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Abstract

Using the decomposed theory of planned behavior (DTPB), this paper addresses the drivers and inhibitors for end-consumer use of the mobile Internet. Qualitative interviews with 15 adopters who themselves classify them as adopters of the mobile Internet, indicates that the adoption of the innovative parts beyond voice and SMS is evolving slowly despite a high penetration rate of mobile phones (70%) and substantial amount invested in the mobile area. Larger displays, change in key boards, and improved convergence with other technologies are highlighted as the key areas that needs improvements.

1.   Introduction

The mobile Internet has received substantial consideration among both popular and academic publications within the fields of adoption, diffusion, and domestication research (Pedersen and Ling 2002). Furthermore, policy makers in particular is focused on this next wave of computing with phrases such as nomadic (Lyytinen and Yoo Forthcoming) and pervasive (Lyytinen and Yoo 2002) computing appearing in the national R&D programs. Policy makers are concerned whether the mobile Internet will materialize a new source of gaining economic momentum in the economy through technology manufacturing, software development and innovation of business practice. A prominent example of what is at stake is the European IST Sixth Frame Program:

"research is expected to …open new social and economic opportunities by allowing full seamless and nomadic user access to new classes of feature rich applications, and new classes of person to person, device to device and device to persons applications" (European Commission 2002). Yet all studies suggest that the mobile Internet is not progressing in an innovative manner or rapidly with the exception of the SMS (Short Message Service) and the voice area (International Telecommunication Union 2002).

The mobile Internet differs from the wired Internet in the sense that its primary use is in contextually different settings. The wired Internet is mostly used in predetermined

settings and the mobile Internet is more limited in regards to systems resources as compared to the wired Internet (Kim, Kim et al. 2002). The remarkable adoption rate of mobile phones has contributed to the high expectation of an equal adoption rate for the mobile Internet. Experimental and laboratory research have indicated that the high hopes for diffusion of for example mobile commerce are not completely unfounded if the users are exposed to the new technologies (Khalifa and Cheng 2002) and the task complexity is high (van der Heijden and Sørensen 2002). Yet, empirical studies with users in real world settings suggest that SMS is the primary non-voice use of the mobile Internet in the European context (Aarnio, Enkenberg et al. 2002) whereas e-mail and banking services is a lot more limited. Furthermore, the existing empirical studies also point to severe adoptions challenges, such as concentrated and discrete use rather than being used widely (Anckar and D'Incau 2002);(Kim, Kim et al. 2002) and that only entertainment services seems to gain momentum (Aarnio, Enkenberg et al. 2002). Also, research has suggested that the users of the mobile Internet utilize this as complementary to the wired Internet (Anckar and D'Incau 2002) and other communication channels. Thus, not only is the mobile Internet challenged by the wired Internet but also by an Internet that continue to attract more users, innovative content, transport technologies, and payment mechanisms.

Our research investigates why individuals use or not use the mobile Internet. This qualitative study of the mobile Internet is based on qualitative use of the decomposed theory of planned behavior (DTPB). DTPB combines the most applicable features of the following three models; the technology acceptance model, the theory of planned behavior (Taylor and Todd 1995), and the diffusion of innovation theory. The rather complex DTPB-model has been criticized as not meeting the standards of simplicity and adding only marginal predictive power in quantitative studies (Mathieson, Peacock et al. 2001). The primary gain from this paper is the qualitative study based on fifteen telephone interviews conducted in November 2002. Although, the primary purpose this study is to apply the DTPB-model in a qualitative study of the mobile Internet, we also aim to aid the IS community with the ongoing theoretical progress.

2.   Mobile Market Overview

The Danish mobile phone market is often viewed as one of the most developed in the world due to early the telecommunication liberalization, the focus on cheaper prices, and the rapid development through fierce competition. Today, in Scandinavia (Denmark, Sweden, Norway, Iceland, and Finland) there are more mobile phones than fixed network subscriptions and the average penetration of mobile phones are reaching 80%. Yet the mobile penetration in Denmark is not impressive as compared to the leading countries in the European Union (EU). Despite the low penetration as compared to the other Nordic countries and the fact that Denmark has a mobile subscriber percentage of total telephone subscribers that are below EU average, Denmark is still among the spearheading countries who experience a high usage of mobile communication services, such as SMS.

The Danish mobile subscribers are using the features of SMS to a greater extend than United Kingdom and France, but the Danish market falling behind in the general aspects of using the mobile phone for communication. Denmark not only has the lowest mobile traffic per subscriber, but also a lower percentage use of mobile traffic as compared to fixed network traffic.

Table 1: *Cross-country Indicators, 2001*

Country	Mobile subscribers[1] (000)	Mobile Penetration[1]	Mobile Subscribers as % of total telephonesubscribers[1]	SMS traffic (millions)[2]	Monthly SMS use per subscriber[2]
Denmark	3,960	73.8	50.6	1,334	28
Finland	4,044	77.8	58.7	1,202	25
Norway	3,737	82.5	53.4	2,070	46
UK	46,282	77.0	56.7	12,036	22
France	35,922	60.5	51.4	3,234	8
EU	350,222	43.8	51.9	n.a.	n.a.

Source: *1)(International Telecommunication Union 2001) 2)(National IT and Telecom Agency, Denmark 2001); (Ministry of Transport and Communications, Finland 2002); (Norwegian Post and Telecommunication Authority 2002); (Oftel Office of Telecommunication UK 2002); (Autorité de Regulation des Telecommunications 2001)*

Table 2: *Fixed Network Traffic and Mobile Traffic, 2001. Population, 2001*

	Mobile network traffic (million minutes)	Mobile traffic as % of fixed traffic	Fixed network traffic (million minutes)	Traffic per mobile subscriber (minutes)	Population (000)
Denmark[i]	2,929	12	23,469	740	5,370
Norway [ii]	3,582	12	30,960	958	4,530
UK [iii]	45,027	15	300,004	973	59,340
France [iv]	44,273	23	191,350	1,232	60,080

Source: *(i)(National IT and Telecom Agency, Denmark 2001) (ii)(Norwegian Post and Telecommunication Authority 2002) ; (iii)(Oftel office of Telecommunication UK 2002) ; (iv)(Autorité de Regulation des Telecommunications 2001)*

Since the introduction of WAP (Wireless Application Protocol) in the Danish market, the technology has gone through a rapid decline in users and in the development of content. A study on the status and perspectives of the WAP-technology (Vilstrup Interactive 2000), indicates that WAP-consumers will not consider returning to the technology after they tried it, and four out of five would not consider buying a WAP enabled phone. Furthermore, the study states that only 11% of the respondents were aware that they owned a WAP enabled phone, and out of that group itis only two percent that use the WAP possibility every day.

In the Vilstrup Interactive study(Vilstrup Interactive 2000), 64% of the users stated that they expect to use WAP more when GPRS is introduced on the market. Recent statistics from the Danish National Telecom Agency(National IT and Telecom Agency, Denmark 2001) displays, that only 11,000 mobile phone customers have embraced GPRS technology, which is equivalent with only 2.5 users per thousand mobile phone user.

The results above clearly define the Danish mobile communication market as a hesitant market, where reluctant consumers so far have rejected to adopt the mobile Internet. Not only is the Danish mobile market falling behind in general aspects of using the mobile phone for communication, but also in regards to the two technologies that were pointed out to jumpstart the mobile Internet WAP and GPRS, both have very low diffusion rates.

3.   Our Research Model

This article is based on the Decomposed Theory of Planned Behavior (DTPB) research model. The chosen theoretical framework is supported by Technology Acceptance Model (TAM), Theory of Planned Behavior (TPB), and Diffusion of Innovation Theory (DIT). These three theories lay the ground for the DTPB. Thus, many of the shortcomings for each of the components apply also for the DTPB. The main reason for selecting this research model for this study is that it includes technical, social, psychological as well as other potentially important adoption factors. Other similar research models cover less ground and provide therefore not the same comprehensive over view as DTPB does. The combination of these established theories enhances the validity of the model, but that alone would not justify combining the theories.

Davis' Technology Acceptance Model (TAM) is highly regarded within the IS community (Adams, Nelson et al. 1992);(Straub, Keil et al. 1997);(Szajna 1996);(Viswanath and Davis 2000) and is an important cornerstone in the DTPB model. TAM has shown a significant relationship between attitude and behavior, which enhances the validity of that portion of DTPB that is considering these two adoption factors. The subsequent issues are argued in the TAM model; (1) The ease of use of the mobile Internet or the lack of it, (2) the usability of the mobile Internet. The TAM has achieved greater statistical validity than TPB (Chau and Hu 2002).

The TPB has strong similarities to TAM in its structure (Ajzen 1985). The TPB includes more variables in its theoretical model than TAM does in its structure and has as a result more explanatory power. The later challenges are discussed in the TPB section; (1) The high cost to utilize the mobile Internet which include both the monetary cost and the time invested by the individual user to learn to take advantage of the technology, (2) the impact of poor technology facility conditions available to the individuals considering adoption of the mobile Internet, (3) the impact of social influences on a potential adopter by his reference group, and (4) the identification and persuasion of the target group with high levels of self-efficacy to adopt the mobile Internet technologies since they are more likely to adopt complex technologies (Compeau and Higgins 1991).

Rogers classical Diffusion of Innovation Theory captures adoption issues with his five perceived attributes of innovation. Out of these five, four are significant correlated to with the Decomposed Theory of Planned Behavior; relative advantage, complexity, compatability and observability (Rogers 1995). These four perceived attributes of innovation support four out of seven challenges of our chosen theoretical framework. The following issues are addressed in the DIT section; (1) The compatibility of the mobile Internet to existing everyday patterns and the wired Internet, (2) The ease of Use of the mobile Internet or the lack of it, (3) the usability of the mobile Internet, (4) and the impact of social influence on a potential adopter.

The Technology Acceptance Model (TAM) is grounded in models from the social psychology, such as the Theory of Reasoned Action (TRA) and the Theory of Planned Behavior (TPB) (Ajzen 1985). Furthermore, Davis (Davis 1986) has gained great inspiration from Rogers' DIT as well. The primary goal of TAM is to explain the

determinants of IT acceptance by tracing the impact of external factors on internal beliefs, attitudes, and intentions (Davis, Bagozzi et al. 1989). TAM was created in a manner to include a small number of fundamental variables with the greatest explanation aptitude. The focus of TAM is therefore on the usability and ease of use variables.

According to TAM, both the perceived usefulness- and the ease of use- variable have a direct impact on attitude. Furthermore, ease of use has also proven to have significant impact on the perceived usefulness in particular in the early stages of adoption cycle (Szajna 1996) in addition to its impact on attitude (Davis 1986; Mathieson 1991; Keil, Beranek et al. 1995). Moreover, Davis discovered a statistical significant relationship between perceived behavioral intention (disregarding attitude) (Davis, Bagozzi et al. 1989). The final link in the TAM model is between behavioral intention and usage behavior. Consequently, two (ease of use and usability) out of the seven challenges will be argued in this section.

Correspondingly to TAM, TPB is also founded in models from the social psychology, such as the Theory of Reasoned Action (TRA) (Ajzen and Fishbein 1980). This model is more complex than TAM since it includes several additional variables to tailor the model to a specific innovation or product. By adding these additional variables the explanatory power of TPB increases as compared to TAM (Mathieson 1991). In addition to the attitude component TPB also include subject norm and perceived behavioral control to increase the reach of the model.

It is also important to note that the direct link between behavioral beliefs & outcome evaluation (referred to by TAM as perceived usefulness and ease of use) is not present in this model. However, there is a direct link, bypassing behavioral intention, to usage behavioral.

As viewed in the DTPB, TAM and DIT supports the perceived usefulness, ease of use variables, DIT solely complement the compatibility variable, DIT and TPB supports the social influence, and TPB supports the self-efficacy, resource facilitation condition, and technology facilitation condition alone.

Taylor and Todd found in their study of potential users of a computer resource center that the paths perceived usefulness to attitude, social influences (or in their case peer and superior influences) to subjective norm, self-efficacy and resource facilitated conditions to perceived behavioral control, all were significant determinants (Taylor and Todd 1995). The three remaining variables, ease of use and compatibility to attitude, and technology facilitating conditions to perceived behavioral control, were found to not be significant determinants. Although, ease of use and compatibility were found not to be a determinator of attitude it is important to note that since the mobile Internet is in the early adopter stage of its adoption cycle and the users lack experience with the technology it may be important to include these variables in future studies although not found significant in Taylor and Todd's study of already mature technologies. Moreover, the lack of significance found in the path between the technology facilitative conditions and perceived behavioral control should not be discarded in future studies of the mobile Internet since the mobile Internet is operated in a mobile context rather than the stationary context found in the computer resource center where Taylor and Todd conducted their study.
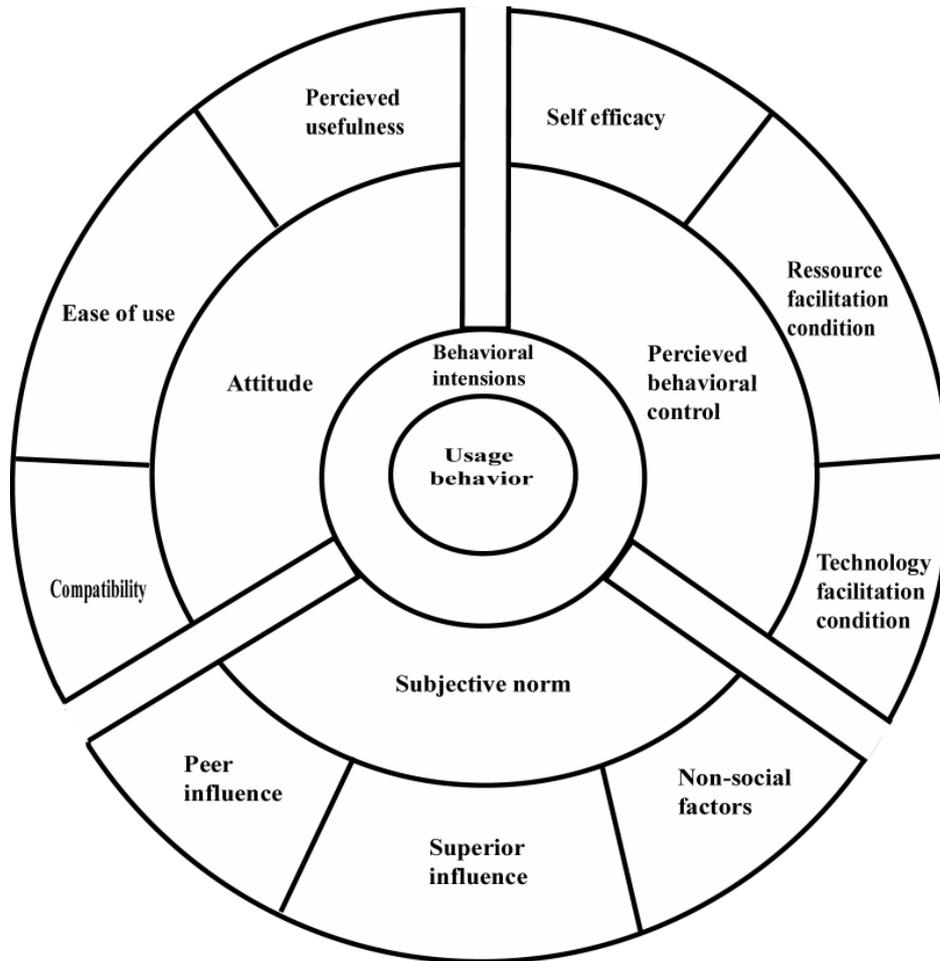
Figure 1: *Our Overall Research Model*

4. Research Methodology

This study is supported by a quantitative survey conducted in 2002, which was created to obtain some exploratory information regarding the factors affecting the adoption of the mobile Internet(Fogelgren-Pedersen 2002). In the quantitative study the primary goal was to reach a group of respondents with a potential high adoption rate of the mobile Internet. This was obtained by advertising for respondents in four of the largest union magazines in the country since they were expected to contain a significant number of mobile Internet users.

A number of 227 persons responded on the ads and filled out a questionnaire via the web, where 221 were found to be valid for utilization. Of the responses, one hundred respondents were contacted for a follow up interview, which resulted in twenty positive responses of people who would like to participate. The one hundred persons were selected for the qualitative study based on their advanced use of the mobile phone, which included usage of the mobile Internet through WAP. Seventeen were interviewed during the month of November in 2002, of which fifteen were found useful, the two remaining respondents were excluded, due to poor user experience with the mobile Internet. The primary reason for only utilizing fifteen interviews is that the other respondents lacked the experience and the knowledge to accurately draw solid conclusion based off the interviews.

The interviews had a duration around half an hour, and were carried out over the telephone instead of face to face, due to the respondents scattering geographical residential positions in the country. The interviews were conducted with open ended questions whereas analysis proceeds by extracting themes and generalizations from the collected data to present a coherent, consistent picture of the poor adoption of the mobile Internet in the Danish market.

The questions prepared for the telephone interview were aligned with Decomposed Theory of Planned Behavior, and are closely related to the questionnaire items by Taylor and Todd(Taylor and Todd 1995). All the questions were each divided respectively based on the use of network, terminal and content to determine more precisely in which area(s) there are important inhibitors and drivers to the adoption and diffusion of the mobile Internet.

The respondent group consists primarily of men with an average age of 28 years, with a high educational, and a high income level. They are all characterized as early adopters (Rogers 1995). A similar profile has been found by Aarnio et al. (Aarnio, Enkenberg et al. 2002) in the study of adoption and use of mobile services in Finland

5.   Findings

In Appendices A and B we have listed the key findings distributed on the eleven categories of the DTPB model. In this section we will highlight and discuss the main findings and discuss these findings.

Attitude

The perceived usefulness is centered on the general physical mobility and the ability to connect the mobile computer/ PDA to the Internet through the mobile device. This gives the user increased flexibility in their private sphere and work. But the convenience of the mobility is occasionally disturbed by the respondent's annoyance towards low transmission capacity and terminals with miniature displays and inappropriate keyboards.

Lacking standardized user interface to the existing WAP-services and lacking location and context based services and information, are critical factors. In additions the respondents don't experience any difference between the content they use on the mobile Internet and on the wired Internet. One respondent made the following comment:

> *"The services that I have been offered on the mobile Internet though WAP, is the same that I use on the wired Internet. I haven't experienced any differentiating between the two networks at all"*

The lack of differentiation, combined with a decline in the range of offered services and technical limitations of the mobile terminals, leave behind users who perceives the mobile Internet as not being useful enough compared to the content on the wired Internet.

Overall the respondents find the network and the terminal easy to use, yet found it difficult to configure their WAP-profile, which gave many of the respondents an inappropriate first-hand experience with the mobile Internet that lead to a delayed adoption. At the content side, the users did not find it difficult to use but underlined that the many operations and steps in most applications made it not only time consuming but also slow to use. The problem is demonstrated in the subsequent quotation:

> *"When I am using a mobile terminal there are too many operational steps involved in the process of reaching content, that might be of little interest*

> *when finally displayed. On the wired Internet you abandon the search after*
> *3-4 clicks, but on the mobile Internet I often have to go through 10 steps"*

Many respondents stated that, the problems acknowledged above, are a great annoyance and leads to limited usage of services offered on the mobile Internet.

In the compatibility area, the major barrier found is the lack of compatibility with the wired Internet (beyond e-mail) that the users found most critical. Mobile Internet adopters and the potential adopters' expectations, association, and reference to the wired Internet have lead to significant problems, because the mobile Internet does not meet their expectations. Most of the respondents advertise for services on the mobile Internet that relates to activities respectively on work and in everydaylife. Content that combines the advantages of both the mobile- and wired Internet were found to be of great interest for the majority of the respondents.

Subjective norm

Evidently all the respondents belongs to the group of early adopters, which is manifested by the low influence that friends, colleagues and superior have on their use of the mobile Internet. As one of the respondents pronounced it:

> *"My colleagues don't have any influence on my use of the mobile Internet.*
> *On work I consider my self as a pioneer in the mobile area, and my*
> *consumption of the mobile Internet is entirely driven by my own curiosity"*

Compared to the insignificant influence from interacting peers and superiors, non social factors, such as commercials and newspapers, plays a more significant role in the adoption of innovations correlated to the mobile Internet. The majority of the respondents describe these factors as instructively information, which constitutes fundamental information about the decision to use and invest in terminals, network facility and content.

Perceived behavioral control

The respondents all have high level of self-efficacy estimation hence able to use the mobile Internet without assistance. These findings excludes, that the poor diffusion of the mobile Internet could be related to the users lacking ability to utilize the technology.

On the resource facilitating conditions, the network services and content provision is evaluated to exceed the benefits. By contrast, the prices on the terminals are found adequate by the respondents.

The evaluations of the technology facilitating conditions were very critical with respect to speed for up and download and the speed when interchanging data with PDAs and portable computers. A respondent stated that:

> *"When it comes to up- and download over the mobile Internet, you are*
> *confronted with the old familiar problem, network capacity that is too*
> *slow. But you compound with it due to lack of alternatives"*

The terminals are compatible with mail and calendar functions, but the respondents do rarely synchronize between the different devices. Normally this is done through cables / docking stations at the physical locations. Not a single respondent had any examples of content on the mobile Internet that could be used in relation to other software in the daily work setting.

Overall, the respondents in the early adopter group are positive and find the mobile Internet useful. This is contradicted by their perception that the mobile Internet is lacking transmission speed, poor display capacity and inadequate keypads. Furthermore, the respondents find the content difficult to access and when they access it, there are limited

benefits for the users and lacks usability. Onwards, the respondents find the pricing exceeding the benefits. Yet, the users find advantages using the mobile Internet, primarily the flexibility in the daily life and the major part of the respondents find that the benefits using the mobile Internet exceeds the disadvantages and are confident that the shortcomings are solved.

6.   Conclusions

The qualitative study provided some interesting insights to possible areas of improvement for later adopter groups to begin utilizing the mobile Internet. With regards to the technology, there is a great need for improvement and progress made with regards to the speed of implementation of GPRS and UMTS. The realization of GPRS is progressing slowly and this indicates that the technology push strategy may not be the right way to create a demand. Our respondents clearly call for increased supply of content and better price mechanism.

On the design, the respondent's points to a extension of terminal functionalities that better support other functions than SMS and speech. This could be realized via developments of larger displays, user friendly keyboards and by focusing on the convergence between other technologies. This development is already noticeable in the new generation of terminals, which withholds considerably modification, such as a larger display with colors, more convenient keyboards based on the well known qwerty-system and by its software compatibility to Java and familiar programs like Microsoft's Word and Excel.

The use of the DTPB model in a qualitative study posed challenges in capturing the user as a network member and the complexity in that most of our respondents have got the phone from their company rather than paid it themselves. Although, the technology-centric view in the DTPB pointed to respondents' call for application that can be used in compliance with other software application, the DTPB framework has room for improvement for capturing the consumer and network issues (Pedersen, Methlie et al. 2002). Onwards, we expected to reveal a rich picture using the DTPB-model but ended with a set of factors that rather call more research and different research methodological approaches than followed here. There is room for exploring the switching role of the user from the professional settings to the role as end consumer. For most respondents the cost issue is a non-contributing factor to the low take-up of using the innovative part of the mobile Internet. The consumer acceptance of the gadgets and devices in our respondent group is primarily financed by their employer.

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Appendix A: Mobile Internet Drivers

Theory	Network	Terminal	Content	Related to use of mobile Internet
Perceived usefulness	• General physical mobility (+++) • Computer and PDA connectivity ++	• Added flexibility and effectiveness in my working procedures (++) • Physical mobility(+) • Sending and receiving emails(+)	• Traffic info is useful(+) • Downloads of news and sports results	• Added flexibility in work and everyday life(++) • The advantage accomplished by using the mobile Internet, compensate for potential incon-venience(++)
Ease of use	• The instructions for using the mobile network has been sufficient(+++) • Found all the necessary infor-mations concer-ning WAP at operators homepage	• The terminal is easy to use (+++) • The keying on terminals like Nokia Communicator is easy	• The content on the mobile Internet is easy to use(+++) • The content is easy to use but still to slow and limited(++)	• Did not find the mobile Internet difficult to comprehend the first time I got acquainted with the mobile Internet(+++)
Compatibility	• The mobility supports the way I work(++) • Sending and receiving emails support my way of working(+)	• Physical mobility at work(+++) • Sending and receiving mails irrespective of location supports my working life(+)	• Sending and receiving mails irrespective of location supports my working life(++) • In my every day life I use it to download addresses and phone numbers	• The mobile Internet is compatible with the fixed Internet in respect of sending and receiving emails (+++) • It's compatible in respect of sending a fax from the mobile phone(+) • Later on the fixed- and mobile Internet will converge an ex. is sending sms over the fixed network(+) • I think the mobile Internet is compatible with the fixed Internet, but I don't use it my self • I find my terminal compatible with other used technologies ex. my PDA and laptop
Social influence	• Colleagues had a certain influence on my choice of using the mobile Internet (++) • Friends had a certain influence on my choice of using the mobile Internet • The organization I work in had a certain influence on my choice of using the mobile Internet because they gave me a free terminal(+) • Commercials and articles had a certain influence on my choice of using the mobile Internet(+++)			

Self-efficacy	• Respondents that felt they could use the mobile Internet without any assistance (+++)(all but one) • Respondents that felt they could use the mobile Internet without any assistance the very first time they used it(+++)(all but one) • I am comfortable with new technology (+++)(all stated that)		
Resource facilitating condition	• Prices on SMS and speech has found a reasonable level • The price is high compared to the fixed network but it's a price I am willing to pay	• The terminal price is high, but I am willing to pay the price(+) • The terminal price is fair(+) • No opinion regarding price(work phone)	• Prices on ring tones are fair	• Respondents that find the mobile Internet timesaving(+++)
Technology facilitating conditions	• Mobility concerning up and download of data	• My terminal is compatible with my laptop and PDA • My terminal is compatible with my MP3 player • My terminal is compatible with outlook and my calendar (+) • My terminal is compatible with the mail server on work (+) • I have no problem with reading of the display(+)		
Attitude	• The use of the mobile Internet is a good idea(+++)(all stated that) • The idea behind the technology is good, but the implementation haven't yet been successful • Like to use the mobile Internet(+++)(12) • I find the use of the mobile Internet comfortable (+++)(10)		
Subjective norm	• I'm working with colleagues that think I should use the mobile Internet(+) • Part of my family and my friends think I should use the mobile Internet • Buying products presented in commercials(+)		
Perceived behavioural control	• I'm able to use the mobile Internet(+++)(all) • Using the mobile Internet is completely within my control(+++)(12) • Have the resources and the knowledge and the ability to make use of the mobile Internet(+++)(except two)		

+++) frequent (more than 5) ++) often (4-5) +) sometimes (2-3)

Appendix B: Mobile Internet Inhibitors

Theory	Network	Terminal	Content	Use of mobile Internet
Perceived usefulness	• Slow transmission speed (++)	• Small display(+) • Discomfort of keying • Slow transmission-speed	• To many operational steps(+) • Difficulties with Accessibility(+) • Not useful enough yet • Not enough information's and services • No different-tiations from the wired Internet • Miss standard GUI on WAP sites	• No Added flexibility in work and everyday life(++) • The advantage by using the mobile Internet, do not compensate for potential incon-venience(+)
Ease of use	• Adjustment of WAP-profile is too difficult(++) • Lack of information concerning usage of laptop, PDA and mobile network together • Lack of information concerning usage of WAP	• Miss standards graphical user interfaces between different models of terminals • Navigation on the phone is clumsy	• Services on the mobile Internet is to slow and limited(++) • To many operational steps • Using and down-loading of content is inconvenient	• Using the mobile Internet is more complex than using the fixed Internet • Adjustment of WAP profile to difficult(++)
Compa-tibility	• My use of the mobile Internet is not related to my work • Compatibility problems between terminal and operator software • The terminals usability do not support my way of working • Not aware of any content that supports my way of working (+++) • Miss easy access to support and better overview of available information's • Don't see the connection between the fixed and mobile Internet(+++) • Don't use the mobile Internet in connection with other technologies(+)			
Social influence	• None of my friends and Colleagues had any influence on my choice of using the mobile Internet(+++) • The organization I work in had no influence on my choice of using the mobile Internet (+++) • Commercials and articles had no influence on my choice of using the mobile Internet(+++)			
Self-efficacy	• Only one respondent felt he/she couldn't use the mobile Internet • Only one respondent felt he/she couldn't use the mobile Internet the first time he/she used it			
Resource facilitating condition	• The price on the network is way to high(+++) • The network don't generate enough value for	• The price on terminals with mobile Internet access is to high(++)	• Haven't used payment services because it's to expen-sive(+++) (9) • To expensive	• Respondents that don't find the mobile Internet timesaving (+++)

	the money(+++) • WAP is to expensive compared to speed and the quality of the received information's • Especially the price on GPRS is to expensive(+)		compared to the qualities of the information	• It's time-consuming compared to the speed and the quality of the outcome(+)
Technology facilitating conditions	• Concerning up and download, the network is to slow(+)	• My terminal is compatible with other technologies, but transmission speed prevent me for using these features • Display is to small (+++) • Keying on the mobile is to difficult	• Have no experience of content from the mobile Internet that is compatible with other content I use during my day (+++)(9)	
Attitude	• I don't like to use the mobile Internet(+) • I don't find the use of the mobile Internet comfortable(++) • Display to small and the keying is terrible			
Subjective norm	• I'm not working with colleagues that think I should use the mobile Internet(+++)(12) • No one in my family and none of my friends think I should use the mobile Internet(+++)(13) • I don't buy products presented in commercials(+++)(11)			
Perceived behavioral control	• The use of mobile Internet is not completely within my control(+) • I have the resources and the knowledge and the ability to make use of the mobile Internet(+)			

+++) frequent (more than 5) ++) often (4-5) +) sometimes (2-3)