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Impact of Mobile E-Mail in Corporate Environment

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IMPACT OF MOBILE EMAIL IN CORPORATE ENVIRONMENTS

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Abstract

Mobile email is the extension of Internet email on mobile devices. It is a recent phenomenon, and has not been researched broadly yet. This paper provides a contribution to fill this gap and investigates the domestication of mobile email in Swiss companies. The research showed that mobile email is becoming an important tool, in particular for mobile workers. It enables an efficient use of short down times; it is used for communication, coordination, collaboration, and even for dealing with complex matters on the move. Due to an increased dynamism in communication, mobile email results in improved relationships with customers, co-workers and supervisors.

Keywords: Mobile email, domestication of mobile email

1 INTRODUCTION AND MOTIVATION

Email based on the Internet, has spread with tremendous speed and is considered the most successful communication tool yet devised. At present there are millions of email users worldwide who often spend significant portions of their work time using email to communicate, coordinate and to manage information. Parallel to the development of the Internet and email services, the usage of mobile telephones has proliferated in recent years. In Western Europe, penetration increased from 87.3% in 2004 to 95.3% in 2005 [CSFB Research 2005].

As email became increasingly accepted, some mobile users began trying to find ways to have their email forwarded to their pagers. This development led to Research in Motion to pursue this opportunity by launching the mobile email solution with BlackBerry towards the end of the 1990s [Ryans 2004]. Mobile email is based on Internet email and offers users of handheld devices the possibility of sending and receiving email from their mobile devices wherever they are. The emails are “pushed” out to the handheld device like they would be received at a user’s desktop. Mobile email solutions allow one to compose, forward and respond to emails exactly in the same way as with an email application on a personal computer. It furthermore allows filing to email folders, which have been previously defined in the PC email application, as well as real-time synchronization with a calendar. A mobile email user may receive emails from another mobile email user, or from a PC user.

Currently only 20% of companies are following a coordinated strategic adoption of a mobile email solution, more than 20% are adopting it for certain working groups, and around 45% are conducting pilots [Axby and Bamforth 2005]. Around 8 million corporate workers worldwide are using mobile email from different solution providers, and Gartner predicts that by 2008, 50% of workers using PC email will have access to mobile email [Basso and Dulaney 2005].

Despite the fast spread of mobile email, its integration into our social and work life is still in its infancy, and a new phenomenon that has not been subject to broad research yet. Just as any other technology, mobile email has the potential to impact the way employees use email and work together. The aim of this paper is to explore how business professionals use mobile email in every day life, and

what the implications of mobile email are. In order to achieve the stated research goals, a three-steps research design was chosen: review of the most recent literature on similar phenomena, qualitative analysis based on structured interviews with representatives of companies using mobile email, and a quantitative study among users of mobile email in three organizations with headquarters in Switzerland.

The research showed that, mobile email is becoming an important tool for mobile workers. It enables an efficient use of dead down time; it is used for communication, coordination, collaboration, and even for dealing with complex matters on the move. Due to increased dynamism in communication, it results in improved relationships with customers, co-workers and supervisors.

The content of the paper is structured as follow: Chapter 2 describes the research design, chapter 3 summarizes the results of the state-of-the-art, chapter 4 discusses the qualitative research, and chapter 5 treats the quantitative research. Chapter 6 provides a summary and conclusion.

2 RESEARCH DESIGN

The main research question is how business professionals use their mobile email in every day life, and what the implications of mobile email are. This research question precipitates the following research sub-questions:

- What are the characteristics of mobile email usage?
- How do users subjectively feel about mobile email?
- How does mobile email impact the way of communicating in companies?

The aforementioned research questions put the user and the way the user applies and integrates mobile email into his daily work at the center of the analysis. This research focus differs from the typical technology acceptance and adoption research, where the main goal is to assess the reasons for adopting or not adopting a certain technology. Whereby, adoption is considered a decision that leads to using an innovation with all its functionalities [Rogers 2003].

Given the focus of the research, the "Domestication of Technology Theory" was chosen. This theory was introduced by Silverstone in the beginning of the 90s [Zhao 2005], (see also [Silverstone and Haddon 1996]). Domestication focuses on the question how technology becomes integrated into a user's daily life, and what the impact of technology on the social environment of that user is. The major argument of the theory is that technological innovation is a process not an event, and that adoption of technology is guided not only by the features of the specific technology but also by the social context of the user [Haddon 2003]. Domestication research has its roots in sociology, anthropology and ethnology. The basis for explaining the consequences of technology domestication are therefore more varied, and are based on a variety of sociological, ethnological and social-psychological theories. Domestication is generally a micro-level approach [Ling 2004]. Most domestication studies are explorative and based on a qualitative methodology. Pedersen [2001] and Pedersen and Ling [2002] introduced quantitative research approaches by combining the "Domestication of Technology Theory" with the Technology Acceptance Model (TAM) [Davis 1989] with the aim of studying the adoption and domestication of mobile services. They focused on research on how a mobile service is used and what the social consequences of its usage are.

Mobile email is a recent phenomenon and not researched broadly yet. Therefore, in order to get insights about mobile email usage from different perspectives and to assure triangulation of data, the investigation of mobile email usage by professionals was based on a combination of qualitative and quantitative research approaches as proposed by [Cropley 2002]. The qualitative phase will consist of two steps: a state-of-the-art analysis and interviews with Chief Information Officers (CIO) and mobile email project managers in companies. These two steps should provide enough insights about mobile email usage to formulate hypotheses, and subsequently test hypotheses in the quantitative phase.

The research has been further delimited as follows: for the purpose of this explorative study, the survey was conducted with BlackBerry mobile email users only, so as to ensure a level of homogeneity in the sample population. In addition, the survey was conducted in international companies that have offices in Switzerland. The research considered the usage and impact of mobile email from two perspectives: the individual, and with respect to how mobile email impacts communication in companies. However, due to limitation in space, not all considered aspects can be presented in this paper with the same detail. While the presentation of the results from the qualitative research will contain an overall summary, the presentation of the results from hypothesis testing will focus on the impact of mobile email on communication.

3 RESULTS FROM ANALYZING THE STATE-OF-THE-ART

The first step assessing the state-of-the-art is the identification of relevant research areas. Given the research focus on the one hand, existing research related to domestication of mobile email is relevant. On the other hand, given that mobile email is one type of computer-mediated communication (CMC), research on media and communication is of relevance as well. The research on media and communication considers the communication enabled through computer and electronic media, and the changes that might result from that communication. The paragraphs below summarize the results of studies that have been conducted on domestication of mobile technology and CMC.

3.1 State-of-the-art in domestication of mobile technology and services

The analysis of the state of the art in domestication and adoption of mobile email quickly revealed that there is almost no research available on this subject. There are some studies related to the adoption of mobile services. However, most of the studies analyze how traditional telecommunication services, like voice and SMS services, have been adopted over the past 10 years. Very few studies exist, like [Pedersen et al. 2002], [Sidel and Mayhew 2003], and [Fife and Pereira 2003], which focused specifically on the adoption of mobile Internet services. As a consequence, in order to get more insight, the analysis was extended to domestication of mobile phones and mobile services in general.

[Katz 1997] suggested that by having real time communication anywhere/anytime people can better coordinate themselves and help achieve greater efficiency by cutting down the costs of acquiring information and coordinating schedules. In a similar way, [Ling 2004] proposed that mobile phones are used to manage appointments and to organize schedules.

[Palen, Salzman and Youngs 2000] reported that the use of mobile phones is influenced by social context. New users tend to rapidly modify their perceptions of social appropriateness about mobile phone use, so that the actual nature of use frequently differs from what the users initially predict. (see also [Pedersen and Ling 2002]). [Mante-Meijer and Ling 2003] observed that “people are part of a system of values, norms and attitudes that is part of their own group culture and part of the larger culture of their country. Attitudes and values mediate the needs that come forth from the experiences in daily life, and the solutions an individual seeks, by using services and technology.”

[Townsend and Batchelor 2005] suggested that mobile communication has facilitated balancing work and leisure, but [Katz 1997] also found that mobile communication mixes two separate spheres, i.e. the personal and professional. Some members of a mobile communication user’s family enjoyed an increased quality of life, while other family members experienced the opposite.

3.2 State-of-the-art in media and communication research

Media theories concern the consequences of the domestication of new media on communication. They comprise statements comparing the impact of new communication media and already existing ones, in particularly face-to-face communication. The most important aspects that have been identified are:

The Choice of Media for Communication - is guided by the following factors:

- *The media richness* - According to Media Richness Theory [Chang 2005], technical and non-technical forms of communication have different capacities to authentically transmit meaning and all aspects of communication. The personal face-to-face communication is a “rich” form of communication. It offers a variety of parallel channels (language, tone, gesture, facial expressions, etc.), enables immediate feedback, provides a rich spectrum of expression, and allows the transmission and perception of personal moods and emotions. On the contrary, mediated communication has a lower degree of media richness [Meissner 2005].
- *The social presence* - is the perception of physical presence during an interaction. This theory suggests that different media offer different levels of social presence [Short, Williams and Christie 1976]. The choice of a medium is based on the need for social presence during a particular task. Therefore, an individual would rather choose email as the communication medium, if there was no or less perceived need of physical presence to accomplish the task [Huang 2002].

Effects on relationships - [Ducheneaut 2002] showed that the introduction of communication technologies, such as email, interacts with the relational power games already in progress inside specific organizational configurations. The mechanism by which a technology may affect the corporate structure depends on the nature of the games played inside specific organizational structures. The flow of information through email improves communication, and therefore the relationships among staff can be improved [Lau et al. 2001]. Furthermore, individuals learn to link with others throughout the organization, many of whom they may have never met [Fulk and DeSanctis 1995].

Effectiveness and performance - [Hightower and Sayeed 1995] found CMC was less efficient and less effective compared to face-to-face communication. It requires more time and effort to achieve mutual understanding as the task becomes more complex and equivocal. [Straus and McGrath 1994] also showed a negative impact of CMC compared to face-to-face communication when it comes to productivity, but few differences regarding quality. [Chidabaram and Jones 1993] found similar results in testing effectiveness between audio-conferencing and face-to-face meetings.

Change of opinion or choice - One central question about CMC is whether or not, as well as how, the form of communication influences social relations, communication quality, and processes. Research has shown that CMC systems can be used for complex communication. The results of problem-solving and decision-making with CMC turn out to be qualitatively equal to face-to-face communication, but it takes more time, and it is harder to reach a consensus decision [Adrianson and Hjelmquest 1999].

Summary of state-of-the-art: A survey of the state-of-the-art revealed that despite the very fast penetration of mobile email in companies, it has not been considered as a separate topic in research yet. There are studies about organizational changes brought on by email, or about communication with mobile devices in general. In addition, existing studies on the mobile environment are focused on the behavior of private users. There are very few that deal with the adoption of mobile applications within a company. Consequently, research on similar phenomena, such as domestication of mobile phones, mobile services, and on other CMC, has been evaluated. Hence given the research goal, the emphasis was on published findings dealing with the social impact and influence of mobile technologies and CMC. The following aspects, derived from the initial literature review, have been considered during the construction of the qualitative research and the hypothesis: self-organization, social context, social control, efficiency, work/leisure balance, media richness, effects on relationships, perception of partner, uninhibited behavior, and change of opinion.

4 RESULTS OF THE QUALITATIVE STUDY

The aim of the qualitative research was to get a better insight about domestication and impact of mobile email from the company perspective, by interviews with CIOs or persons responsible for the introduction of mobile email in corporation. For the purpose of this study, problem-centric face-to-

face interviews have been conducted with one or two decision makers (CIOs or mobile email project managers) from seven companies representing the following industries in Switzerland: audit & consulting, tobacco & food, bank, chemicals, medical products and services. The interview guidelines have been designed based on the results of the literature review. They were composed of three parts:

- Decision process regarding introduction of mobile email in the company
- Consequences of mobile email on the user
- Consequences of mobile email on the communication and relationships within the organization.

The interviews has been transcribed and analyzed based on a descriptive content analysis method as suggested by [Cropley 2002]. Here is a summary of the results:

The interviews clearly pointed out that the decision to introduce a mobile email solution was business and user driven (either from top management or from CEO). Introducing mobile email is perceived as a necessity to meet a new way of communicating in society and at work. The interviewees stated that the introduction of mobile email does not bring any comparative advantage, which means that their market would not be influenced depending on the usage of a mobile email solution or not, but it would definitely damage the business or the relationship to target groups if they were not to have it.

The expectations placed on mobile email solution clearly focused on providing a complementary communication service, and supporting mobility in order to elicit fast reactions from mobile email users. Indirectly, one of the main expectations of using a mobile email communication tool is the return on investment; this expectation is said to have definitely met through the more efficient way the users work and answer their email. The biggest benefit, mentioned by all of the companies interviewed, is the possibility to react quickly. Shorter reaction times improve efficiency and productivity within the organization. Most of those expectations were met.

All of the interviewees stated that a mobile email device has brought positive changes to the user's work environment, along with negative ones; they judge the overall effect as either neutral or else slightly positive. All of the interviewees agreed that each BlackBerry user goes through a learning phase: after a couple of months the user changes the way he uses the device and manages mobile email differently. Next to an increase of efficiency, and a positive return on investment, the use of a mobile device increases the number of working hours. The user becomes more reachable despite being officially in his private environment; this tends to have negative consequences for the users' private life.

Mobile email brings positive and negative changes to managing the increased flow of information and number of emails. While it is a challenge to read every single email received on the mobile email device, it does allow the user to reduce the uncertainty related to the lack of information when absent from the office and to perform an initial triage of the email so that he can concentrate on the more important messages when using a laptop or PC. Mobile email has additional negative consequences: the quality of meetings suffers from users constantly checking their email with their mobile email device. Some of the interviewees complained that those present are not as concentrated as they are expected to be. Consequently, meetings are less efficient.

By observing the mobile email users in their companies, the interviewees stated that the users no longer know which communication tool to use in which situation, and often use their mobile email device in situations where another communication tool like phone or face-to-face communication would be better suited.

Conclusion qualitative study: Surprisingly the interviewed company representatives were clearly aware of the negative impact of mobile email, like the blurring between private and professional life, the poor written quality of mobile email, the increasing flow of information, or the inadequate use of mobile email on their employees, but they consider the risk not having the option bigger than the negative impact on the users. None of the companies are planning to establish a set of behavioral rules

to reduce the negative aspects of mobile email on personal time because they think this probably would have no impact. In addition, they consider each mobile email user to be responsible for how she manages this communication device and expects each user to self-regulate her usage.

5 RESULTS OF THE QUANTITATIVE STUDY

The aim of the quantitative study was twofold: to analyse domestication and impact of mobile email from the users' perspective and to falsify the assumed hypotheses about impact of mobile email. Based on the results of the qualitative study an online questionnaire and hypotheses were developed. The questionnaire was sent electronically by email to 758 BlackBerry device users within 3 big companies (in the data tables: tobacco - no. 1, bank as no. 2, and audit & consulting as no. 3). The questionnaire focused on the domestication of mobile email and treated the following sub-subjects:

- What are the characteristics of mobile email usage?
- How do users subjectively feel about mobile email?
- What are the changes in the way business professional are communicating and collaborating together?

The response rate was 52,77% as 400 users filled in the questionnaire.

5.1 BUILDING HYPOTHESES

Several features of mobile email have the potential to increase communication dynamism. First of all, due to the push delivery, emails always are sent to the receiver automatically. Moreover companies expect Blackberry users to be always reachable. Both factors together lead to new ways of time management, in exactly the same way as people feel obliged to answer email on a PC, so do they feel obliged to answer a message as soon as they receive it [Lantz 2003]. Another factor that supports the increase in communication is the fact that mobile email users utilize "dead time" (e.g. travel or waiting time), efficiently by reading and answering their email [Gibson and Sorensen 2004]. This fast reaction time increases communication dynamism.

Studies of the relationship dynamics of computer-supported teams found that: with CMC the development of friendly relationships among team members requires more time, relationships however are improved, and there is increased potential to communicate with a greater number of employees. With mobile email, this phenomenon might be reinforced. The literature and the input from the qualitative interview give rise to the following hypothesis:

→ Hypothesis 1: The higher the perceived communication dynamism, the more positively the relationships with supervisors, subordinates and customers have been influenced

The literature showed that CMC results in uninhibited behavior and to a different understanding of partners. Email as a communication tool has already introduced a new way of formulating written language. Mobile email – because of the mobility and the size of the device – emphasizes the "nonchalant" way of writing or answering an email [see also Bordia 1997]. Mobile email is instant, global, quick and easy. As with email, it becomes easy to be rude, to use language incorrectly, to make stupid mistakes, and to do irreparable harm. These CMC technologies focus attention on the message, transmit social information poorly, and do not have a well-developed social etiquette. Therefore, [Kiesler et al. 1985] suggested that these technologies might be associated with less attention to others, less social feedback, and depersonalization of the communication settings.

The richness of a media suggests that the medium should match the equivocally or richness of the information being conveyed [Zack 1994]. Electronic messaging, in contrast to face-to-face communication, is less rich, as it is usually restricted to a single text-based channel, reduces or

eliminates social presence, and constrains communicators to respond to or interrupt whole messages [Zack 1994]. Therefore, the mobile user might prefer face-to-face or telephone communication to discuss complex issues and to influence the other person's reaction or decision. This leads to the following hypotheses:

→ **Hypothesis 2: More than half of the BlackBerry users will not use BlackBerry to solve complex issues because it is not an adequate communication tool for that.**

→ **Hypothesis 3: More than half of the BlackBerry users do not use BlackBerry to influence another person's reaction or decision.**

5.2 Analysis of quantitative results based on descriptive statistics

The online survey among online mobile users revealed that the typical Blackberry user is: male, between 30 and 50 years of age and is away of his desk at least 20% - 50% of his time at work. About 49% of the surveyed users are from middle management while about 19% are equally distributed in both upper and lower management. The high percentage of male users reflects the low portion of women in management positions in Swiss companies.

Most of the users (77,8%) have been using BlackBerry less than 18 months. A large segment of users (40%) receive about 20 - 40 emails per day, and 29% between 40 and 60 emails. This shows that there is a strong tendency towards an increased number of emails. The majority of the interviewed persons (73.5%) answers less than 30% of the emails with the Blackberry. Most of the users (87.8%) are using the device at home in a personal environment. This clearly shows that the boundaries among work and private life are blurring. About 1/3 of the users appreciate to be permanently reachable a lot (36%). Only 12.8% do not appreciate this kind of accessibility.

For most of the users (62.3%), mobile email resulted in an increase of working hours. 41.2% of the Blackberry users often read or read a lot email during vocation and around 33,1% during leisure time. Users (90.2%) experience a strong increase in efficiency by having the possibility to react fast with mobile email. 49.6% of the users indicated that the use of Blackberry strongly allows them to better manage their time. Being constantly up-to-date with their emails is very important for 74.8% of the users. Around 65.9% of the users perceive that mobile email allows them to be more flexible in their job. Around 62.3% of the users believe that Blackberry significantly improves their professional efficiency.

The findings above reveal that mobile email is considered by users to be an important tool. It has a positive impact on the user's efficiency and flexibility. However, this positive effect goes together with the negative effects on balance between work and leisure, and results in increased working hours and higher pressure on employees to be permanently in touch. The findings related to the impact of mobile email on communication are described in more detail in the next section.

5.3 Results from hypothesis testing

Testing of hypothesis 1: Mobile email has either no influence or good influence on the relationships with others colleagues, the manager, customers and subordinates. With a mean of 4.17 mobile email brings a significant improvement in the relationship with customers.

	Other colleagues		Your manager		Your customers		Your subordinates	
	Mean	3,60	Mean	3,71	Mean	3,96	Mean	3,88
Category	Frequency	%	Frequency	%	Frequency	%	Frequency	%
Very bad	1	,3	2	,5	2	,5	2	,5
Bad	2	,5	2	,5	2	,5	1	,3
No influence	226	56,5	183	45,8	113	28,3	149	37,3

Good	115	28,8	135	33,8	119	29,8	126	31,5
Very good	39	9,8	62	15,5	100	25,0	68	17,0
Non applicable	17	4,3	13	3,3	44	11,0	43	10,8
Missing	0	0	3	,8	20	5,0	11	2,8
Total	400	100	400	100	400	100	400	100

Table 1: Influence on relationships

The above results confirm findings regarding the impact of CMC on relationships in companies in general. The Huang study [2002] demonstrated that the frequency of email communication is a significant factor in interpersonal relationships between knowledge workers and their immediate supervisors. First, higher frequency of communication may lead to higher overall volume of information exchange. Second, frequent email communication enables supervisors and subordinates to stay in contact with each other, reducing chances for misunderstanding. Third, frequent communication may assist in the development of new communication structures and cultures. Compared to email, mobile email transcends the frequency of communication with email. Considering the more intensive communication enabled by mobile email, the substantial result on the perceived improvement of the BlackBerry user with his customer can be well understood. 45.8% of the interviewees felt that the use of BlackBerry has increased or strongly improved communication; nunication dynamics (c.f. 1).

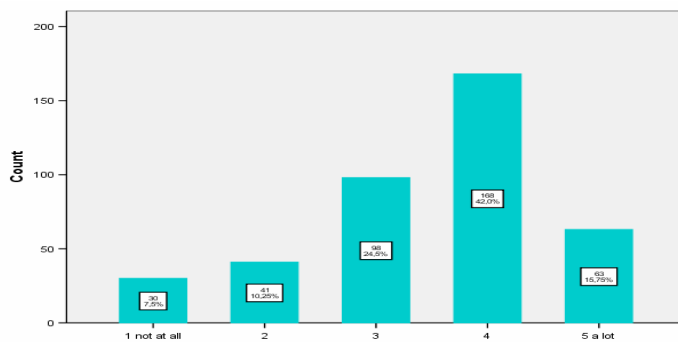


Figure 1: How Blackberry user perceive increased communication dynamics

The above data is important for the testing of **Hypothesis 1: The higher the perceived communication dynamism, the more positively the relationships with supervisors, subordinates and customers have been influenced.**

Hypothesis 1 predicted that the perceived increase of communication dynamism is positively related to the perceived influence of BlackBerry on the relationship with colleagues, managers, customers and subordinates. The significance for H1 is: $r=0.271$ ($p<0.01$) for the correlation between increased communication dynamism and relationship with colleagues, $r=0.348$ ($p<0.01$) for the correlation between increased communication dynamism and relationship with manager, $r=0.361$ ($p<0.01$) for the correlation between increased communication dynamism and relationship with customer, and finally $r=0.257$ ($p<0.01$) for the correlation relationship with subordinate. The variables “influence on relationship with colleagues”, “influence on relationship with managers”, “influence on relationship with customers” and “influence on relationship with subordinates” are all positively correlated with the perceived increased of communication dynamism. The more the communication increases, the more the quality of the human relationship improves.

→ Hypothesis 1 is supported by the data.

Testing of hypothesis 2: Complex and complicated issues are handled very differently from company to company. Although around the same amount of respondents (64%, 71.4% and 60.8%, mean 67.8%) answered that they communicate about complex and complicated issues “sometimes, it depends on the situation” in all 3 companies, companies 1 and 3 have a higher response quota for the statement

the situation				271 100,0% 67,8%
	17 18,7%	41 45,1%	33 36,3%	91 100,0%
be discussed otherwise	34,0%	16,5%	32,4%	22,8%
total				
	% of Total	12,5%	62,0%	25,5%
				100,0%

Table 2 Communication about complex and complicated issues

The above findings are important for testing of **Hypothesis 2: More than half of the BlackBerry users will not use BlackBerry to solve complex issues because it is not an adequate communication tool for that.**

But with a mean of 67.8% of the respondents stating they sometimes use BlackBerry for solving complicated issues, BlackBerry is definitely used to solve complex issues.

→ **Hypothesis 2 is not supported by the data.**

Against all expectations based on existing CMC related literature, mobile email is used to solve complex issues. This aspect is surprising and new. It raises the question of whether or not the topic and situation of the communication no longer determine which communication tool is used. It means that the richness of the communication tool might not be relevant for assessing its adequacy for a given situation or topic.

Testing of hypothesis 3: Influence attempts may be problematic with CMC devices like BlackBerry. Social contextual cues, which emanate from physical settings and member attributes, regulate influence attempts. When physical settings are not shared, and members are invisible, influence can emanate only from the message text [Finholt and Sproull 1990]. A very large number of the respondents answered to sometimes using mobile email to influence the other person’s reaction or decision. A very small segment stated to always use it for this purpose.

Category	Frequency	%	Cum %
Yes, always	29	7,3	7,3
It sometimes happening	264	66,0	73,3
Never, I prefer using other communication methods	107	26,8	100,0
Total	400	100,0	

Table 3: Taking influence on other's reaction or decision with BlackBerry

This data is relevant for testing of **Hypothesis 3: The BlackBerry user would rather not use BlackBerry to influence another person's reaction or decision.**

As previously mentioned in the analysis of each single variable, a very large number of the respondents answered to sometimes using their BlackBerry device to influence the other person's reaction or decision. A very small part stated to always use it to this purpose.

→ **Hypothesis 3 is not supported by the data.**

Similar to Hypothesis 2, the fact that Hypothesis 3 has also been rejected, begs new questions about which communication tool is appropriate in what situation. Mobile email seems to be used in situations where the existing literature would have anticipated that face-to-face communication or the telephone conversation would be more appropriate.

Conclusion regarding quantitative research: The fact that several hypotheses have not been supported can be explained by several factors. As previously mentioned in chapter 3, the literature was one source of knowledge for hypotheses formulation. However, available literature deals with the impact of either mobile telephony or email. It seems, that the use of mobile email, as a new communication tool, is very different from the use of a mobile phone (because use is text-based) and from the use of an email system (because of the mobility aspect). Hypotheses were formed with the expectation that mobile email would be a complementary communication tool, used only when there is no other alternative. However, the rejection of the two last hypotheses shows that mobile email assumes a higher importance for mobile users. Mobile email is used for solving complex matters and in many cases for influencing others. It has also become an important tool for maintaining and creating relationships to others.

6 SUMMARY AND CONCLUSION

In this paper domestication of mobile email was analyzed. Thereby a research design consisting of three interrelated phases was employed: 1) a broad analysis of the state-of-the-art; 2) qualitative research based on problem focused interviews; and 3) quantitative validation.

The following concepts resulting from the literature analysis were used for constructing hypotheses: media richness, impact of CMC on relationship and perception of partner, as well as impact on effectiveness of work. The qualitative study revealed new aspects resulting from the specific features of mobile email. In particular, these were the following aspects: the introduction of mobile email was initiated in most cases by the users themselves; and there is growing need for increased availability and efficiency, better optimization of dead time, and constant knowledge flow in companies. However the qualitative research revealed also some negative aspects of mobile email, such as the increase of working hours, the blurring of the line between work and private life, and the use of mobile email during meetings and face-to-face conversation with others. The quantitative survey confirmed these findings from the qualitative study. Hypothesis testing confirmed furthermore the findings from other CMC studies regarding the positive impact of increased communication on improvement and intensification of relationships among communicating parties. The implication of the Media Richness Theory that, media richness is one criterion for choosing a communication tool was not confirmed.

The study has several limitations. It focused on BlackBerry users in three international companies having their headquarters in Switzerland. However, BlackBerry is the market leader for mobile email and the results can be generalized for other technologies as well. Less generalizable are the results with respect to other countries. There might be significant differences in the usage of mobile email in other regions as the USA and Asia. Another limitation of the study was the focus on the impact of mobile email on communication in companies and on mostly positive effects of mobile email. The broader overview resulting from the qualitative research revealed however, that there are also significant negative impacts of mobile email.

In summary, this study showed that mobile email plays an important role for mobile workers. It is not only a niche tool. It is used for complex problem solving and for influencing communication partners. Mobile email creates a new genre in communication within companies that needs to be further researched. Possible topics of future research are: deeper investigation of reasons for using or not using mobile email as response medium (as mentioned above only 30% of emails are answered with the Blackberry), specific usage patterns, and comparison of language and communication patterns with Blackberry and Internet mail.

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