. This means that the treatments did not result in a significant increase in logins except in the case of the treatment with all three benefits, which was sent twice. This would
indicate that, using a repeat e-mail, results in a higher login rate than using only one e-mail message.

The third purpose of the Post study was to investigate if the treatments had an effect on the participants’ perceptions of e-service benefits.

Firstly, the results from the factor analysis confirmed that the benefit structures used in the Main study were supported. Since e-services are supposed to provide benefits to the using consumers, analyses were performed to detect differences in perceived benefits between those who had logged into the service and those that had not. The results showed that the perceived benefit construct means for all three e-service benefits were higher for those who had logged into the e-service than for those who had not logged in. This may be due to using the service or to factors that affected the adoption of the service. First, it could indicate that because they have logged into the e-service, their perception about the benefits of the e-service became higher because they had experienced the actual benefits. A second explanation is that these consumers are more interested in e-services to begin with, and therefore more positive towards e-service benefits in general.

Finally, the results of the Anova analysis showed that the treatments did not explain differences in perceived benefits. Thus the e-mail communication did not raise consumers’ perceived benefits in comparison with the control group.
7 CONCLUSIONS

The following chapter concludes the findings of the thesis. Firstly, the contributions of the study are discussed. Secondly, some practical implications for managers are outlined. Thirdly, I will critically review the thesis, focusing on its limitations. Fourthly, an outline of topics for further research is presented. The chapter ends with concluding remarks.

7.1 Discussion of contribution

The point of departure of this thesis was that companies increasingly introduce e-services as alternative means for consumers to interact with the company, especially regarding supporting services. Nevertheless, consumer adoption rates for e-services have remained smaller than expected and there is clearly a lack of both understanding and practice of what drives and how to drive consumers to use e-services. The literature review demonstrated comprehensive research on the underlying benefits that influence consumer adoption of e-services. However, there is a lack of understanding of how these findings could be used to encourage e-service adoption. Therefore, this thesis set out to answer whether communicating the benefits can drive e-service adoption, which was operationalized as the click-through rate and the first login to the e-service.

More specifically, the purpose of this study was to investigate the effect of communicating e-service benefits to consumers through e-mails. The assumed premise was that communicating e-service benefits through e-mails would have a positive effect on e-service adoption. The literature review did provide evidence of the importance of e-service benefits, but no research has been carried out to investigate if communicating e-service benefits to consumers either via e-mails or any other channels could positively affect e-service adoption. Thus the contribution of this study is in increasing theoretical and empirical understanding of the behavioral effect of communicating e-service benefits through e-mails.

The main findings of the study will be discussed as providing two contributions. Firstly, the findings contribute to the e-service adoption literature by exploring whether communicating e-service benefits through e-mails can influence e-service adoption, measured as real behavior. Secondly, the findings contribute to the marketing communication literature by examining the effectiveness of e-mails with e-service benefits as the stimuli.

The behavioral effect of communicating consumer e-service benefits through e-mails.

The results contradict the assumed view that communicating benefits to consumers will increase e-service adoption. The Main study rejected this hypothesis and accepted the null hypothesis that the communication of e-service benefits through e-mail has no effect on the login to the e-service. There was no significant difference in logins between the control group and the treatment groups, even though the number of logins for the control group appeared to be smaller. Overall, it may be noted also that the logins formed a small percentage of all new customers. The similarity between the logins for the control group and treatment groups suggest that other factors than communicated benefits explain better who logs in and who does not. It is possible that all of these consumers have some characteristics in common, which were not captured by the current studies, such as familiarity with electronic services, having higher
technology-readiness, or possessing some other innovator characteristics that in past research have been used to explain early consumer adoption of goods and services. This thesis reveals that it is difficult to impact on consumer adoption on e-services by communication alone, at least not communication of e-service benefits. It is possible that more concrete benefits are needed, such as monetary benefits, for e-services to be perceived as attractive.

Indeed, there were no significant differences between the login rate of e-mails with one, two, or three e-service benefits. Furthermore, using a repeat e-mail had no increasing effect on the login rate. However, the results from the Post study indicate that using a repeat e-mail, results in a higher login rate than using only one e-mail message in the long term. A more pessimistic interpretation would be that because they have replied to the online survey, they are more interested in e-services in the first place, and the results are due to response bias.

Some results from the Post study are worth mentioning. The Post study showed that of those who had logged into the e-service, a larger part remembered having received e-mail (77.1%) than those who did not remember (22.9%). The results indicate a relationship between remembering the e-mail and logging into the service, thus demonstrating that there might be a lagged effect of the e-mails. However, it could also indicate that because they have logged into the e-service, they are more interested in e-services in the first place, or perhaps that they have been more satisfied with using the e-service. One might also draw the conclusion that the results from the Post study show how the results are affected by who answers the survey. The experimental study provides the most reliable results on actual behavior, whereas the Post study provides perceptual answers from a smaller sample.

It should be recognized that the number of observations are small and that a larger sample might have yielded significant differences in the treatment effects. Furthermore, login to the e-service is time consuming for the customer. The login access was based on both user ID and passwords, which the customer had received when he/she bought the subscription. Both user ID and passwords could also be retrieved with the help of either bank or mobile identification. This means that the customer could not login directly after clicking the e-mail links, as she/he had to either find or retrieve the user ID and the password. Consequently, it is possible that if the login to the e-service were less time consuming, the login rate would have been higher. Further, the login page of the telecom operator e-service did not include the benefit messages used in the e-mails. If the e-service benefits had been repeated on the login page, it might have had positive effects in terms of higher login rates.

The results of this study also show that there are differences between the effect of communicating e-service benefits, in terms of individual click-through rates of each benefit (e-service benefit interest). The CTRs were interpreted as showing an interest wanting to know more, and represented an attitudinal dimension of adoption. The CTRs revealed that the e-service benefit "Access to accurate information" was the strongest in terms of creating interest, followed by "Easy to use", and "Save time". The results also showed that the e-mail "Access to accurate information" is the most effective e-mail both in terms of unique and total CTR, followed by "Easy to use", and "Access to accurate information" together with "Easy to use". The tests showed no significant effect of the repeat e-mail, compared with other treatments, on unique CTR.

The findings also showed that there is an association between the number of e-service benefits and the unique CTR. E-mails with one e-service benefit lead to a higher unique
CTR than e-mails with two or three e-service benefits. However, presenting two e-service benefits lead to the same unique CTR as including three e-service benefits. This suggests that communicating only one benefit is more persuasive than listing many. One benefit may be perceived as more credible, whereas listing many may look like any company ad. This can only be speculated upon since no data are available on how the consumers perceived the messages.

The Post study also investigated if the e-mail communication had an effect on the participants’ perceptions of e-service benefits. The results revealed that the perceived benefit construct means for all three e-service benefits were higher for those who had logged into the e-service than for those who had not logged in. There are two possible explanations: either they were affected by the e-mail communication, or because they have logged into the e-service, their perception about the benefits of the e-service were higher. In addition, another explanatory factor could be having more e-service experience and, hence, perceiving the service as easier, time saving and offering the access to accurate information.

The study shows that there are differences between the CTR and the login rate within the different phases of the adoption process. A combination (conversion rate) of the unique CTRs and unique logins was used as the conversion rate of the treatments. The conversion rate was calculated as the percentage share of unique logins on unique CTRs. The conversion rate shows the login rate of the e-mails at the second stage of the conversion process. For example, even if both the CTRs and login rates of the e-mail with the one benefit "Access to accurate information" were higher than the corresponding values for the e-mail with all three messages, the conversion rate of the e-mail with the three benefits was higher than the conversion rate for the one benefit e-mail. This kind of information complicates the conclusions that can be drawn on which treatment is the most effective, if any. The effectiveness depends on what one measures, and what the goal of a campaign is, to raise interest and awareness, or to convert customers into users. The results provide guidelines to the planning of benefits used during the different stages of the adoption process, for the focal company, as it shows that the consumer interest and perception of the different e-service benefits can vary during the different stages of the e-service adoption process.

So far, there has been limited attention paid to the effect of marketing communication on new service or e-service adoption (Prins and Verhoef 2007). Research has also called for special attention to the content and design issues of online e-service communication (Berthon et al. 1996; Ju-Pak 1999; Newhagen and Rafaeli 1996). E-service communication can be seen as a way to increase both e-service accessibility and usage by supporting the consumer at the different stages of the e-service adoption process. The process of communicating e-services should cover the following stages of the adoption process 1) to help consumers be aware of and find the e-service, 2) to start using the e-service, 3) to assist consumers through the service process and 4) to activate and support further use of the e-service. Thus, this thesis has demonstrated the use and effect of e-mails on the two first steps of this process: 1) to find the e-service, 2) to start using the e-service.

Previous research shows that perceived benefits affect customer satisfaction and the intentions to use a service (Meuter 2000; 2005). Past studies have emphasized the importance of perceived benefits and encouraged companies to pay more attention to the benefits that they offer their online users. Previous research (Reinders, Dabholkar and Frambach 2008) also shows that forced use leads to negative attitudes towards using e-services as well as toward the service provider. If companies cannot or do not
want to force their customers to use the e-service, and when there are few, if any, monetary benefits to the customers, there are few options for how to convince customers to try the e-service.

**The effectiveness of e-mails with e-service benefits as the stimuli.**

This study has demonstrated how behavioral measurement tracking and testing with different treatments and links can address fundamental issues of both theoretical and practical importance in relation to both e-mail and website response measurement. The experiment tested the effect of both the content and of repeating a mailing. The empirical data from the experiment showed that click-throughs are a valid mechanism for driving traffic to e-service login pages. They are also behavioral and therefore an accountable measure for e-service marketing activities.

Previous research within marketing communication has mainly measured either cognitive or affective responses. The behavioral effect in terms of click-through rates has scarcely been used within the academic research on communication. Some research exists, for example regarding the effect of banner ads (e.g. Briggs and Hollis 1997; Dahlen et al. 2000; Dahlen 2001). However, the majority of research provides indirect evidence, such as surveys or laboratory experiments where the focus has been on understanding the effect of a single online element on the awareness stage. This study is among the first to test in vivo, actual consumer online behavior after receiving e-service communication.

Previous research in e-mail marketing has showed that e-mail marketing is an effective tool for communicating with customers. E-mails give the customer the opportunity to choose the information they need and when they need it (Godin 1999). Although both academic and managerial literature show that e-mails have many benefits and that appropriate e-mail content plays a key role in advertising effectiveness (e.g. Carmichael 2000; Teinze et al. 2002; Waring and Martinez 2002; Du Frene et al. 2005), no studies of e-service related e-mail content could be found. Thus, this thesis has showed that e-mails with a varying content can be used in order to increase consumer perceptions of e-service benefits and the probability to use the service in the future.

The experiment in the Main study led to many questions and choices in terms of tracking, measurement and how to test both the benefits and the treatments overall, as used in the experiment. CTR and login data provide only nominal data (the customer either clicks or not), which limits the number of tests that can be used. However, whereas customer perception data provide the possibility for sophisticated analysis, it is not a reflection of the customer’s real behavior. In addition, in the focal data, combining the individual data from a sent e-mail to a possible login response was a challenge in itself, showing that such data collection requires time, planning and good technical programs. The methodological information provided in this thesis will be helpful for both scholars and practitioners in helping them to track and to find out the optimal content and the correct frequency of e-mails.

The literature on how e-service providers could increase the use of e-service and reduce resistance by informing and communicating the benefits of the services are scarce. This study has contributed incremental insight and advanced the theoretical understanding of e-service communication by contributing both to the e-service adoption literature and the marketing communication literature.

This study has also contributed to the utility of theoretical understanding. Moreover, studies within marketing mainly collect data by surveys using subjective rather than
objective measures of the dependent variables. This study is scientifically useful by showing how behavioral measurement tracking can be used to improve the current research practice. Consequently, the study has also addressed fundamental issues of both theoretical and practical importance for both e-mail and website response measurement.

7.2. Managerial implications

The development of technology and increased labor costs have made digital service channels increasingly attractive for organizations as they can contribute to significant cost savings. However, consumer adoption rates for e-services have remained smaller than expected. There is clearly a lack of both understanding and practice of what drives and how to drive consumers to use e-services. Thus, several managerial implications can be drawn from this study.

Firstly, managers can be advised to use e-service communication in order to increase both e-service accessibility and usage by supporting the consumer at the different stages of the e-service adoption process. The limited amount of both time and effort consumers are ready to devote to an e-service makes e-service communication even more critical to a firm. Also, the more complex the service is the more time and effort should be put into assisting the consumer. Although this study was delimited to e-mail as the communication channel, it is important to note that the e-service communication should cover all channels involved in consumer communication and the service itself. As this study showed, the login page to the e-service has an essential role in this kind of communication.

Secondly, managers can be advised to motivate the consumer to use the e-service. The unique characteristics of the online medium, such as high-speed interactivity, short exposure time and lack of space require fast, easy and motivating communication from the company. This study has showed that there are several separate research streams which all explain the underlying factors of e-service adoption. Thus, only one of the research streams offers usable tools for communicating the e-service.

However, the study shows that the factors that are said to motivate consumers based on surveys of existing users may not be the factors that motivate consumers to try the service for the first time. Researchers routinely recommend that managers communicate the factors that have been found to successfully explain intended adoption or satisfaction with the use of the service, but this may not lead to intended success of encouraging trial. Hence, managers should perform experiments to find out what works in reality, in their customer base.

For example, if a company wants to communicate the benefits of the service, the first step is to understand and find out which e-service benefits might have an effect on the e-service adoption. The benefits may vary depending on the type of user interface (Internet vs. Other) and type of service (Stand-alone vs. Supporting service). The communication of these benefits could then be tried out in different samples, such as communicating the benefits once, or twice in the same, or different way, and with different numbers of days in-between, with and without incentives etc.

Thirdly, managers are advised to use behavioral data and research methods such as tracking and testing in order to optimize their e-service communication at large. The Internet is a unique marketing medium because behavioral consumer responses to
online communication can be easily tracked and tested. Click-throughs are an important metric for the Web (Chatterjee et al. 2003). Rigorous examination of consumer click-throughs is important for several reasons. First, click-throughs are behavioral and therefore an accountable measure for online marketing activities. Second, click-throughs are an important mechanism for driving traffic to the websites. Finally, click-throughs address several fundamental issues of both theoretical and practical importance of online response measurement including the number of times an ad should be displayed or how many times an e-mail should be sent.

Fourthly, managers should recognize that different e-service benefits and different combinations of the e-service benefits could be used at different stages of the consumer e-service adoption process. The findings showed that the e-service benefits used alone and in different combinations have different effects on consumer behavior. Further, the findings revealed that those benefits, which drive the consumer to the e-service landing page, might be different benefits than those, which trigger the login to the e-service. In order to offer the optimal e-service benefit combination, the companies should track, test and compare the communication configuration at the different stages of the communication process. Click-throughs and login rates are behavioral and therefore offer accountable measures for testing activities including the benefits and number of times e-service benefits should be repeated. In order to increase e-service adoption it is essential to understand what kind of e-service benefits are important at the different stages (e.g. e-mails vs. login page) of the consumer e-service adoption process e-service.

Furthermore, the results of this study also encourage managers to use e-mail communication when communicating e-service benefits. There are several benefits to using e-mails for communicating e-services as e-mails: 1) offer a very short “one click route” to both the website and the e-service itself, 2) create possibilities to targeted and personalized marketing communication, 3) are easy to measure and they offer an ideal environment for testing, 4) are cost efficient and offer a low-cost tool to keep in touch with both potential and actual customers, 5) offer consumers control of what they want to read, 6) are found attractive by consumers due to their information content and the possibility to receive personalized information, 7) are a great medium for time-critical information such as alerts and offers, and 8) offer possibilities to create automated multi-stage e-mails which can be timed and configured in order to create optimized e-mail processes.

Finally, it is advised that the login to the e-service is made as easy as possible for the customers. As this study showed, the login page to the e-service has an essential role within the e-service communication process. The results of this study indicate that the more complicated and time consuming the login to the e-service is, the lower the adoption rate is.

7.3. Limitations

This research has three types of limitations: 1) the measures, 2) the research setting and 3) the sample.

The first limitation concerns the measures used. The experiment had to be limited regarding to the number of benefits. With a larger sample, an experiment covering more benefits, could have given a different result. Also, the tracking tool of the Main study did not recognize customer logins that came from outside of the tracked e-mail
links. Thus, customers might have logged in to the e-service via other routes and links. Measuring all logins at all stages would give a more comprehensive view of the consumer behavior. Further, it would have been interesting to know how many consumers considered or tried to login to the service. Moreover, the tracking tools did not measure timeframes for the CTR and logins. Including reaction times such as time between CTR and logins as a measurement element would have been interesting in order to be able to measures the timeframe in which the click-throughs and logins happened.

The second limitation concerns the research setting used. The Company in the focus of this thesis offers services via several channels, but the focus of this thesis is in their Internet based e-service. The e-services offered are supporting services, which are also available in the shops and on the phone. This means that the results do not necessarily provide an accurate picture of how consumers would react towards stand-alone services or services offered via other or a more limited number of channels. This study was also delimited to private customers and the focus of the study is in consumer e-service benefits and consumer e-services.

In addition, the sample in the Pilot study was a student sample. In order to get more accurate data of the Company customers used in the Main study, the sample in the Pilot study should have been the customers of the Company. The sample of the Main study was also limited to new B2C customers. A larger sample might have yielded significant differences between the treatments. Furthermore, studying B2B customers or B2C customers with a longer customer history may have provided different results.

### 7.4. Avenues for further research

In this section, suggestions for further research will be discussed. First I will discuss research avenues for further research on e-service communication. This is followed by a presentation of proposed topics for studying e-service benefits.

Knowledge of consumer behavior and managerial strategies in a multichannel environment is sparse. Using different communication elements and/or channels at different stages of the e-service communication process is an interesting avenue for further research. It is proposed that a study focusing on this topic would mainly answer the following questions. Firstly, which communication elements and/or channels provide the highest click-through rates and the highest login rates to the e-service? Furthermore, should these communication channels and/or elements be repeated? If so, with what frequency and timing should they be repeated? Thirdly, can a multichannel approach yield better CTR and login rates than single channel approaches?

Secondly, the effect of e-service benefits and/or channels at different stages of the e-service communication process is an interesting avenue for further research. It is proposed that a study focusing on this topic would mainly answer the following questions. First, what kind of e-service benefits, or other motivators and supporting service (e.g. tutorial), used on the login page of the e-service, provide the highest login rates to the e-service? Secondly, should the messages be repeated e.g. with the help of retargeting, and if so at what frequency and timing? Also, can a multichannel approach yield better CTR and login rates than one channel approach?
Thirdly, according to Mittal and Sawheney (2001), future research should also use additional measures such as time spent with the e-service, the number and types of information pieces used and so forth. The login page of the telecom operator e-service did not include the benefit messages used in the e-mails. If the e-service benefits had been repeated on the login page, it might have had positive effects in terms of higher login rates. Also, new ways of identifying the customer such as mobile identity in which the SIM card of one’s mobile phone works as an identity tool, could have a positive effect the login rates in terms of easier and faster first time login to the e-service.

Fourthly, the study used a static single e-mail as the only element to drive consumers to the e-service. Using retargeting in terms of different e-mails depending on the individual consumer action to the previous e-mail would be an interesting avenue for further research. For instance, the results of using a new retargeted e-mail for those who clicked on an e-mail link and landed on the login page but did not login would be interesting. Further, the retargeted e-mail could contain that particular e-service benefit the consumer had clicked creating a more efficient repeat action to be followed.

Finally, new communication and customer service channels such as social networks offers new avenues for this kind of research, as information about e-services can also be acquired through personal experiences or external sources such as other customers (Abrantes, Seabra, Lages and Jayawardhena 2013; Juntumaa 2011). Communicating the e-service benefits via social media channels would be an interesting area of research.

7.5. Concluding remarks

The starting point of this research was the increasing popularity of e-services and its linkage to the high efficiency expectations of introducing e-services. Therefore, it set out to investigate how marketing communication can be used in order to increase e-service adoption rates. This research failed to provide strong evidence supporting the effect of e-mail communication on e-service adoption rates. However, this study provides evidence that there are differences between the effects of different e-service benefits. With the help of testing the right configuration of the benefits and repeating the benefits during the consumer conversion process, the trial rates can be improved.

This is the first study on the behavioral effects of e-service communication. Although it is not conclusive, due to the limitations discussed earlier, the findings of the study can guide researchers to make decisions on which research questions they should focus their research attention. The literature review and the discussion about the avenues for further research can help researchers in this process. Understanding how to develop the communication of e-services in order to increase consumer trial of e-services, would help companies in becoming more cost efficient. If companies would pro-actively communicate the potential benefits of using e-services to customers, it would save customers a lot of time.
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APPENDIX 1  PILOT STUDY QUESTIONNAIRE

1. Do you have a mobile phone subscription which you use and pay for yourself?
   Yes ___  No ___ (If not, go to question number 16.)

2. Is it a Prepaid-subscription?
   Yes ___  No ___ (If not, go to question number 16.)

3. My mobile phone operator is
   Sonera ___
   Elisa/Saunalahti ___
   Dna ___
   TeleFinland ___
   Other, which? _______________

4. For how long have you been a customer of this particular mobile phone operator?
   Less than a year ___
   1-2 years ___
   >2-4 years ___
   > 4 years ___

5. Have you logged into the e-service portal of you mobile phone operator?
   E.g. Oma Saunalahti, Sonera OmatSivut, DnaMinun Palveluni, Dna Oma Pro, Tele.fi Oma Liittymä.
   Yes ___  No ___ (If not, go to question 10).

6. How often do you use the e-service portal of your mobile phone operator?
   Weekly ___
   2-3 times/month ___
   Monthly ___
   Less than once a month ___
   I have only visited it once when I logged into the e-service portal for the first time ___ (go to question 9.)
APPENDIX 1 (CONTINUED) PILOT STUDY QUESTIONNAIRE

7. For what do you use the e-service of your mobile phone operator?

I check the balance of my subscription  
I check the bills/invoices of my subscription  
I look at the information concerning my services  
I make changes in the services  
I contact the customer service  
I inform about service failures  
I familiarize myself with the offers  
I buy more services  
I familiarize myself with customer benefits  
Other, what? 

8. What do you think about the e-service of your mobile operator?

("strongly disagree" (1), to “ strongly agree” (5) with a "do not know" option (6))

The e-service user guides are clear  
It is easy to learn to use the e-service  
It is easy to use the e-service  
It is important for me that I can control my services  
I save time by using the e-service  
By using the e-service I do not have to stand in line  
By using the e-services, I can use the services any time (24/7)  
By using the e-services, I can order the services immediately  
By using the e-service, I can order the services fast  
By using the e-service, I save in service fees  
By using the e-service, I can order more easily what I need  
I can find my customer data in the e-service  
I can find accurate information in the e-service  
I can find up-to-date information in the e-service  
I can find good tips in the e-service  
I avoid personal contact with the company by using the e-service  

APPENDIX 1 (CONTINUED) PILOT STUDY QUESTIONNAIRE

9. Why have you used the e-service of your mobile operator only once?

I did not remember that there is an s-service
I do not remember/know how to get to the e-service
I do not remember the user name and password for the e-service
I did not know where to find the e-service portal
I have not had a need to use the service
I have not had time to use the e-service
I do not get any benefits from using the e-service

10. Why have you not logged into the e-service of your mobile phone operator

I did not remember that there is an e-service
I do not remember/know how to get to the e-service
I do not remember the user name and password for the e-service
I did not know where to find the e-service portal
I have not had a need to use the service
I have not had time to use the e-service
I do not get any benefits from using the e-service

11. Please rank order the customer service channels you use based on your service channel preferences (1= most preferred, 6= least preferred)

Shop
Phone
E-mail
Chat
E-service
Website

12. Do you remember if you have received information about the e-service portal of your mobile phone operator?

Yes ___ No ___
APPENDIX 1 (CONTINUED) PILOT STUDY QUESTIONNAIRE

13. From which channels have you received information on the e-service portal?
   Invoice flyer          ___
   Customer magazine      ___
   Text message           ___
   E-mail                 ___
   Shop                   ___
   Customer service       ___
   Website                ___
   Other, what? _____________________

14. Year of birth          ___

15. Gender
   Female                ___
   Male                  ___

16. Please fill in your contact information in order to participate in the lucky draw for Finnkinos movie tickets
   Name ____________________
   E-mail _____________________
   Phone _______________________

   Thank you for your help!
APPENDIX 2  DESCRIPTIVE DATA FROM THE PILOT STUDY

Age and gender characteristics

<table>
<thead>
<tr>
<th>N</th>
<th>Mean</th>
<th>SD</th>
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<tbody>
<tr>
<td>Age</td>
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<td>32.03</td>
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<table>
<thead>
<tr>
<th>Gender</th>
<th>Frequency</th>
<th>Percent</th>
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</thead>
<tbody>
<tr>
<td>Female</td>
<td>99</td>
<td>34.5</td>
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<tr>
<td>Male</td>
<td>188</td>
<td>65.5</td>
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<td>Total</td>
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</table>

Telecom e-service provider

<table>
<thead>
<tr>
<th>Telecom operator</th>
<th>Frequency</th>
<th>Percent</th>
<th>Market share 2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elisa/Saunalahti</td>
<td>136</td>
<td>47.4%</td>
<td>34%</td>
</tr>
<tr>
<td>Dna</td>
<td>94</td>
<td>32.8%</td>
<td>18%</td>
</tr>
<tr>
<td>Sonera</td>
<td>57</td>
<td>19.9%</td>
<td>34%</td>
</tr>
<tr>
<td>Others</td>
<td>0</td>
<td>0</td>
<td>14%</td>
</tr>
<tr>
<td>Total</td>
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E-service logins

<table>
<thead>
<tr>
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<th>Frequency</th>
<th>Percent</th>
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<tr>
<td>Logged in</td>
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<td>67.9</td>
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<tr>
<td>Not logged in</td>
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APPENDIX 2 (CONTINUED) DESCRIPTIVE DATA FROM THE PILOT STUDY

**Used e-service functionalities**

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<thead>
<tr>
<th>E-service function</th>
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<th>Percentage</th>
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<tbody>
<tr>
<td>Check my invoices</td>
<td>110</td>
<td>25.52</td>
</tr>
<tr>
<td>Check my customer data</td>
<td>86</td>
<td>19.95</td>
</tr>
<tr>
<td>Make changes in services</td>
<td>68</td>
<td>15.78</td>
</tr>
<tr>
<td>Check my balance</td>
<td>57</td>
<td>13.23</td>
</tr>
<tr>
<td>Take contact with CC</td>
<td>37</td>
<td>8.58</td>
</tr>
<tr>
<td>Check offers</td>
<td>24</td>
<td>5.57</td>
</tr>
<tr>
<td>Check customer offers</td>
<td>21</td>
<td>4.87</td>
</tr>
<tr>
<td>Buy more services</td>
<td>17</td>
<td>3.94</td>
</tr>
<tr>
<td>Inform about problems</td>
<td>11</td>
<td>2.55</td>
</tr>
<tr>
<td><strong>Total</strong></td>
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**Reasons to not use e-service**

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<th>Reason to why not used</th>
<th>N</th>
<th>Percentage</th>
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<tr>
<td>Do not have a need to use the e-service</td>
<td>59</td>
<td>36.20</td>
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<tr>
<td>No benefit from e-service</td>
<td>20</td>
<td>12.27</td>
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<tr>
<td>Did not remember passwords</td>
<td>16</td>
<td>9.82</td>
</tr>
<tr>
<td>Have not had time to use the e-service</td>
<td>16</td>
<td>9.82</td>
</tr>
<tr>
<td>Do not know how to get there</td>
<td>14</td>
<td>8.59</td>
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<tr>
<td>Did not remember e-service</td>
<td>11</td>
<td>6.75</td>
</tr>
<tr>
<td>Can not use</td>
<td>9</td>
<td>5.52</td>
</tr>
<tr>
<td>Do not know what it requires from me</td>
<td>8</td>
<td>4.91</td>
</tr>
<tr>
<td>No benefit for me</td>
<td>5</td>
<td>3.07</td>
</tr>
<tr>
<td>Cannot say</td>
<td>5</td>
<td>3.07</td>
</tr>
<tr>
<td><strong>Total</strong></td>
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</table>
APPENDIX 2 (CONTINUED) DESCRIPTIVE DATA FROM THE PILOT STUDY

Communication channels in regards to e-service

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<th>Communication channel</th>
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<tr>
<td>Invoice/flyer</td>
<td>62</td>
<td>24.90</td>
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<tr>
<td>Website</td>
<td>42</td>
<td>16.87</td>
</tr>
<tr>
<td>Textmessage</td>
<td>34</td>
<td>13.65</td>
</tr>
<tr>
<td>E-mail</td>
<td>32</td>
<td>12.85</td>
</tr>
<tr>
<td>Customer magazine</td>
<td>29</td>
<td>11.65</td>
</tr>
<tr>
<td>Customer service</td>
<td>25</td>
<td>10.04</td>
</tr>
<tr>
<td>Shop</td>
<td>25</td>
<td>10.04</td>
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<tr>
<td>Total</td>
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</table>

E-service communication awareness

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<th>Awareness</th>
<th>Frequency</th>
<th>Percent</th>
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</thead>
<tbody>
<tr>
<td>Remember</td>
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<tr>
<td>Do not remember</td>
<td>181</td>
<td>63.1</td>
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<tr>
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</table>
## APPENDIX 3  PILOT STUDY DESCRIPTIVE DATA OF BENEFIT ITEMS

<table>
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<tr>
<th>Construct</th>
<th>Benefit</th>
<th>N*)</th>
<th>Mean</th>
<th>St.Dev</th>
<th>Variance</th>
<th>Skewness</th>
<th>Kurtosis</th>
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</thead>
<tbody>
<tr>
<td>Usefulness - time savings</td>
<td>I save time</td>
<td>160</td>
<td>4.06</td>
<td>1.042</td>
<td>1.085</td>
<td>-.993</td>
<td>.368</td>
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<tr>
<td>Value subdimension</td>
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<td></td>
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<td></td>
<td></td>
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</tr>
<tr>
<td>When-speediness</td>
<td>I can order fast</td>
<td>144</td>
<td>4.07</td>
<td>.944</td>
<td>.890</td>
<td>-1.052</td>
<td>1.048</td>
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<tr>
<td>Speed of service delivery</td>
<td>I do not have to stand in line</td>
<td>161</td>
<td>4.40</td>
<td>.846</td>
<td>.716</td>
<td>-1.616</td>
<td>2.834</td>
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<td>Value subdimension</td>
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<td></td>
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<tr>
<td>When-temporal latitude, Convenience</td>
<td>I can use services 24/7</td>
<td>163</td>
<td>4.59</td>
<td>.718</td>
<td>.515</td>
<td>-2.142</td>
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<tr>
<td>Speed of service delivery</td>
<td>I can order services immediately</td>
<td>141</td>
<td>3.99</td>
<td>1.028</td>
<td>1.057</td>
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<td>.115</td>
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<tr>
<td>Convenience</td>
<td>I can order more easily what I need</td>
<td>150</td>
<td>3.70</td>
<td>1.122</td>
<td>1.258</td>
<td>-.483</td>
<td>-.616</td>
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<tr>
<td>Usefulness-personal information</td>
<td>I can find my customer data</td>
<td>159</td>
<td>4.39</td>
<td>.754</td>
<td>.569</td>
<td>-1.054</td>
<td>.489</td>
</tr>
<tr>
<td>Usefulness-quality of information</td>
<td>I can find up-to-date information</td>
<td>152</td>
<td>3.84</td>
<td>.870</td>
<td>.756</td>
<td>-.238</td>
<td>-.722</td>
</tr>
<tr>
<td>Usefulness-quality of information</td>
<td>I can find accurate information</td>
<td>154</td>
<td>3.66</td>
<td>.945</td>
<td>.894</td>
<td>-.200</td>
<td>-.435</td>
</tr>
<tr>
<td>Usefulness-quality of information</td>
<td>I can find good tips</td>
<td>140</td>
<td>3.22</td>
<td>1.032</td>
<td>1.066</td>
<td>.020</td>
<td>-.603</td>
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<tr>
<td>Lack of sociality</td>
<td>I avoid personal contact with the company</td>
<td>148</td>
<td>3.57</td>
<td>1.162</td>
<td>1.349</td>
<td>-.338</td>
<td>-.736</td>
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<tr>
<td>Usefulness- monetary savings</td>
<td>I save in service fees</td>
<td>135</td>
<td>3.93</td>
<td>1.150</td>
<td>1.323</td>
<td>-.899</td>
<td>-.024</td>
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<td>Control over process</td>
<td>It is important for me that I can control my services</td>
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<td>.753</td>
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<td>Ease of use</td>
<td>It is easy to use</td>
<td>163</td>
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<td>.954</td>
<td>-.669</td>
<td>-.133</td>
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<tr>
<td>Ease of use</td>
<td>It is easy to learn</td>
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<td>.909</td>
<td>.826</td>
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<td>The user guides are clear</td>
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<td>1.002</td>
<td>1.003</td>
<td>-.565</td>
<td>-.356</td>
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*) Differences in N due to the alternative "Cannot say"
## APPENDIX 4  PILOT STUDY PCA CORRELATIONS MATRIX

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<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
<th>13</th>
<th>14</th>
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<th>16</th>
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<tbody>
<tr>
<td>The user guides are clear</td>
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<td>.305</td>
<td>.455</td>
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<tr>
<td>It is easy to learn</td>
<td>.784</td>
<td>.678</td>
<td>.392</td>
<td>.422</td>
<td>.482</td>
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<td>.448</td>
<td>.256</td>
<td>.466</td>
<td>.263</td>
<td>.132</td>
<td></td>
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<tr>
<td>It is easy to use</td>
<td>.274</td>
<td>.380</td>
<td>.392</td>
<td>.538</td>
<td>.482</td>
<td>.480</td>
<td>.432</td>
<td>.464</td>
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<td>.294</td>
<td>.332</td>
<td>.299</td>
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<td>It is important for me that I can control my services</td>
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<tr>
<td>I save time</td>
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<tr>
<td>I do not have to stand in line</td>
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<td>I can order immediately</td>
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<tr>
<td>I save in service fees</td>
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<td>.358</td>
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<td>.404</td>
<td>.333</td>
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<td>.349</td>
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<td>.433</td>
<td>.389</td>
<td>.239</td>
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<tr>
<td>I can order easily what I need</td>
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<td>.448</td>
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<td>.333</td>
<td>.441</td>
<td>.557</td>
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<td>.168</td>
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<tr>
<td>I can find my customer data</td>
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<td>.256</td>
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<td>.312</td>
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<td>.332</td>
<td>.316</td>
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<td>.497</td>
<td>.668</td>
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<td>.464</td>
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</tr>
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<td>.263</td>
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<td>.249</td>
<td>.055</td>
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<td>.321</td>
<td>.538</td>
<td>.464</td>
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<td>I avoid personal contact with company</td>
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APPENDIX 5  PILOT STUDY PCA ROTATED COMPONENT MATRIX

Rotated component matrix for the initial PCA

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<th>E-service benefit item</th>
<th>Component loadings</th>
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<td>The user guides are clear</td>
<td>.826</td>
</tr>
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</tr>
<tr>
<td>It is easy to use</td>
<td>.830</td>
</tr>
<tr>
<td>It is important for me that I can control my services</td>
<td>.588</td>
</tr>
<tr>
<td>I save time</td>
<td>.768</td>
</tr>
<tr>
<td>I do not have to stand in line</td>
<td>.810</td>
</tr>
<tr>
<td>I can use services 24/7</td>
<td>.815</td>
</tr>
<tr>
<td>I can order immediately</td>
<td>.495</td>
</tr>
<tr>
<td>I can order fast</td>
<td>.557</td>
</tr>
<tr>
<td>I save in service fees</td>
<td></td>
</tr>
<tr>
<td>I can order easily what I need</td>
<td>.380</td>
</tr>
<tr>
<td>I can find my customer data</td>
<td>.394</td>
</tr>
<tr>
<td>I can find accurate information</td>
<td></td>
</tr>
<tr>
<td>I can find up-to-date information</td>
<td>.364</td>
</tr>
<tr>
<td>I can find good tips</td>
<td></td>
</tr>
<tr>
<td>I avoid personal contact with company</td>
<td></td>
</tr>
</tbody>
</table>

Variance explained (67.71%)  42.84%  10.14%  8.06%  6.33%

Extraction Method: Principal Component Analysis
Rotation Method: Varimax with Kaiser Normalization.
Rotation method: Varimax
Rotation converged in 9 iterations
APPENDIX 6  PILOT STUDY PCA SCREE PLOT
APPENDIX 7  WIREFRAMES FOR TREATMENTS T2-T7

Wireframe of e-mails to Group T2 with one message

```
<table>
<thead>
<tr>
<th>Pre-header (same for all groups)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Header (same for all groups)</td>
</tr>
<tr>
<td>Introduction (same for all groups)</td>
</tr>
<tr>
<td>Benefit 1: Save Time</td>
</tr>
<tr>
<td>Footer (same for all groups)</td>
</tr>
</tbody>
</table>
```

Wireframe of e-mails to Group T3 with one message

```
<table>
<thead>
<tr>
<th>Pre-header (same for all groups)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Header (same for all groups)</td>
</tr>
<tr>
<td>Introduction (same for all groups)</td>
</tr>
<tr>
<td>Benefit 1: Access to accurate information</td>
</tr>
<tr>
<td>Footer (same for all groups)</td>
</tr>
</tbody>
</table>
```
APPENDIX 7 (CONTINUED) WIREFRAMES FOR TREATMENTS T2-T7

Wireframe of e-mails to Group T4 with one message

- Pre-header (same for all groups)
- Header (same for all groups)
- Introduction (same for all groups)
  
  Benefit 1: Easy to use

- Footer (same for all versions)

Wireframe of e-mails to Group T5 with two messages

- Pre-header (same for all groups)
- Header (same for all groups)
- Introduction (same for all groups)

  Benefit 1:
  Save time

  Benefit 2:
  Access to accurate information

- Footer (same for all groups)
APPENDIX 7 (CONTINUED) WIREFRAMES FOR TREATMENTS T2-T7

Wireframe of e-mails to Group T6 with two messages

Wireframe of e-mails to Group T7 with two messages
APPENDIX 8  MAIN STUDY EXPERIMENT E-MAIL TEXTS

**Sender:** Company X

**Subject line:** Services for you

**Preview snippet:** Services for you - In order to see the message, pls click here

**Welcome to MyCompany X e-services!**

In addition to low prices and superior benefits, you can now get the most out from MyCompany X e-services.

**This is how you save time**

Take care of your subscription issues whenever is suits you. My Company X e-services helps you to take care of all your subscription matters immediately – wherever you are. Start saving time now and [log in from here](#).

**Always accurate information**

In MyCompany X e-services, you are always up to date. You can browse through your bills, check your balances, and change your information. The accurate and latest information about your customer relationship can be found here, [log in from here](#).

**Surprisingly easy to use**

My Company X e-services is clear and very easy to use. You just need an Internet connection, the service is open 24/7. Find out how simple it is to use My Company X e-services, [log in from here](#).

**Footer:** Telecom Company Ltd Source: Telecom Company Ltd customer database. If you don’t want to receive e-mail offers anymore, you can [unsubscribe here](#).
APPENDIX 9  PREVIEW OF E-MAIL

Preview of e-mail for treatments T1 and T1Repeat (all three messages) on Outlook 2010 in Finland in November 2012.

Sender: Company X

Subject: Welcome to Company X e-services
APPENDIX 10 POST STUDY QUESTIONNAIRE

1. Do you remember if you have received e-mail about the MyCompany X e-services?
   Yes, I do remember ___     No, I do not remember ___

2. Have you logged into the MyCompany X e-services?
   Yes, I have ___     No, I have not ___

3. What do you think about the MyCompany X e-service?
   ("strongly disagree" (1), to “ strongly agree” (5) with a "do not know" option (6))
   The MyCompany X e-service user guides are clear ___
   It is easy to learn to use the MyCompany X e-service ___
   It is easy to use the MyCompany X e-service ___
   I save time by using the MyCompany X e-service ___
   By using the MyCompany X e-service I do not have to stand in line ___
   By using the MyCompany X e-services, I can use the services 24/7 ___
   By using the MyCompany X e-services, I can order the services immediately ___
   By using the MyCompany X e-service, I can order the services fast ___
   I can find my customer data from the MyCompany X e-services ___
   I can find accurate information on the MyCompany X e-services ___
   I can find up-to-date information on the MyCompany X e-services ___
   I can find good tips in the MyCompany X e-services ___
   I am fully capable of using the MyCompany X e-services ___
   I am confident of my capability to use the MyCompany X e-services ___
   I can easily use the MyCompany X e-services when needed ___

4. How probable is it that you use the MyCompany X e-services in the future? (1=not at all probable, 5=very probable) ___
APPENDIX 10 (CONTINUED) POST STUDY QUESTIONNAIRE

5. Please rank order the MyCompany X customer service channels you use based on your service channel preferences
(1= most preferred, 6 = least preferred)
   Shop                         ___
   Phone                        ___
   E-mail                       ___
   Chat                         ___
   E-service                    ___
   Website                      ___

6. Year of birth
   ___

7. Gender
   Female          ___
   Male            ___

8. Education
   Elementary school       ___
   Baccalaureate          ___
   Vocational exam        ___
   Bachelor’s degree      ___
   Master’s degree        ___

9. Please fill in your contact information in order to participate in the lucky draw.
   Name  ____________________    E-mail _____________________
   Phone ____________________    Thank you for your help!
APPENDIX 11  DESCRIPTIVE DATA FROM THE POST STUDY

Age distribution in the Post study

<table>
<thead>
<tr>
<th>Age</th>
<th>N</th>
<th>Min</th>
<th>Max</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>1659</td>
<td>19</td>
<td>88</td>
<td>47.84</td>
<td>16.62</td>
</tr>
</tbody>
</table>

Gender and education of Post study respondents

<table>
<thead>
<tr>
<th>Gender</th>
<th>N</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>615</td>
<td>37.1</td>
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<tr>
<td>Male</td>
<td>1044</td>
<td>62.9</td>
</tr>
<tr>
<td>Total</td>
<td>1659</td>
<td>100.0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Education</th>
<th>N</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Education</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Elementary school</td>
<td>197</td>
<td>11.9</td>
</tr>
<tr>
<td>Baccalaureate</td>
<td>157</td>
<td>9.5</td>
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<tr>
<td>Vocational exam</td>
<td>703</td>
<td>42.4</td>
</tr>
<tr>
<td>Bachelor degree</td>
<td>325</td>
<td>19.6</td>
</tr>
<tr>
<td>Master degree</td>
<td>277</td>
<td>16.7</td>
</tr>
<tr>
<td>Total</td>
<td>1659</td>
<td>100.0</td>
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</tbody>
</table>
## APPENDIX 12  POST STUDY DESCRIPTIVE DATA OF BENEFIT ITEMS

<table>
<thead>
<tr>
<th>Benefit item</th>
<th>N</th>
<th>Mean</th>
<th>Std.Dev</th>
<th>Variance</th>
<th>Skewness</th>
<th>Kurtosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>The user guides are clear</td>
<td>533</td>
<td>3.42</td>
<td>.993</td>
<td>,985</td>
<td>-.500</td>
<td>-.038</td>
</tr>
<tr>
<td>It is easy to learn</td>
<td>534</td>
<td>3.44</td>
<td>.968</td>
<td>.938</td>
<td>-.495</td>
<td>-.064</td>
</tr>
<tr>
<td>It is easy to use</td>
<td>531</td>
<td>3.44</td>
<td>1.016</td>
<td>1.032</td>
<td>-.504</td>
<td>-.283</td>
</tr>
<tr>
<td>I save time</td>
<td>523</td>
<td>3.50</td>
<td>1.089</td>
<td>1.185</td>
<td>-.544</td>
<td>-.225</td>
</tr>
<tr>
<td>I do not have to stand in line</td>
<td>569</td>
<td>4.03</td>
<td>.976</td>
<td>.953</td>
<td>-1.161</td>
<td>1.345</td>
</tr>
<tr>
<td>I can use services 24/7</td>
<td>608</td>
<td>4.09</td>
<td>.989</td>
<td>.979</td>
<td>-1.319</td>
<td>1.692</td>
</tr>
<tr>
<td>I can order immediately</td>
<td>516</td>
<td>3.79</td>
<td>1.002</td>
<td>1.003</td>
<td>-.785</td>
<td>.390</td>
</tr>
<tr>
<td>I can order fast</td>
<td>515</td>
<td>3.77</td>
<td>1.008</td>
<td>1.016</td>
<td>-.677</td>
<td>.119</td>
</tr>
<tr>
<td>I can find my customer data</td>
<td>571</td>
<td>3.91</td>
<td>1.054</td>
<td>1.110</td>
<td>-1.020</td>
<td>.633</td>
</tr>
<tr>
<td>I can find accurate information</td>
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<td>3.58</td>
<td>1.037</td>
<td>1.075</td>
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<td>-.055</td>
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<tr>
<td>I can find up-to-date information</td>
<td>519</td>
<td>3.75</td>
<td>.978</td>
<td>.957</td>
<td>-.780</td>
<td>.444</td>
</tr>
<tr>
<td>I can find good tips</td>
<td>467</td>
<td>3.41</td>
<td>.997</td>
<td>.994</td>
<td>-.314</td>
<td>-.289</td>
</tr>
<tr>
<td>I am fully capable of using it</td>
<td>577</td>
<td>3.47</td>
<td>1.167</td>
<td>1.361</td>
<td>-.569</td>
<td>-.411</td>
</tr>
<tr>
<td>I am confident of my capability of</td>
<td>574</td>
<td>3.17</td>
<td>1.174</td>
<td>1.379</td>
<td>-.192</td>
<td>-.800</td>
</tr>
<tr>
<td>using it</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I can use easily when needed</td>
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<td>1.148</td>
<td>1.317</td>
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APPENDIX 13 POST STUDY PCA CORRELATIONS MATRIX

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<th>Benefit item</th>
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<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
<th>13</th>
<th>14</th>
<th>15</th>
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<tr>
<td>The user guides are clear</td>
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<td>.774</td>
<td>.785</td>
<td>.607</td>
<td>.499</td>
<td>.500</td>
<td>.569</td>
<td>.627</td>
<td>.646</td>
<td>.586</td>
<td>.541</td>
<td>.555</td>
<td>.583</td>
<td>.643</td>
<td></td>
</tr>
<tr>
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<td>.774</td>
<td>1</td>
<td>.804</td>
<td>.608</td>
<td>.512</td>
<td>.479</td>
<td>.528</td>
<td>.602</td>
<td>.584</td>
<td>.533</td>
<td>.532</td>
<td>.496</td>
<td>.578</td>
<td>.587</td>
<td>.634</td>
</tr>
<tr>
<td>It is easy to use</td>
<td>.785</td>
<td>.804</td>
<td>1</td>
<td>.641</td>
<td>.536</td>
<td>.500</td>
<td>.545</td>
<td>.605</td>
<td>.581</td>
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<td>.577</td>
<td>.584</td>
<td>.594</td>
<td>.601</td>
<td>.652</td>
</tr>
<tr>
<td>I save time</td>
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<td>.641</td>
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<td>.584</td>
<td>.559</td>
<td>.594</td>
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<td>.557</td>
<td>.602</td>
<td>.574</td>
<td>.542</td>
<td>.454</td>
<td>.416</td>
<td>.487</td>
</tr>
<tr>
<td>I do not have to stand in line</td>
<td>-.499</td>
<td>-.512</td>
<td>.536</td>
<td>.584</td>
<td>1</td>
<td>.768</td>
<td>.681</td>
<td>.691</td>
<td>.596</td>
<td>.529</td>
<td>.607</td>
<td>.484</td>
<td>.448</td>
<td>.314</td>
<td>.400</td>
</tr>
<tr>
<td>I can use services 24/7</td>
<td></td>
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<td>.479</td>
<td>.500</td>
<td>.559</td>
<td>.768</td>
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<td>.560</td>
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<td>I can order immediately</td>
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<td>.545</td>
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<td>.681</td>
<td>.730</td>
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<td>.849</td>
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<td>.630</td>
<td>.678</td>
<td>.606</td>
<td>.479</td>
<td>.378</td>
</tr>
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<td>I can order fast</td>
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<td>.602</td>
<td>.605</td>
<td>.612</td>
<td>.691</td>
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<td>.662</td>
<td>.667</td>
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<td>.503</td>
<td>.434</td>
</tr>
<tr>
<td>I can find my customer data</td>
<td></td>
<td>.646</td>
<td>.584</td>
<td>.581</td>
<td>.557</td>
<td>.596</td>
<td>.615</td>
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<td>.691</td>
<td>.666</td>
<td>.504</td>
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<td>I can find accurate information</td>
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<td>.624</td>
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<td>1</td>
<td>.819</td>
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<td>I can find up-to-date information</td>
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<td>.532</td>
<td>.577</td>
<td>.574</td>
<td>.607</td>
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<td>1</td>
<td>.703</td>
<td>.490</td>
<td>.432</td>
<td>.497</td>
</tr>
<tr>
<td>I can find good tips</td>
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<td>.541</td>
<td>.496</td>
<td>.584</td>
<td>.542</td>
<td>.484</td>
<td>.546</td>
<td>.606</td>
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<td>.504</td>
<td>.721</td>
<td>1</td>
<td>.438</td>
<td>.434</td>
<td>.487</td>
</tr>
<tr>
<td>I am fully capable of using it</td>
<td></td>
<td>.555</td>
<td>.578</td>
<td>.594</td>
<td>.454</td>
<td>.448</td>
<td>.426</td>
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<td>.528</td>
<td>.509</td>
<td>.490</td>
<td>1</td>
<td>.438</td>
<td>.754</td>
</tr>
<tr>
<td>I am confident of my capability of using it</td>
<td></td>
<td>.583</td>
<td>.587</td>
<td>.601</td>
<td>.416</td>
<td>.314</td>
<td>.305</td>
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<td>.472</td>
<td>.539</td>
<td>.432</td>
<td>.434</td>
<td>1</td>
<td>.754</td>
</tr>
<tr>
<td>I can easily use when needed</td>
<td></td>
<td>.643</td>
<td>.634</td>
<td>.652</td>
<td>.487</td>
<td>.400</td>
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</table>
APPENDIX 14  SCREE PLOT OF THE POST STUDY PCA


PIA HELLMAN

THE EFFECT OF COMMUNICATING E-SERVICE BENEFITS ON CONSUMER E-SERVICE ADOPTION

The starting point of this research was the increasing popularity of companies introducing e-services because of the expected increase in efficiency. However, the introduction of an e-service does not automatically lead to usage. Research shows that even when consumers say that they prefer to have their transactions handled by digital channels, the adoption rate of e-services is lower than what the company has expected. This study set out to investigate if marketing communication through e-mail could increase e-service adoption rates.

There is clearly a lack of understanding of what drives consumers to use e-services. Generally, there are monetary benefits for the company when consumers switch to online services. For the consumers, however, the benefits are not necessarily evident. In order to build positive consumer perceptions of the e-service benefits and increase e-service adoption, the firms need to communicate the benefits to consumers.

This thesis investigates if communicating e-service benefits to consumers can increase e-service adoption. Based on a conceptual framework of e-service benefits and e-service communication, the effect of communicating e-service benefits through e-mail in a b-to-c environment was measured.

Three studies were conducted, of which the main study was a field experiment. An experimental design was applied to new customers of a telecom service provider. Three benefits were measured: time savings, easy to use, and access to information. The adoption was measured as the web traffic, including e-mail click-through-rates and login rates to the e-service. The effect of each e-service benefit used alone, in pairs or in a combination of all three benefits was measured. The effect of repeat actions was also tested.

The findings from the experiment revealed that there were differences between the effects of the treatments on different behaviors in the adoption process. However, this research failed to provide strong evidence supporting a positive effect of e-mail communication on e-service adoption. Nevertheless, the results suggest that companies should carefully investigate which benefits consumers are seeking and how to communicate the benefits during the stages of the consumer adoption process. The study shows that consumers’ interest in and perception of e-service benefits can vary during the different stages of the e-service adoption process.