Electronic Mail and its Possible Negative Aspects in Organizational Contexts

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Electronic mail (e-mail) has become the medium of choice in most organizations because of some of its special features. E-mail, like all computer-mediated communication, changes the way we interact and has therefore an impact on working conditions, sometimes in a negative direction. Research findings so far show divergent opinions about how e-mail has influenced work.

The main purpose of this thesis is to understand and explain if and why there are possible negative outcomes of e-mail usage in organizations, and to use the findings to develop a guiding model for organizational e-mail use. The definition of negative outcomes in organizational e-mail communication is defined as everything that prevents or makes it difficult for us, as actors in the organization, to create and regulate our common social reality in order to achieve desirable goals. In order to meet the goals set, earlier research in the area Computer Mediated Communication (CMC) that focus on the effects on the social system was used. This research is mainly based on theories of media choice and communication theories, which offer a valuable contribution for understanding why e-mail might be used in improper ways in organizations. Empirical data was collected in several steps using different techniques, e-mail surveys, face-to-face in-depth interviews, Internet searches, focus groups and a web survey. The target group was managers in different kinds of organizations, but also administrative staff and teachers. The result shows that there are several reasons why e-mail usage might be a problem in organizations like expectations of fast feedback and being constantly updated, post absence backlog, too much information in e-mail, too many incoming e-mails, irrelevant information, decreased personal contact, a more sedentary work environment and e-mail splitting the respondents' time.

The contribution of this thesis is that possible negative aspects of e-mail use in organizations are due to a combination of factors. To overcome any organizational disadvantages of e-mail it is vital to consider the e-mail users' behaviors, feelings and attitudes in a specific organizational context in combination with e-mail's special features. A number of guidelines are presented to help organizations and individuals make e-mail use more efficient and satisfying.
Keywords: E-mail, CMC, miscommunication, negative effects, organizational communication, media choice, communication competence, e-mail competence.
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At last, even if this page is in the beginning of the thesis, I will articulate my deep and sincere gratitude to those people as well as organizations who have given me the opportunity to complete this work. It has not been done without obstacles. I have been challenged, sometimes depressed but also encouraged and inspired by lots of people. It is impossible to thank all of you but I think that even if you do not find your name in this acknowledgement you know yourself that you have been a support and inspiration during the time I have been trying to get one legitimate basis for being a university teacher. It is common to look upon a doctoral thesis as a journey and this is probably true, but in my opinion it has been the journey itself that has been the goal and not the destination.

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1 Introduction

In the beginning human ancestors did not communicate using a language and were therefore mainly dependent on body gestures to understand each other. Between 100,000 and 150,000 years ago oral languages developed (McWhorter 2002; Pinker 2000), something which changed human conditions thoroughly. The written language developed some 5,000 years ago and had a vital importance for our lives. The art of printing made it possible to spread the written word to a broader public. The next important step for people in general was the development of the telegram and some 100 years ago came the telephone. There are indeed many steps leading to today's monumental progress in information technology.

This dissertation is not a work about information technology in general but an account of if, and in that case, how communication in workplaces has been influenced by e-mail – one very common computer application in today's workplaces (See for example Riva 2002). Since e-mail was introduced several other means of electronic communication have been commonly available. Instant messaging, for example, is increasingly used at work, but e-mail is by far the most popular form of computer-mediated communication in the workplace (Heide 2002; Dabish et al 2005). People working together choose e-mail as a tool more than 9 times out of 10 when communicating electronically (Levitt & Mahoval’d 2002). One reason for this is that e-mail is asynchronous, i.e. the communication is independent of time and space, one important feature of e-mail that makes it efficient in many situations. But e-mail is also considered the media of “miscommunication” because of its special features. Riva (2002:198) explained that e-mail is a special form of communication that “lacks the rules on which effective interaction depends.” Smith (2005), for example, thought that e-mail has become one way of keeping informal conversation going and that e-mail because of its appearance of speed may generate unrealistic expectations of rapid responses causing problems in organizations.
Dainton and Zelley (2005) stressed that communication in the world of business is synonymous with information exchange but the explicit definition of communication is built on another definition. Conrad and Poole (1998) for example, defined communication as a process by which people create, sustain, and manage meaning interactively. There are a number of stories and reports in both management magazines and scientific research papers about e-mail use in organizations focusing on miscommunication and its consequences. For example, a recent article (Brady 2006) told the story about a CEO that saw signs of overdependence on e-mail. He therefore told his staff, 275 employees, to pick up the phone or meet face-to-face instead of sending e-mail on Fridays, but he also encouraged the staff to reduce e-mail use in general. The requests were not only positively accepted but “[…] in less than four months, the simple directive was reported to have resulted in quicker problem-solving, better teamwork, and, best of all, happier customers.” (Brady 2006:109). E-mail usage dropped 80% necessitating improved face-to-face communication.

Computer Sweden (2007) reported that the e-mail flood has become harder and harder to handle in Swedish business enterprises. Together with constantly increasing e-mail traffic, demands on storage and the needs to search e-mail messages are growing. Solutions are becoming more and more drastic. Some companies are limiting how many e-mails each employee is permitted to send and spam filters are more and more selective. One organization mentioned in the article was Volvo Cars Corporation.

Petter Halling, project leader at Volvo Cars Corporation, got a commission in 2004 to develop the next generation intranet. Through 50 interviews Halling found that it was not the intranet that was a problem, but e-mail. People in general felt disturbed by e-mail and to find out why this was the case several workshops were carried out. The conclusion from the workshops was that e-mail is a working tool like all other working tools, but that every employee is supposed to know how to use it without education. Introducing e-mail therefore ought to be compared to introducing new working tools in the production area which are always preceded by education. Besides lack of education there was also a demand for guidelines and policies about the use of e-mail.

An extensive educational effort – the E-mail Effectiveness Program – an investment of 37 million SEK, started in September 2006, and will be finished by February 2008. At my interview in May 2007 3,000 employees out of 9,000 had passed through the education program. To achieve a radical change of e-mail use pattern, to improve working conditions and to increase productivity by approximately 2.5%, the critical mass (Markus 1987) had not yet been reached according to Halling, and therefore it is too early to tell what the outcome will be. But the results at that stage showed a time saving of about one hour a week
per individual and a reported improved work environment and a higher quality in the deliverables. Halling also theorized that e-mail problems often have to do with attitude. Users in general have very different ideas about how to handle incoming e-mails, but when it comes to sending e-mails people have very similar ideas. Very common ideas that may be an important part of attitude problems were that problems in e-mail communication in the eyes of the employees do not have to do with themselves, but with others.

Today e-mail is taken for granted, and sometimes we forget that Internet and e-mail only became commonly available in Sweden 10-15 years ago. The development of e-mail has consequently enriched and simplified our existence both privately and professionally and has made it possible, among other things, to reach out to all employees, regardless of time and space, more or less simultaneously. The ease of transmission can create a temptation to use e-mail without thinking through if and how the information should be distributed and how a communication process could be developed. Since the obstacles for sending e-mail are low it is interesting to study if there are limits to what can be regarded as suitable use of e-mail. Human communication is complex, employing various actors, topics and arenas. The purpose of human communication also varies; it may be used to transmit facts, influence opinions and feelings, or sell a product. An e-mail system can help users to meet many of these different objectives. E-mail is fast and does not require a high level of technical skill to use. The language used in e-mail lies somewhere between oral and written language, helping the user to be more candid when sending messages. And finally, e-mail is not expensive to operate.

However, under certain conditions, the advantages of e-mail may turn into disadvantages. The simplicity and rapidity may constitute too low an obstacle; messages may be sent that ought to be distributed through another medium or that should not be sent at all. An e-mail message is inexpensive, but it may incur costs because of the demands it places on the recipients.

Academics and management thinkers are stressing the fact that it is not the stuffed inboxes or the occurrence of spam that are the main problems, but the fact that we have a tendency to misinterpret the content of the message and that we more and more use e-mail as a substitute for a more nuanced conversation face-to-face (See for example Kruger et al 2005). Suutari (2001:12) drew attention to: (1) E-mail tends to reduce face-to-face communication and therefore isolates the individual who becomes an isolated information-processing unit, (2) the volume of information can overwhelm the individual and his outlook will be narrowed and (3) the speed of the transmission of information can create a feeling of urgency and the individual may act in haste without considering the implications. Beaver (2004) thought that “most e-mail problems occur due
to a series of poor choices over time” and I think that he is partly right but that the e-mail problems or e-mail miscommunication are a more complex matter which leads to the research question stated in the next paragraph.

1.1 Research questions
Since the advantages of e-mail may turn into disadvantages the main concern of this thesis is: Under what circumstances is e-mail an improper means of communication?

The definition of negative impacts on organizational communication, or e-mail miscommunication, in this thesis is everything that prevents or makes it difficult for us, as actors in the organization, to create our common organizational reality in order to achieve desirable goals on both organizational and individual levels. This is important since efficient organizational communication helps the members to be integrated in their work environment and to adapt to changing conditions. Furthermore, organizational communication also has an impact on employees' work satisfaction and commitment.

To answer the main research question a number of research questions have been in focus during the research process:

Q1: How has e-mail influenced communication in organizations with a focus on negative aspects?
Q2: When and why might e-mail have a negative impact in organizational communication?
Q3: What factors contribute to e-mail miscommunication?

1.2 Purpose of study
The purpose of this thesis is to explain when and why organizational e-mail usage might become an improper means of communication, and to use the findings to develop a guiding model for organizational e-mail use.

1.3 Research limitations
This thesis deals with organizational e-mail use and not private e-mail use. E-mail is studied mainly from a social point of view, i.e. e-mails impact on the social system in organizations (Sproull & Kiesler 1991). The pure technical aspects of e-mail software will not be discussed unless they have an impact on the social system.

As can be understood from the title of the thesis, this work focuses on possible negative aspects of e-mail use in organizations. This does not mean that there are not positive aspects of e-mail use in and between organizations.
However, the main goal is to suggest countermeasures to possible negative outcomes to overcome them in order to get a more satisfying and effective e-mail use in organizations.

1.4 Theoretical framework – an introduction

When the research questions have been settled it is possible to choose different theoretical frameworks which may give different views on the same questions. In order to meet the goals set, earlier research in the area Computer Mediated Communication (CMC) focusing on the effects on the social system was used. This research is based mainly on communication theories and theories of media choice which offer a valuable contribution for understanding why e-mail might be used in improper ways in organizations.

In the discourse about effects of CMC two different imperatives, the technological and the communicative imperative, offer different ways to think about the impact of new technology. Winner (1977) is the established defender of the technological determinism thesis, the technological imperative. From Winner’s point of view technology is a social construct and the primary cause of major change on both the macro social level as well as the micro social level. Chandler (1996) has identified the assumptions behind the idea of technological determinism. The relationship between technology and culture is one of straightforward cause and effect, and technology is regarded as neutral, but inevitable and irreversible.

Critics of technological determinism argue that the technological tools are "neutral" because bias can arise only from the ways in which the tools are used, not from the tools themselves but Chandler (1996) stated that we use and are used when we choose a certain medium because most media have multiple functions and we cannot choose to use only one of these functions.

The assumption in this thesis is that possible negative effects of organizational e-mail use are a matter of how we, as members of an organization, choose to use e-mail. E-mail might, however, have certain features that encourage some behavior and suppresses others but it is still a matter of choice when we use it in a way that is both appropriate and effective.

Another imperative might be seen as a competitive notion to the technological imperative, the so-called communication imperative (Thurlow & Brown 2003, see also Lea 1992). Underlying assumptions here are that we as human beings are driven to communicate from the moment we are born and we try to maximize our communication in order to find a satisfactory level of interaction. If any communication technology features get in the way of fulfilling our need
to communicate we are driven to overcome these obstacles, and usually we do it successfully.

Theories in CMC try to explain and predict media effects with a focus on if and how communication is different when computers are used. CMC is communication that takes place between human beings using a computer (Herring 2002), and it is also the science of how computer networks help people to cooperate. There are two different modes of CMC: asynchronous communication and synchronous communication. Asynchronous communication is not simultaneous, giving a freedom in space and time like for example e-mail; while synchronous communication is communication in real-time like for example chat. Face-to-face and telephone communications are also synchronous.

Sproull and Kiesler (1991) discussed the problem of predicting the impact of new technology and came to the conclusion that this problem may be studied from a two-level perspective. Depending on the interests of those who are looking at new technology the focus will shift. Investors are interested in efficiency effects, the first-level system effects, but Sproull and Kiesler (1991) argued that the second-level system effects are often likely to be more important for organizations. Second-level effects are not only effects on the improved efficiency of previously occurring communication, but also changes in the information flow and the contact patterns in an organization when e-mail is introduced.

This dissertation is in the first place concerned with what Sproull and Kiesler (1991) characterized as the second-level system of the new technologies’ impact on the social system in organizational settings, because information technology offers new channels for information and communication flows. Of course, e-mail has had an impact on efficiency, the first-level system also. Some features of e-mail like the asynchronous, fast and easy to use one-to-one or one-to-many communication methods facilitate processing and transmitting information.

Herring (2002:111) found that the most important cumulative finding of Internet research since 1990 is that we change our communication patterns depending on the technological application. One example of adaptation to a medium's special features is: “Thus synchronous CMC (e.g., real-time chat) differs systematically from asynchronous (e.g., e-mail, in which sender and recipient need not to be logged on at the same time) in message length, complexity, formality and interactivity – due, in part, to temporal constraints on message production and processing.” Herring (2002) also found that contextual factors are so important that they may cause system-based generalizations to break down. Furthermore differences in user demographics such as age, gender and
level of education can result in different communication styles resulting in communication far beyond technological boundaries.

In 1997, Berghel claimed that “we have come to surprisingly limited consensus regarding the best and worst uses of technology, and whether it can overcome its weakness” and after developing all the advantages of e-mail usage Berghel reflected that e-mail has social implications but it is hard to tell what they are because in all communication contexts there is an uncertainty about the effects of the message and, for the most part, message producers are not conscious of the multiple outcomes their messages may create among those who receive them. Such outcomes may be desirable or undesirable. Berghel (1997:15) summarized his article “Another obvious fact is that e-mail is a wonderful testbed for researchers […] we may yet see this testbed as e-mail's greatest contribution.”

In 2004 Weber, Editor-in-chief of MIS Quarterly, called to MIS professionals to see e-mail as a researchable domain because he claimed that e-mail is a killer application and (p. III) “we lack a deeper understanding of the impact that e-mail has had on our lives. [...] Somehow we have to devise and enforce protocols that will result in senders of e-mail messages reflecting on and evaluating better the impacts that their messages might have on the receivers of the messages.” Also Weber (2004:IV) found that e-mail usage “provide a rich load to mine for research purposes”.

To find out what e-mail research is, Ducheneaut and Watts (2005:11) reviewed 30 years of e-mail research and identified three metaphors that have guided e-mail research up to 2005: (1) E-mail as a filing cabinet, (2) e-mail as a production line and (3) e-mail as a communication genre supporting social and organizational processes. This thesis can mainly be classified as being a work following the tradition of the last metaphor, e-mail as a communication genre, but will also discuss matters that belong to the second metaphor, e-mail as a production line.

1.5 Methodological approach

This study investigates a contemporary phenomenon – e-mail in a working context – and therefore I have chosen to do so in the form of a collection of case studies because of the phenomenon's complexity (Yin 1994).

Usually when the research questions have been formulated the choice of method is given. “Method” is a broad concept offering different approaches. The main interest of this thesis was to establish if e-mail as a working tool also sometimes becomes a tool for miscommunication. It was therefore natural to try to find negative outcomes of e-mail use. Data collection was made in sev-
eral steps using different techniques, e-mail surveys, face-to-face in-depth interviews, Internet searches, focus groups and a web survey.

1.6 Structure of the thesis
This introductory chapter has given a background to why the selected research area is interesting, and has also stated the research problems and the purpose of the study. A brief introduction of methodological issues and course of research action followed. A short exposition of theoretical frameworks was also included.

Chapter 2: Methodological considerations and course of research action.
Writing a doctoral thesis is, like all other scientific work, a matter of making a large number of choices depending on previous understanding of the topic, research questions and demands of quality in data collection and analysis. The aim of Chapter 2 is to give a thorough account of the research process from beginning to end.

Chapter 3: Literature review. E-mail in organizational contexts has been of interest to scientists for many years. The first part of Chapter 3 is a limited account of important research findings that highlight some of the discussions that are of interest in order to fulfill the purpose of this thesis. The next part is a presentation of some theories about media choice followed by an introduction to information overload and attention. The last part in this chapter discusses some theories about organizational communication and interpersonal communication. To understand how e-mail influences and is influenced by organizational culture it is vital to take ideas about communication competence into consideration, and therefore in this part a presentation of communication competence will be found.

Chapter 4: Entering the field. In this chapter an account will be found of the results of the empirical work divided into (1) A Pre-study published in my licentiate thesis (Sjöqvist 2005), (2) Study 1 rests on data collection with the help of the Internet, (3) Study 2 and 3 which were conducted through focus groups and a web survey in combination with a personal introduction in the form of a lecture in each contributing organization and (4) Study 4 a collection of best practices of e-mail.

Chapter 5: Discussion of results. During the research process things will be noticed, collected and thought about. This process will show certain patterns and so it did when developing this thesis. These patterns are discussed in Chapter 5.
Chapter 6: Conclusions and recommendations, recapitulates the former discussion, summarizes the results, evaluates the research process and presents ideas for further research in the area.
2 Methodological considerations and course of research action

This chapter will present the methodological considerations important to fulfill the purpose of this study. While this work was conducted several decisions had to be made in order to make progress. We are all tied to our pre-understanding or prejudices about how the world functions and this will of course influence our view of our joint world.

If possible the author should offer clear motives when making decisions in the research process (Frenckner 1986). This will help the reader follow the way from research question to answer and thereby make it possible to get an idea if questions are relevant, the techniques for data collection are correct and if the result is reasonable.

2.1 Theory and practice

Theories, in general, may be divided in, at least, three different types according to Dainton and Zelley (2005):

- *Commonsense theory* or theories in use reflect individual perceptions and ideas about different issues generally reflecting ideas held by people in the individual's surrounding.
- *Working theory*. Every profession has developed a “best practice” in a specific context. Usually working theory is more systemic than commonsense theory, maybe because it is more influenced by scholarly thinking. Working theory offers guidelines for behavior.
- *Scholarly theories* have undergone systematic research and are thorough, accurate, and abstract, and therefore more complex and difficult to understand.
While doing the empirical research I have met a lot of both commonsense theory and working theory. We are all “experts” when it comes to communication and we all have experience in using e-mail. This has been a challenge from the beginning of this work to the end. It is nearly impossible to open a newspaper, read up to date fiction, or look at movies without getting an insight in the phenomenon of e-mail. When I met people asking about my research project I got a lot of viewpoints without asking for it. Sometimes these informal discussions gave valuable contributions, revealing thoughts and attitudes and giving interesting examples, and beyond all transmitted an engagement from a diversified audience.

2.2 Data collection

Doing research in social science is a huge challenge giving you as a researcher access to a great variety of methods and angles of approaches. Besides that, the scientific field of CMC is interdisciplinary and places a multitude of theories at one's disposal for analyzing one's findings. According to Patton (1990) validity in qualitative research has to do with the personal skill of the person doing the research. To choose a variation of methods to ensure the research result is called triangulating (Denzin 1970). Combining different sources of data collection, more than one theoretical perspective and several observations, usually does this.

With this in mind this chapter accounts for the fieldwork for this dissertation. Hopefully the account is as clear, correct and transparent as it is supposed to be. Patton (1990:152) also asserted “The purpose of basic research is knowledge for the sake of knowledge. [...] The basic researcher's purpose is to understand and explain.” The basic research in this thesis aims to establish if e-mail as a working tool has become not only an efficient way for communication but also, sometimes, a way of miscommunication. And if this is true, why has e-mail become a way of miscommunication and is it possible to do something to prevent the usage of e-mail from becoming a miscommunication tool instead of an aid in working life? To answer this question it is necessary to ask more questions like: What are the variations in types of e-mail messages that cause problems and what kinds of problems occur? The units of analysis are e-mail incidents focusing on e-mails that have caused problems for an individual or an organization. According to Patton (1990) the units of analysis may be individuals, a group of people etc. but also events, occurrences or time.

Purposeful sampling offers information rich cases from which it is possible to learn something about the central issues in the study. There are, according to Patton (1990:169), different strategies for selecting information with the
purpose of getting rich cases. In the beginning of this study the goal was to find *extreme or deviant case samples* which focus on special or unusual cases, rich in information and probably cases that it is possible to learn the most from. Another sampling technique is *critical case sampling* that focus on what is happening in a critical case. In searching for information rich basic data both these sampling techniques were used.

But during the process of finding information the focus changed. From extreme and critical sampling there was a change to *intensity sampling*, which is close to extreme sampling without the focus on the extremes. Intensity sampling also emphasizes information rich cases but seeks examples that are not unusual. More examples may not explain a phenomenon better than fewer according to Patton (1990:185): “The validity, meaningfulness and insights generated from qualitative inquiry have more to do with the information-richness of the cases selected and the observational/analytical capabilities of the researcher than with sample size.”

Qualitative data analysis is a process of noticing, collecting and thinking about certain things of interest (Seidel 1998). This may seem like a simple process but it is a highly complex process that is not linear but repetitive, iterative, and also recursive because, for example, when one is collecting something one notices new things to collect. Noticing, collecting and thinking go on all the time – at the same time – in a research project like this. Sometimes the challenge has been not to notice and collect new things, but to insist on staying on the track that will lead to answering the research questions and to full fill the purpose of bringing this thesis to an end.

E-mail may cause problems depending on different causes. In Table 1, e-mail has been categorized from assumed benefit and harm on both individual as organizational levels.

<table>
<thead>
<tr>
<th>Category</th>
<th>Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>Necessary</td>
<td>Useful, necessary and important information that also is interesting and satisfy positive social needs.</td>
</tr>
<tr>
<td>Unnecessary</td>
<td>Useless, unnecessary and irrelevant information that the user find uninteresting.</td>
</tr>
<tr>
<td>Harmful</td>
<td>Different levels of harmful effects on efficiency and working condition on both individual and organizational levels.</td>
</tr>
</tbody>
</table>

Table 1: Categorizing e-mail use and outcome.

Besides the categories specified in Table 1 there are, at least, two additional categories that may be of interest when discussing e-mail and miscommunication and they are: (1) The unlawful: Traditional crimes with the aid of e-mail and (2) The unlawful: E-mail-specific crimes.
The unlawful aspect is not a part of this thesis, because this thesis primarily deals with intra organizational e-mail communication. I did not expect that the unlawful aspect would be a problem in the organizations that were part of the investigation and this was shown to be true.

Data collection in this case study took place during the period between September 2002 and April 2007, and was gathered in several steps (See overview Table 2).

<table>
<thead>
<tr>
<th>Method for data collection</th>
<th>When (year)</th>
<th>Area of interest</th>
<th>Research study</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. 6 e-mail interviews Human Resource and</td>
<td>02-04</td>
<td>E-mail use in different organizations. Examples of e-mail that have caused problems.</td>
<td>Pre-study</td>
</tr>
<tr>
<td>B. 7 interviews face-to-face Administrative managers and headmasters.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A. Web-search.</td>
<td>04-07</td>
<td>Examples of e-mail that have caused problems.</td>
<td>Study 1</td>
</tr>
<tr>
<td>B. Individual e-mail and mailing lists.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C. Spontaneous contributions.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A. Administrative staff: Focus groups (2) 10 participants 2 interviews face-to-face.</td>
<td>06</td>
<td>E-mail use in different organizations. Examples of e-mail that have caused problems.</td>
<td>Study 2</td>
</tr>
<tr>
<td>B. Web survey open-ended questions 14 respondents.</td>
<td></td>
<td>To find out if e-mail as a working tool also cause miscommunication.</td>
<td></td>
</tr>
<tr>
<td>Managers: Web survey open-ended questions 97 respondents.</td>
<td>06</td>
<td>E-mail use in different organizations. Examples of e-mail that have caused problems. To find out if e-mail as a working tool also cause miscommunication.</td>
<td>Study 3</td>
</tr>
<tr>
<td>Web and literature search.</td>
<td>02-07</td>
<td>To get an overview of best practice of e-mail use. To find out if ideas about best practice of e-mail use have changed over time.</td>
<td>Study 4</td>
</tr>
</tbody>
</table>

Table 2: Empirical data generation.

To understand e-mail in a working context I have taken an interpretative approach (Ricoeur 1974) because human communication is very complex and to understand it, it is necessary to capture a diversity of thoughts and notions. That e-mail usage is a contemporary phenomenon is obvious because its widespread use. Yin (1994:13) stated, “A case study is an empirical study that investigates a contemporary phenomenon within its real-life content when the boundaries
between the phenomenon and context are not clearly evident.” Earlier in Chapter 1, I argued that even if e-mail is a familiar communication tool for most people in our society today, there are aspects that we are not fully aware of. Yin also considered the case study method a good choice of investigative method when one is interested in covering contextual conditions because they might be very relevant for understanding of a certain research question. Yin emphasized that case studies are a comprehensive research strategy and not only a tactic for collecting data.

2.3 Data collection Pre-study

The aim of the Pre-study was to find out when e-mail is appropriate or inappropriate to use in an organizational setting from a management perspective and to find concrete examples of e-mail messages that were considered inappropriate. The Pre-study focused mainly on inappropriate use of e-mail, but because few examples were found during the Pre-study, another study – Study 1 – was conducted in order to find more concrete examples of when e-mail had caused problems.

In the first part of the Pre-study six respondents participated, all working in the area of Human Resource Management or Information Management. An e-mail questionnaire survey that consisted of 19 open-ended questions was sent to them (See Appendix 1). The questions focused on the respondents’ use of e-mail, the existence of an internal discussion about appropriate media for information and communication, and examples of critical messages that had unintended consequences.

It is possible to conduct an in-depth asynchronous e-mail interview. The difference between an e-mail survey and an in-depth asynchronous e-mail interview has nothing to do with the questions asked, but an in-depth asynchronous e-mail interview involves multiple e-mail exchange between the interviewer and the respondent over a rather extended period (Meho 2006). Using this definition the e-mail interview conducted was not in-depth because it did not involved multiple e-mail exchanges.

The second part of the Pre-study involved the largest unit of local government on the Swedish island of Gotland, a division responsible for education on all levels, from nursery school through secondary school. The study was conducted mainly through in-depth face-to-face interviews. However, I also requested and collected copies of printed documents that dealt with information policies. The respondents – seven altogether – were administrative managers and headmasters representing different parts of the organization. The interviews were recorded and transcribed in full.
The interview questions used in the e-mail survey were similar to the one used in the in-depth face-to-face interviews. An interview face-to-face offers more social cues (Short, William & Christie 1976; Daft & Lengel 1984) and therefore gives richer information. Social cues are for example body language, voice inflections, but also physical artifacts like the way people dress. This was the case also in the Pre-study, but when it came to critical examples the e-mail survey offered more information, maybe because the respondents had more time to think and therefore found it easier to remember problematic issues concerning e-mail use.

2.4 Data collection Study 1 – Examples of e-mail that have caused problems

One of the limitations of the Pre-study was finding concrete and genuine examples of e-mail that had caused problems in organizations. Some respondents contributed with examples, but most of the examples in the Pre-study were found in other sources like dissertations, research articles and newspapers. It was no problem getting the respondents involved in discussions about how e-mail has influenced the intra organizational communication but these discussions were usually kept on a general level. Study 1 aimed to find the missing parts i.e. examples of e-mails that had caused problems in some way, and was subdivided in three parts: (1) Searching the web, (2) using e-mail and mailing lists and (3) spontaneous contributions.

Using the Internet in research can give a rich store of circumstantial cases although Chang-Hoan and HyongKoo (2006) found in a study that there is a need for better methodological rigor in Internet research. Retrieving interesting examples on the Web is not as easy as it may seem. There are several problems with information retrieval and the Web. Of course, one of the problems is information abundance, making it hard to find anything useful at all. Another problem is the evaluation of the examples retrieved: Is it correctly reproduced and rendered? Why is it published on the Web? Who is responsible? Is it a genuine case or is it just fiction?

In the next data-collection phase e-mail and mailing lists were used both nationally and internationally. Because of people's reluctance to answer e-mail surveys, after careful consideration a decision was made. It was preferable that professor Jacob Palme – well known in the area of e-mail research – was the sender. As evident in the box on the next page Jacob Palme also certified that the cause of the question was serious. A sentence containing an excuse if the addressee had got multiple copies of the same e-mail was also added in order to prevent a discussion if the e-mail may be considered as spam. No reports about
people regarding the e-mail as spam emerged however. A copy of the content follows:

<table>
<thead>
<tr>
<th>From: Jacob Palme [<a href="mailto:jpalme@dsu.su.se">mailto:jpalme@dsu.su.se</a>]</th>
<th>Sent: Tue 18/10/2005 03:05</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subject: Research: unsuitable uses of email</td>
<td></td>
</tr>
<tr>
<td>From Eva Sjöqvist:</td>
<td></td>
</tr>
<tr>
<td>(Please excuse if you get multiple copies of this email.) I am researching suitable and unsuitable uses of email. Have you received any email that you find unsuitable in some respect or have you heard of anyone who has reacted negatively after receiving email. Would you like to share your experiences? In that case you can email me the original message or describe it in your own words. Tell me what you reacted to and why. I am not going to publish any information that would identify specific individuals or organizations.</td>
<td></td>
</tr>
<tr>
<td>Eva Sjöqvist</td>
<td></td>
</tr>
<tr>
<td>PhD Candidate Stockholm University</td>
<td></td>
</tr>
<tr>
<td>Please use this e-mail address for your reports: <a href="mailto:research.email@hge.se">research.email@hge.se</a></td>
<td></td>
</tr>
<tr>
<td>From Jacob Palme: I certify that this is serious research, attempting at finding both what e-mail is good for and what it is not so good for.</td>
<td></td>
</tr>
<tr>
<td>Professor Jacob Palme <a href="mailto:jpalme@dsu.su.se">jpalme@dsu.su.se</a> (Stockholm University and KTH) for more info see URL: <a href="http://www.dsv.su.se/jpalme/">http://www.dsv.su.se/jpalme/</a></td>
<td></td>
</tr>
</tbody>
</table>

2.5 Data collection Study 2 – Result focus groups and administrative personnel answering a web survey

Also the result of Study 1 had its shortcomings, because the examples found did not reveal if the described problems were common or not. The aim of Study 2 and Study 3 (See p. 19) was to find out if e-mail might cause miscommunication in different organizations, and if e-mail cause miscommunication, to find out why.

During the time Study 1 was conducted a need for a homepage came up where the research project could be introduced and explained. A very simple homepage was created in November 2005 and the research questions were published on the first page. In 2006 the homepage was considerably changed as regards to layout and also to content (See www.researchemail.webb.se). In order to test the effectiveness of the homepage and the questions, I involved the staff at Gotland University where I held a position as lecturer. In December 2005 one e-mail message was sent to all employees from Gotland University's information department.

The e-mail sent to all staff contained two messages in one: (1) A notice about the Christmas Party that was given in mid December to which all staff was invited and (2) an invitation to all staff to be part of the research. The result from this general appeal was discouraging but not unexpected. Of course there
are other reasons than being outclassed by the Christmas party invitation, but when I asked a number of people most of them had not noticed the appeal to contribute to my research. Another explanation is given by Meho (2006) who stated that it is important to invite people individually for participating in email interviews, which is probably true also when it comes to e-mail or web surveys. Inviting somebody individually might give a person a feeling of being important and thereby encourage him or her to participate (Dillman 2000).

Instead of sending out a reminder I decided to approach ten people and get their opinion about the relevance of the questions. To get an idea about how common e-mail problems are at Gotland University a focus group study was conducted instead. I chose an occupational group that I knew had problems with e-mail overload, administrative personnel in educational departments. Barbour and Kitzinger (1999; see also Bloor et al 2000) explained that in focus groups the group interaction is used to generate data by encouraging the participants to talk to one another. The participants control the discussion by asking the relevant questions, telling anecdotes and have ideas and points of views about the other participants' experiences. Barbour and Kitzinger (1999) stated that focus groups usually generate large amounts of rich and dynamic data about the participants' experiences. Focus groups are also useful for generating questions, frames and concepts and to pursue the participants' own priorities on their own terms using their own vocabulary (Barbour & Kitzinger 1999:7):

[...] focus groups are invaluable for examining how knowledge, ideas, story-telling, self-presentation and linguistic exchanges operate within a given cultural contexts. Even these generalizations, however, should not be treated as if they were cast in stone, and combining different data collection techniques into a single project can be highly productive.

Conducting focus group research helps the researcher find a diversity and structure guided by the participants' discussion, because bringing people together based on shared experiences – in this case the use of e-mail – will mostly end up being very productive. It is useful to use pre-existing groups because they already have an ongoing work related discussion where ideas are considered and formed and decisions are made (Barbour & Kitzinger 1999).

Two focus groups were formed, each group consisting of five people. A short introduction was made giving some ideas about the research background and some key questions. Besides the two focus groups I interviewed two persons that could not join the focus groups. Results from the focus groups conducted at Gotland University were compared with the results from the web survey sent to administrators, 16 respondents altogether, at Richard Steffengymna-
siet and Destination Gotland. Methods for data collection were different but this probably did not influence the general view of advantages and disadvantages of e-mail.

2.6 Data collection Study 3 – Result of managers and teachers answering a web survey

A well-known problem doing research in social science using data collection techniques like surveys is to get enough people taking the time and effort to respond to it. The experience so far was that it is not hard to get people to discuss e-mail in the workplace because nearly all have ideas and thoughts about communication and miscommunication when using e-mail. The challenge was to find a way to get people involved in the research questions and thereby get them motivated to answer a survey. As mentioned earlier the survey questions were published on the first page on my homepage. If someone wanted to answer the questions they had to copy and paste them into an e-mail message. This caused some problems because the respondent could not be anonymous if they wanted. To do something about this drawback a web page based survey was developed, and the answers were sent directly to a server at Gotland University and then sent to a special e-mail address (researchemail@hgo.se).

As will be discussed in Chapter 3, Sproull and Kiesler (1991) found that e-mail interviews create a feeling of privacy helping the respondent to disclose more information than they are willing to do in, for example, a face-to-face interview. This is one reason behind the decision to use a web survey in Study 3. It is true that web surveys and e-mail are different means of data collection, but there are enough similarities between web surveys and e-mail to assume that web surveys will also help the respondents disclose useful information. One argument for using a web survey can be found in a study conducted by Sussman and Sproull (1999) that found that participants in CMC were more honest and accurate than in face-to-face or telephone interviews.

According to Mann and Stewart (2000) web page based surveys have some advantages compared to e-mail surveys because the survey appears identical to all respondents, the survey can be given an attractive appearance by means of color, text formatting and graphics, it is easy for respondents to complete and the data is in a consistent form. Mann and Stewart also emphasized that the researcher must have expertise in how to create web pages, and besides that it is very important that the script running when the button “Submit” is clicked sends the survey to the host server. But: “Despite these problems, Web page based surveys offer significant advantages in terms of reach, speed and economy” (Mann & Stewart 2000:71).
<table>
<thead>
<tr>
<th>Advantages of Web survey</th>
<th>Disadvantages of Web survey</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low marginal costs in logistics and mechanics of survey construct.</td>
<td>High start up and fixed costs.</td>
</tr>
<tr>
<td>Comment: This was not the case because the homepage where the survey was found was already in use.</td>
<td></td>
</tr>
<tr>
<td>Increased geographic reach.</td>
<td>A high level of expertise may be required of both the researcher and the respondent.</td>
</tr>
<tr>
<td>Comment: To find and answer the survey did not require a high level of expertise of the respondents.</td>
<td></td>
</tr>
<tr>
<td>Accelerated data collection and streamlining of collection process – fewer transcript errors.</td>
<td>Sample bias and “digital divide” (certain groups are unilaterally excluded and others groups over- or under-represented).</td>
</tr>
<tr>
<td>Comment: An anonymous e-mail was created when the respondents submitted the survey, and this was manually processed maybe increasing transcript errors.</td>
<td>Comment: Because of well-defined target groups this was not the case.</td>
</tr>
<tr>
<td>Increased response rate due to improved design, better targeting of respondents, and identification of interested parties.</td>
<td>Inability to communicate with the respondent.</td>
</tr>
<tr>
<td>Comment: The respondents were asked to submit their e-mail address if they did not mind further contact. Most of the respondents submitted an e-mail address.</td>
<td></td>
</tr>
<tr>
<td>Questions may be easily modified at any time prior to completion.</td>
<td>Difficult to maintain and ensure anonymity and confidentiality.</td>
</tr>
<tr>
<td>Comment: If somebody wanted to be anonymous they might chose not to submit an e-mail address.</td>
<td></td>
</tr>
</tbody>
</table>

Table 3: Commonly held advantages and disadvantages of Web surveys (Tingling et al 2003:224 supplemented with comments).

In Table 3, Tingling et al (2003) summarized advantages and disadvantages that were found in a review process of existing practices of Internet research. While the web survey in this thesis was developed all disadvantages were considered in advance, see comments in Table 3.

Mann and Stewart (2000) compared conventional and online techniques in terms of two different factors. The first factor is cost. Face-to-face and telephone interviews are considered costly compared to “paper” questionnaires. E-mail eliminates paper and postage. Web based surveys may be costly to design and program but then the cost for implementation and analysis are minimal. The last statement was not true when it came to the web based survey used in this study, because when the respondent clicked on “Submit”, one e-mail message was generated and data therefore had to be structured and categorized manually before the analysis was possible.
The second factor is time and Mann and Stewart (2000) referred to a study conducted by Schaefer and Dillman (1998) that confirmed that e-mail surveys were returned faster than “paper” questionnaires. Other studies have shown that web based surveys can speed up responses even further (Comley 1996; Smith 1997 in Mann & Stewart 2000) on the condition that there are no technical problems. A reasonable conclusion is that if someone fills in the form and later will find out that it is impossible to submit it – he or she will not try to fill in the form another time and then try to submit again. The information will then get lost because usually there is no save function as a standard option. When conducting my research I got some signals that this had been the case and it was hard to motivate the respondents to do the work of filling in the form once again.

Mehta and Sividas (1995; see also Schaeffer & Dillman 1998) discovered that multiple techniques such as pre-survey notification and post-survey feedback might increase the response rate to e-mails survey, and I assume that this is true even when using a web survey. In order to get a high response rate, I then approached four different organizations and offered a lecture combined with a discussion about e-mail communication and miscommunication: Destination Gotland AB (Rederi AB Gotland 2006), Svenska Spel (Svenska Spel 2007), GEAB (GEAB 2006) and Richard Steffengymnasiet (Richard Steffengymnasiet 2007). The organizations were deliberately chosen because one assumption was that contexts probably would influence the e-mail communication, and also the occurrence of miscommunication. The target groups were a group of managers at senior level at Svenska Spel and at GEAB, all teachers and the head master at Richard Steffengymnasiet, and all employees at the head office at Destination Gotland.

If any of the organizations had any special questions of interest the web survey would be supplemented, and this was also done. In each organization I had one person who did inform the staff about the research project internally and whom I kept updated on how many web surveys had been answered. When responses declined and there still was a need for more responses, this contact person did send an e-mail to remind those who had not answered yet.

To achieve a more homogeneous group a decision was made to exclude specialists, administrative staff and the chief executive officers, getting a total of 97 respondents remaining, a figure very close to 100. However, the answers by the administrative personnel answering the web survey were compared to the participants’ views in the focus groups (See 2.5).

All teachers were included even though they probably see themselves in the first place as pedagogues, but they also have an important role as supervisors in relation to the students. Since the total number of respondents represent-
ing each organization is limited I have chosen not to compare the four organi-
zations. In total the possible respondents are shown in Table 4, and as is evi-
dent the response rate amounts to 81 %.

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<td>Total</td>
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<td>16</td>
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Table 4: Target group and response rate – web survey

2.7 Data collection Study 4 – Best practice of e-mail

The aim of Study 4 was to find data – or rather information – about e-mail and
good practice because it is possible to study e-mail miscommunication by
studying good e-mail practices. Good practice or best practice of e-mail use is
easy to find both in management and scientific literature. On the Internet there
is an overabundance of recommendations on how to use e-mail more effec-
tively. When searching the Internet I tried to find a selection of different views
on this topic, but different authors more or less highlight the same issues. I
have, nevertheless, combined some of these best practices of e-mail under some
headlines to give an overview of what is important to think of in order not to
cause miscommunication when using e-mail.

2.8 Quality in a qualitative research process

Validity in qualitative research differs from validity in quantitative research
where it depends on how well the instruments like, for example, test items and
survey questions measure what they are supposed to measure. There are two
kinds of validity, external and internal. External validity is a matter of deciding
whether the research result in a case study can be generalized to other situations
or cases. The discussion about internal validity is more common in qualitative
research where it is a matter of credibility, i.e. how the research process is de-
scribed, if the researcher have influenced the result, and also if some kind of
triangulating was done in order to ensure the results. Internal validity is also a
matter of the researcher's objectivity. Patton (1990:14) stated therefore that in
qualitative inquiries the researcher is the instrument and: “Validity in qualita-
tive methods, therefore, hinges to a great extent on the skill, competence and
rigor of the person doing fieldwork.”
To fulfill the demands for a high degree of internal and external validity put a qualitative researcher to a severe test. Klein and Meyer (1999:87) established that “[…] interpretative research has emerged as a valid important approach to information systems research.” They found it vital to discuss how quality in this kind of research can be assessed. To do so Klein and Meyer have suggested a set of principles. These principles will be compared, where relevant, to the criteria that Lincoln and Guba (1985) have suggested in order to obtain trustworthiness in qualitative research.

Research can be classified as interpretative, according to Klein and Meyer (1999:69) “[…] if it is assumed that our knowledge of reality is gained only through social constructions such as language, consciousness, shared meanings, documents, tools and other artifacts.” Interpretative methods are supposed to help in understanding the context and the way information processes are influenced by the context, embracing the complexity of human sensemaking. Klein and Meyer have developed quality standards for interpretative field research summarized in seven principles. They have deliberately chosen the word “principles” in order to emphasize that these principles are not mandatory but they may help the researcher to systematically design different investigations and also evaluate finished research.

The first fundamental principle is that of the hermeneutic circle according to Klein and Meyer who referred to Gadamer (1976). The hermeneutic circle is the basis for all interpretative research and it is also a meta principle from which the following six principles expand. The hermeneutic circle suggests that we get an understanding of the whole by studying the parts and the way they work together. The opposite is also true because we are able to study the parts to understand a complex whole. Changing between parts and the whole may help us understand a phenomenon better. What is supposed to be the whole and what is supposed to be the parts are not obvious but depends on the aim of the study and how it is unfolding.

If this discussion is transferred to the work in this thesis it is not obvious what are the parts and what is the whole. Depending on where in the research process the question is asked the answer will be different. E-mail usage in general is the focus of the study and thus may be representative of the whole, while every single e-mail message and each respondent's ideas about their e-mail use may be regarded as parts. Consequently this work has been a journey between the whole and the parts because the focus has constantly changed between different details, situations, angles of approach and contexts.

The second principle focuses on contextualization. An important factor in interpretative research is to elucidate the way meanings are created in different contexts. Therefore the social and historic background is very important so that
the reader is able to understand why present research questions in a certain context are interesting. The principle of contextualization is labeled *credibility* according to Lincoln and Guba (1985) referring to the importance of the description of reality since there are many interpretations about reality.

Klein and Meyer stressed that human beings are not passive but active, and therefore it is important that (1999:74): “The researcher need to see people as the producer and not just as products of history and the description of the historical context should reflect this in the write-up of the research study.” Because people produce their reality it will change as time goes on. To get an idea about the relevance of doing research in the area of organizational e-mail use, this thesis contains several parts that describe the growth of e-mail, and also puts e-mail in a historical context. The research project has also been discussed with research colleagues, the organizations involved, and in daily life since e-mail is a common working tool for most individuals today.

The third principle is *the principle of interaction* between the researcher and the subject. Klein and Meyer stressed the fact that the researcher must be aware of what influence he or she has had on the empirical data. In interpretative research facts are not waiting to be found, but are produced in the social interaction between researcher and respondents because both sides interpret what is going on and this will influence the development of the research process.

When I was asking my research questions, in the beginning people were interested in a polite way, but this situation tended to become more vivid during the process of gathering empirical data. Of course, I influenced my respondents' thoughts because the research questions carried my own values and ideas although I tried to be objective when listening to respondents or reading answers in the web survey. I was biased because of my own pre-understanding and prejudices and this generated my research interest to study e-mail and miscommunication in organizational settings. Because I was interested in this area people in my surrounding also seemed to be interested, many individuals I met offered additional examples. Of course, analyzing the findings sometimes altered my own assumptions making it important to change direction during the research process.

The fourth principle is *the principle of abstraction and generalizations*. This principle focuses on how far it is possible to draw conclusions from one case to a more generalized area. Klein and Meyer (1999: 75) verified that:

[…] it is important that theoretical abstractions and generalizations should carefully relate to the field study details as they were experienced to and/or
collected by the researcher. This is so readers can follow how the researcher arrived at his or her theoretical insights.

Theory plays a vital part in interpretative research, according to Klein and Meyer, because theories are used to view the world in certain ways. To be able to reach abstraction and generalizations it is important that the second and third principle – the principle of contextualization and the principle of interaction between the researcher and the subject – will be related to general, theoretical concepts that tell something about human understanding and social acting. Guba and Lincoln (1985) used the term *transferability* implying that a rich contextual description is vital in order for others to make informed decisions about the transferability of the findings to other contexts. In order to give a contextual description an overview of the research process is found in Figure 1: Empirical data generation, and also in the text describing all steps in the data collection process. Also the decision to approach six different organizations representing different sectors of the society increases the transferability.

A critical review of all phases in the research process by others and how the research process has changed over time refers to the criterion *dependability* (Guba & Lincoln) and is also important in order to make the research process auditable by others. My intentions have been to explicitly discuss every step in the research process and also explain why, for example, the data collection methods changed over time.

I have no problem generalizing findings from this thesis into other areas where CMC is used. Also, e-mail miscommunication is rather similar independent of organization or context and I think that e-mail miscommunication is more a general miscommunication issue. Besides that, I think it is also possible to go one step further and talk about miscommunication – with or without computer – in organizations. Maybe the need of abstraction is a problem because when answering the research questions rather practical contributions become the result and therefore, maybe, far-reaching abstraction was more of a goal than was properly fulfilled.

The fifth principle is the need for *dialogical reasoning* which requires the researcher to confront his prejudices when his theoretical preconceptions and empirical findings do not agree. In this case it is important to make a continuous modification of earlier knowledge in order to understand the result of the investigation. *Conformability* (Guba & Lincoln 1985) is a criterion that implies that it is important to assume that the researcher has acted in good faith although influenced by his or her prejudices. In order to attain a high degree of conformability it is important to report thoroughly how collected data have led to the result so that it will be possible to trace the result.
Besides the researcher's need to understand his or her prejudices, a research process is always dependent on moving between theory and empirical results and back again to get a whole picture of the research area. I have viewed the work in this thesis as an iterative process where I am moving forward all the time, but not without going back both into the literature finding new, and better, explanations, and not without changing methods for the empirical work because of problems finding reasonable answers. This process of dialogical reasoning has been going on throughout the entire research process and it will go on as long as I am interested in the field of organizational communication.

The sixth principle focuses on the necessity that the researcher is aware that each respondent interprets the same situation in different ways. To be able to understand the studied phenomenon it is necessary to analyze the underlying assumptions in different answers. Of course it is not always the case that one gets different answers about a certain situation, but as a researcher one must be aware of nuances that may be caused by different ways of looking at how things work in the eyes of the respondents.

I have not found that different interpretations have been a problem in this study. Of course, different views on how to communicate and inform inside organizations are frequent depending on individual desires and need, and cultural aspects in different organizations. Besides that, we do not look upon technological possibilities in the same way, but having different views on the same phenomenon is not the same as having a problem, but something that enriches our shared reality.

The seventh and last principle urges the researcher to be suspicious if respondents offer biased construction and systematical distortion. If so, the reason for this may be of different origin but Klein and Meyer encouraged us to be aware of this in order not to get misleading results.

Because the phenomenon studied in this thesis was not, in any way, a threat for the respondents and the discussion was held on a general level my conclusion is that there has been no systematical distortion. Anyway it is possible that I did not get examples of e-mail problems in the Pre-study because the respondents were not anonymous. Another explanation could be that e-mail does not cause problems in the organization in the Pre-study.

2.9 Summary of Chapter 2

This chapter has dealt with methodological concerns. The aim of it was to give an account of how the research was conducted, the way data was collected, and to discuss quality in this qualitative research. The thesis is built on the ideas that there is not one method suitable to answer the research questions, but sev-
eral. To decide, in the beginning of the field work, which way would reveal the richest information about a certain phenomenon is more or less infeasible because as a researcher conducting qualitative research it is usual to find that the first methods chosen will not reveal the answers needed. As have been discussed in this chapter several methods for data collection were used: e-mail surveys, face-to-face in-depth interviews, Internet searches, focus groups and a web survey.

Quality in a qualitative research process was discussed using Klein and Meyer's (1999) seven principles: the hermeneutic circle, contextualization, the principle of interaction, the principle of abstraction and generalizations, dialogical reasoning, the respondents' different interpretations of the same situation and suspicion if respondents offer biased construction and systematical distortion. These principles were compared to the quality criterion stated by Lincoln and Guba (1985): Credibility, transferability, dependability and conformability.
3 Literature review

Chapter 3 offers a literature review of the theoretical framework used in this thesis. Arguments for choosing one theoretical concept instead of another depend both on the researcher’s earlier knowledge and values, and on the purpose of the study. Because this study is multidisciplinary, the theories derive from different disciplines having in common that they may be used to explain why e-mail might become an improper means of communication in organizations. This chapter is divided in four parts:

3.1 Earlier research findings of e-mail covering different disciplines.
3.2 An introduction to five basic theories of media choice.
3.3 Causes and effects of information overload, and the limitation of human ability to attend to vast amounts of information.
3.4 An introduction to organizational communication theory.

3.1 Earlier research findings

The fast growing information technology has made it possible to have an unlimited supply of electronic information if you are among those people who have access to the Internet. To be able to manage the information flow may be one of the largest challenges that we are facing on an individual, organizational and societal level (Lyman & Varian 2000). Herring (2002:113) stated that the first electronic mail or “e-mail” message to be transmitted between two networked computers was sent in 1971 by Ray Tomlinson who saw a potential for transmission of data and computer programs. Tomlinson saw the progress of e-mail as a communication tool with astonishment, and person-to-person e-mail remains one of the most popular uses of CMC on the Internet today.

Palme (1995) asked if e-mail offers a new kind of communication or if it is just a new media for old communication and established that behavioral science has shown that e-mail is not just a new media but that it also has changed
communication patterns. These changed patterns showed that people are communicating more with other people than earlier, they communicate more often and are using e-mail for different subjects than before. E-mail is a kind of virtual communication that may cause miscommunication, because e-mail lacks social cues which help those who interact to correctly understand each other, usually referred to as the “cause-filtered-out” approach according to Riva (2002). Virtual communication takes place in some sort of vacuum that makes personal identities vague and unclear. More about social cues and consequences of this approach will be found later in this chapter. According to Palme (1995), two thirds of all e-mail usage is new communication, rather than a replacement for previous communication in a new medium.

Bälter (1998) established that e-mail systems are the single, most widespread computer application in organizations, but he also found that these systems have disadvantages, including information overload, over-complexity, and the failure to meet the needs of both new and experienced users. According to Taylor (2001) some of the reasons that e-mail can overload systems, damage reputations, hurt feelings and waste time, are the familiarity and convenience of e-mail. About the speed Taylor (2001:10) wrote: “This is resulting in messages being sent without much thought or planning, with important details missing, with spelling and punctuations errors, and with abbreviations that some people don’t like and others simply don’t understand.” Taylor found that high on the list of annoyances was an unfriendly tone. Since we only have the words in e-mail, it is important to choose the words carefully. Information overload is, according to Taylor (2001:11) another problem and we must learn to think before we use e-mail and further we should: “[...] remember that it’s good to talk and don’t let e-mail result in the death of conversation.”

3.1.1 Efficiency effects and social system effects

There are several reasons for being open minded about the prospects of new technology, because it is hard to identify the direct costs of new technology and the way it will interact with the routines of today, but it is even harder to identify in what way it will change the way people interact at work and if this will change the structure of organizations.

A two-level perspective on technology is crucial because, according to Sproull and Kiessler (1991:3), the effects on the second-level system are often important for organizations and “[...] that second-level system effect – the social and organizational change – stems mainly from how communication technology changes what and whom people know, what and whom people care about, and system independencies.” New technology, according to Sproull and
Kiessler (1991) change people's attention to new things which affect people's awareness, choices and the way they interact and behave.

Learning from the history of prior technology it is possible to draw four conclusions (Sproull & Kiessler 1991:7): (1) It is hard to foresee the full possibilities of new technology. Therefore investors emphasize the planned uses and early users ignore the actual effects on the second-level system. (2) Usually, unexpected effects have “to do with changing interpersonal interaction, ideas about what is important, work procedures, and social organizations.” and less to do with the effects on the first-level system. (3) It also takes awhile for people to recognize these changing patterns and to come to a consensus on the best pattern of behavior and thinking. (4) Second-level effects are a construction of people interacting with technology – and affecting the technology design - and this construction is influenced by the social environment.

According to Sproull and Kiesler (1991) there are several e-mail features that speed up the information and communication flow inside and between organizations making it possible to save time and money. Compared to ordinary postal service, e-mail makes it possible to reach anyone and everywhere in minutes. Because it is asynchronous it will also sometimes have an advantage compared to ordinary telephone communication. E-mail may be sent at the convenience of the writer and be read at the convenience of the recipient thereby creating flexibility for the users. Sproull and Kiesler (1991) identified e-mail as an information accelerator helping people share information instantly and apparently without costs in a way that no other means can offer. Another feature that has an impact on the efficiency level is the capability to broadcast or disseminate to many recipients (Sproull & Kiesler 1991). Disseminating information is important for all organizations and e-mail offers an effective means to get in touch with a lot of people.

Sproull and Kiesler (1991) found several aspects of second-level social effects. First they considered the way e-mail might decrease the coordination costs in working groups. The group is a more fundamental unit in organizations than individuals and to keep coordination costs on a reasonable level is important in most organization. The most common way of organizing is for people to meet face-to-face where a coordination cost called “process loss” is incurred. According to Sproull and Kiesler (1991:25) this process loss is “[…] the difference between the potential contribution of all group members if each contributed maximally and their actual contribution.” Using an electronic distribution list can decrease coordination costs at the group level and give everyone an opportunity to both read others’ arguments and make comments without the constraints of time and room. Some people need time to think and develop their
ideas, and using e-mail discussions can help those who usually are reluctant to give their views in a face-to-face meeting.

Sproull and Kiesler (1991) found a very high correlation between the use of e-mail and the productivity of the group and this increased productivity was obtained without increased information flow, but with a different flow. It is important to note that one prerequisite to increase productivity is that the manager knows how to benefit from e-mail in group tasks. Using e-mail to reduce coordination costs does not mean that e-mail will eliminate face-to-face meetings. It is important that members of the group meet on a regular basis to share problems, accomplishments, and to find out about attitudes in the group. Face-to-face meetings are also important when starting a group, when negotiating and when solving problems.

Lusk (2005) made a study comparing five attributes of five communication alternatives, e-mail, telephone, face-to-face meetings, facsimile and letter: efficiency, convenience, preference, most-used and importance. One hypothesis stated in Lusk's study was that “Email will be more valued than the other four communication modalities over the five evaluation criteria”. Lusk established the fact that e-mail outperforms the other four ways of communication considering all five attributes and that e-mail therefore is simplifying the decision processes.

Reducing communication costs is not always advantageous however. Sproull and Kiesler (1991) also discussed some of the disadvantages with electronic communication. Because it is so easy to send an e-mail message problems may occur when people send an e-mail before they think and it is not a rule that more information means better information. Broadcasting a message to a large group of people is easy from the sender's point of view, but it takes time from the ones who receive it. The more addressees, the more time are consumed and the information may be redundant because several answers will contain the same information. Proponents of the first-level efficiency system often think that information delivered by traditional means or by different electronic communication means are perceived in the same way, but this is not true (Sproull & Kiesler 1991). It is important to realize that the medium chosen also influences the recipients and their idea about the meaning of the message.

In a familiar communication situation we have norms or conventions telling us how to behave. What is important in this process of getting guiding strategies are “instruction, experience, and reading cues in the situation itself” (Sproull & Kiesler 1991:38). The situation itself gives us the most cues on how to behave, and this is also true in a new social situation created by technological changes. Sproull and Kiesler emphasized that it is important to understand that if technology creates new social situations then old norms may lose their
power. The new social situation using electronic communication involves fewer communication cues than face-to-face communication and shared experiences may not be relevant (Sproull & Kiesler 1991:39):

People 'talk' to other people, but they do so alone. Reminders of other people and conventions are weak. Thus in this new forum, messages are likely to display less social awareness. The advantage is that social posturing and sycophancy decline. The disadvantage is that so, too, does politeness and concern for others.

Another consequence of the new technology that has an impact on the social system is the ability to supervise employees, and Berghel (1997:14) looked upon this question with great concern since it is a "[…] challenge to find a balance between an organization's need to control its workforce and the individual's right to privacy." It is not a technological challenge but it may have serious social costs. As early as 1997 Berghel found that companies were reading employees' e-mail to a large extent which in turn resulted in an abundance of litigation.

3.1.2 E-mail as habitat

E-mail is used for a wide range of tasks and has become not only an application but also a habitat according to Ducheneaut and Bellotti (2001:30):

[…] e-mail is not only the place in which a great deal of work is received and delegated, it is also increasingly used as a portal for access to online publications and information services. It has become the place where personal computer (PC) users spend much of their workdays. The application is always on and is often the focus of attention.

E-mail has in other words become a tool for personal information management. Because e-mail has become an important working tool there is a causal connection between the tool and information overload mostly related to the nature of the workplace and also to the user's role in the organization, according to Ducheneaut and Bellotti. They conducted a field study with the intention of gathering information about information management behaviors as a result of e-mail and found, among other things, that e-mail has become a to-do list because the respondents send reminders to themselves and leave messages in their inbox as reminders.

In the first chapter of this thesis I related to Weber (2004) who claimed that e-mail is a killer application. Ducheneaut and Bellotti (2001:37) wanted to go even further and maintained that e-mail is a serial-killer application because
e-mail nowadays is used “[…] to manage a variety of tasks that e-mail was not originally meant to support.” This phenomenon may be caused by the need of organizational communication where e-mail has a lot of advantages.

Birchall's (2007) report answered questions about how industrial managers (181 respondents) felt about deployment and use of IT in organizations. The respondents represented managers at all levels and from a number of countries within the European Union. 62% of the managers in the survey spent more than 2 hours a day dealing with e-mail. 31% of all e-mail was considered irrelevant to their work tasks. Birchall found (2007:1):

The average manager spends considerable time on e-mails, much of which is not well used due to lack of importance of many to the job and also the extent to which emails generate further traffic much of which is to seek clarification as to intent.

The use of e-mail was questioned because the respondents stated that the time used for decisions had become more extensive. 13% of the respondents reported that 5-6 rounds of discussions were generated on average by each e-mail, 41% reported 3-4 rounds, and the rest 1-2 rounds. On the other hand the more managers felt competent with IT, “the more likely they were to report a positive impact on decision-making effectiveness.” (Birchall 2007:16). Respondents with an outward focus find e-mail essential, but internal e-mail use are questioned because it might be a substitute for face-to-face communication and it might prolong time for decisions.

The accessibility of electronic systems everywhere has become intrusive on private as well as professional life with both advantages and disadvantages for the users. Whether this is a fact depending on personal choice or organizational expectations is not evident. Birchall (2007) got a picture that too much of management time is spent on e-mail. The reasons for this seem to be that some messages are unclear, or other media might have been more appropriate.

### 3.1.3 Ephemeral and text-based nature
One feature of e-mail may cause problems, the perceived ephemeral nature of messages (Sproull & Kiesler 1991). E-mail is perceived as ephemeral because all it takes to read and send e-mail is to touch a button and there are no paper piles or physical filing cabinets that show that the individual is part of a communication process. This may cause people to lose mental sight of their communication partners (Sproull & Kiesler 1991:42) and “When people perceive communication to be ephemeral, the stakes of communication seem smaller. People feel less committed to what they say, less concerned about it, and less worried about the social reception they will get.”
According to Shapiro and Anderson (1985) there are differences in volatility in different media and their discussion about volatility is very close to Sproull and Kiesler’s observation about e-mails perceived ephemeral nature. Regular mail and inter office memos are nonvolatile and telephone calls together with face-to-face meetings are volatile (unless recorded). Email on the other hand is perceived as volatile but this is not the case because it might reside indefinitely on a disk file, being backed up, printed and filed, altered and forwarded to third parties. Printed copies of the message may be copied and distributed. Shapiro and Anderson (1985:13) gave an example:

One of the authors violated this rule, and made some rather derogatory comments in an electronic message about someone far away in another organization. Through some path, that message found its way to the subject, causing a considerable embarrassment. What was said in haste and in anger at a particular moment did not disappear into the ether as would a phone conversation; the potential permanence of the remarks in electronic forms was overlooked, providing a valuable lesson at considerable cost.

Another feature that might cause problems is plain text since it does not reveal dynamic information and it is therefore not easy to get a thorough feedback. The sender has problems getting an idea about how the recipient will react to a plain text message and the recipient may have problems understanding the underlying circumstances in the message. Without non-verbal cues it is hard “[...] to convey nuances, communicate a sense of individuality, or exercise dominance or charisma.” (Sproull & Kiesler 1991:40). The early discourse in the scientific field of CMC did focus on the lack of nonverbal cues in CMC because this was one of the apparent features that were supposed to have an impact on the communication. Sproull and Kiesler also asserted that e-mail contains little static information about place, position and person. The sender may see the addressees as a group, and the addressees perceive the message as one in a long row – all looking the same. The message itself provides little social information but other portions of the message may help them put the content in e-mails into perspective. For instance, the recipient usually finds the name and address of the sender important as a cue but this information is only partially helpful.

Owens et al (2000) spent a year researching status at a company and after looking at more than 30,000 e-mails, they discovered that low-status employees tended to write longer and more verbose e-mails. High-status employees wrote short messages and had poorer grammar and spelling, and they took longer to respond to messages, maybe thereby communicating that they had more important things to do.
These characteristics, perceived ephemerality and plain text, may cause a user to forget or ignore the addressee and therefore ignore social boundaries, personal integrity and give blunt remarks according to Sproull and Kiesler (1991:40):

When communication lacks the dynamic personal information of face-to-face communication or even of telephone communication, people focus their attention more on the words in the message than on each other. Communicators feel a greater sense of anonymity and detect less individuality in others. They feel less empathy, less guilt, less concern over how they compare with others, and are less influenced by social conventions.

On the other hand the ephemeral nature of the e-mail and the plain text may help people that are shy in front of others (Sproull & Kiesler 1991) because it reduces fear of being looked at as foolish in front of others in a face-to-face communication, where part of the game for the participants is to project images of themselves. Sproull and Kiesler have found that e-mail interviews create a feeling of privacy helping the respondent to disclose more information than they are willing to do in, for example, a face-to-face interview. It may seem to be a little surprising that some people are more willing to reveal sensitive information through e-mail interviews than otherwise although it is apparent that the information will be stored and maybe duplicated. Sproull and Kiesler (1991:48) explained this:

Yet people interacting on a computer are isolated from social cues and feel safe from surveillance and criticism. This feeling of privacy makes them feel less inhibited with others. It also makes it easy for them to disagree with, confront, or take exception to others’ opinion.

Rooksby (2002) found that misunderstandings in CMC often were the result of stylistic differences that are hard to predict. To understand an individual’s textual style takes time. It also takes considerable care to get an understanding of underlying interests and attitudes. Different cultures and contexts tend to produce different interpretations of style, according to Rooksby who stated (p. 27): “Attending to and trying to understand what other people do and say is an ethically important activity for many reasons.” Trying to understand the intention of a sender in e-mail communication is therefore an ethically important activity since doing so help us to avoid some misunderstandings and conflicts that might be a result of these misunderstandings. Inattention may count as lack of respect for those whom we interact with, according to Rooksby, who, however, also reflected that there are limitations as to the number of people that we can
attend to. It is also important to realize that we, depending on the sender's textual-stylistic qualities, might take a message more or less seriously.

3.1.4 E-mail and egocentrism

Paralinguistic cues such as body language and the way we emphasize what we are saying is important for a deeper understanding of the inward sense of our messages. These cues also convey our emotions. E-mail communication is a text-based application revealing little about the way we feel. Kruger et al (2005) found that we, in general, overestimate our ability to communicate by e-mail. The reason, according to Kruger et al (2005:926), is “[…] the inherent difficulty of moving beyond one's subjective experience of a stimulus and imagining how the stimulus might be evaluated by someone who does not share one's privileged perspective.” This social psychological phenomenon is called egocentrism. Kruger et al (2005:925) referred to earlier studies and concluded:

Social judgment is inherently egocentric. When people try to imagine the perspective, thoughts, or feelings of someone else, a growing body of evidence suggests that they use themselves as an anchor or reference point. Although precisely why this occur […] is a matter of some debate, the fact remains that the assessment of another's perspective is influenced, at least in part, by one's own.

Kruger et al developed the idea that one reason for the miscommunication over e-mail is that we have problems visualizing the audience's experiences of stimuli and e-mail may therefore be more ambiguous than we comprehend. Another problem is the fact that, as shown in Kruger et al research, we think that we are able to communicate more efficiently and send more information about the meaning of the message than we in reality are.

Kruger et al used the concept of “overconfidence over e-mail” and this is true independent of how able we are to communicate in general according to their study. In one study the participants were asked to estimate the anticipated and the actual ability to convey sarcasm by e-mail and voice. The result of this study is shown in Figure 1 (p. 38) Kruger et al found that the participants were overconfident in estimating their ability to convey sarcasm over e-mail. Anticipated and actual outcomes were considerably closer in estimating how to detect sarcasm using voice.

In summary Kruger et al found that e-mail has a limitation conveying sarcasm, seriousness and humor. The participants were not aware of this and overestimated the recipient's ability to detect the intended message. They also overestimated their ability to communicate both as a sender of a message and as an
interpreter of a message. Kruger et al also suggested that the phenomenon of egocentrism is one reason for flaming.

![Figure 1: Anticipated and actual ability to communicate by condition (Kruger et al 2005:928).](image)

In an interview (Winerman 2006:XX) Kruger explained why misunderstandings occur so frequently in electronic communication:

> Of course there’s nothing new about text-based communication; people have been writing letters for centuries, but what’s different in this medium is the ease with which we can fire things back and forth. It makes text-based communication seem more informal and more like face-to-face communication than it really is.

Epley, who conducted the related research together with Kruger, expressed the fact that people in general have an idea about the limitations of communication by e-mail but have problems detecting a particular message as unclear (Winerman 2006). Reading the message out loud may help the sender understand how the recipient might interpret it.

### 3.1.5 Information symmetry and asymmetry

Sussman and Sproull (1999) made a distinction between information symmetry and information asymmetry. Tasks like getting to know one another, brainstorming, planning and decision-making are symmetric in the sense that the actors in the communication have equal information resources. Bringing unpleasant information is an example of asymmetry in the communication because the delivery process is in the hands of the sender. The task is of course to inform the recipient about something and the communication will not end by the recipient getting the message. But in the initial phase it is reasonable to
consider delivering bad news as an asymmetrical process because the recipient has less power to control the situation. Sussman and Sproull (1999:153) reflected:

People may react more negatively to a ‘dehumanized’ communication situation; they may feel anxious and uncertain about the technology. If this were true, then computer-mediated communication should lead generally to more negativity in all communication rather than to greater honesty. Because accurate delivery of bad news requires honesty it is necessary to separate these two alternatives in any investigation of it.

When we are supposed to deliver bad news, we often find it an unpleasant task and therefore postpone it or try to mitigate it through some kind of positive distortion. In an organizational setting negative information is critical for performance improvement and organizational learning (Sussman & Sproull 1999) and electronic communication may offer one way of increased honesty and straightforwardness. In a study, Sussman and Sproull found that when the participants used computer-mediated communication they were more honest and accurate than in face-to-face or telephone communication. In addition they felt a higher level of satisfaction and comfort in the communication situation. Sussman and Sproull focused on the sender of the negative information because the sender has a more dominant position and can choose what media to use.

The reluctance to communicate undesirable information, Sussman and Sproull explained, is labeled the “Mum Effect” by Rosen and Tesser in 1970. The Mum Effect makes it clear that delivering bad news can be as unpleasant for the person who delivers it as it is for the person who receives it. Expected feelings of anger and emotional distress in the recipient may be an obstacle for the sender who therefore tries to mitigate the negative information. CMC may help decrease the deliverer's psychological discomfort because he or she is socially buffered from their communication partner.

Sussman and Sproull (1999) found that participants interacting through CMC less often distort negative information than participants acting face-to-face. When communicating face-to-face or by telephone participants are more likely to use negative politeness strategies like acknowledging the listeners need and attempting to comfort and encourage the listener. Sussman and Sproull also found that participants using CMC felt more comfortable and satisfied than those using the telephone or a face-to-face meeting. An interesting finding was that participants using the telephone felt particularly uncomfortable. Sussman and Sproull explained this phenomenon as a result of the participants getting enough cues about the reception when using the telephone to feel uncomfortable, but not enough information to be able to assess the intensity of
the negative reaction. Meetings face-to-face give enough information to detect and assess the intensity of the reaction and in CMC the sender will neither detect nor assess the negative reaction.

3.1.6 Message actions

Dabish et al (2005) conducted an organizational survey to find out why people attend to incoming e-mail and how they do it. They based their study on message characteristics and the characteristics of the recipient and the sender and found that the recipient rated e-mail as important if it required action about work related issues. Importance, on the other hand, was not a reason to reply to incoming e-mail or to save them. Dabish et al concluded: “The result indicates that factors other than message importance (e.g. their social nature) also determine how people handle e-mail. Overall, e-mail usage reflects attentional differences due both to personal propensities and to work demands and relationships.”

When it came to message actions the respondents were asked to describe how they acted on the message. The alternatives stated were: Deleted, left in the inbox, or filed it and finally did the respondents reply immediately or did they plan to reply later. The message action was a key issue because depending on message characteristics such as importance, relationship to sender, content, etc. Dabish et al (2005) assumed that the message action might be predicted. Dabish et al found that:

Sender characteristics and message influenced users' perceptions of message importance. Importance, in turn, influenced how people responded to a message. However, people also responded to messages they did not consider important, suggesting that other sender and message characteristics play a role.

An assumption in the study was that the experienced importance of a message might play a significant role in whether the recipient acted or not. Dabish et al found that some people rated their incoming e-mail messages as more important on average than others do and this may influence the action of the users and explain this:

Possibly, busy people have a self-flattering view that their work is especially important. It is more likely, however, that e-mail messages are more important for people with complex jobs, because they are using the e-mail to coordinate the multiple projects in which they are involved.
An interesting finding is that the respondents looked upon messages with fewer recipients as more important and were more likely to respond to them. Earlier communication with the sender and a work relationship also increased the importance of the message but did not necessarily generate a reply maybe because this kind of message may have become routine. Dabish et al found that the respondents' identity explained most of the variance in where the messages ended up and that “[…] there are strong individual preferences in filing strategies that are independent of the characteristics of the message or its sender.” 76 % of all messages were retained. When it came to reply action Dabish (2005) et al found that the perceived importance of the message was only one of the influences on whether the recipient acted by sending a reply or not:

People responded to information requests, beyond their importance, perhaps because these were easy to attend to. They responded or intended to respond to social messages, even though these messages are unimportant for work, perhaps because they were fun or because of the social obligations they entailed. In contrast, some very important messages may have required a lot of work, so they were retained.

3.1.7 Unintentional and intentional consequences

People have learned to use e-mail and thereby overcome limitations and pitfalls but there are still problems to be aware of (Jansson 2005). Typical examples are a human tendency to overuse e-mail, sending too much information, demanding responses too quickly, and having the idea that everyone is online all the time. The sender decides to send a message, but for multi-recipient messages, most of the effort may be the time taken by the recipients. Another problem, also discussed by Jansson, is to decide the level of interaction because e-mail communication is a balancing act between not being too candid, and anyway making the message clear. Jansson (2005:161) also found that written words came across harder in e-mail communication leading to suggestions being “interpreted as truths or strict guidelines”. Trust is an important factor for communication and the foundation of trust in communication is connected to people's expectations, according to Jansson. Jansson found that the most important factor for trust in this respect was not what people did, but to what extent people did what they were supposed to be doing. This is especially important in communication situations where the other participant was unknown.

To evolve ethically valuable social relations we have to establish mutual trust (Rooksby 2002). Rooksby questioned the capacity of textual messages as the only source for developing mutual trust and understanding but (p. 5):
Nevertheless textual CMC is increasingly normalized as a mode of social interaction that is both natural (because socially accepted) and desirable (because efficient, recordable, cheap, productive). The degree to which CMC can sustain mutually disclosive, supportive and cooperative relations will determine the ethical possibilities and limitations of CMC.

CMC increases the risk for misunderstanding (Palme 2003) because of the lack of body language, voice inflections, etc, and because people are not prepared to change their point of view when using e-mail. In these cases, when the users are not willing to reach a consensus, it is important to extend the discussion with meetings face-to-face or by phone. Sometimes chat is an option, too, since chat has fast feedback loops. Olaniran (2002) discussed that misunderstanding may be inherent in CMC because of its asynchronous character and slow feedback processes. Feedback loops are essential in all communication to give the sender knowledge about the recipient's reaction. Without feedback it is impossible to become aware that a misunderstanding has occurred. Of course feedback is feasible also in e-mail communication but it is often slower, and there are no guarantees that it will reveal that a misunderstanding has arisen.

<table>
<thead>
<tr>
<th>Behavior/Self-awareness</th>
<th>Intentional</th>
<th>Unintentional</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Experience</strong></td>
<td>+</td>
<td>-</td>
</tr>
<tr>
<td>+</td>
<td>Creating timely information, Increasing information accuracy</td>
<td>Scaling organizational hierarchies, Decreasing discussion potential, Increasing colleague interaction, Understanding the organizational context, Engagement</td>
</tr>
<tr>
<td>-</td>
<td>Creating information permanency, Avoiding fact-to-face communication, Reticence, Negating responsibility, Appearing diligent, Non-responsiveness</td>
<td>Increasing information overload, Weakening relationship, (Mis)interpretation of tone, Replying impulsively</td>
</tr>
</tbody>
</table>

Table 5: Unintentional and intentional consequences of e-mail on organizational behavior (O’Kane & Hargie 2007:28).

Olaniran (2002:208) stated a hypothesis saying “The majority of the misunderstandings in CMC are associated with misinterpretation of messages rather than with cultural or language difficulty.” Olaniran continued suggesting that even if individuals attribute their source of communication misunderstanding to the lack of nonverbal cues, they still describe their experience with CMC as satisfactory because of their perception of the medium. Cost and time are important and misunderstandings in CMC are resolved within CMC and Olaniran
(2002:205) found that his hypothesis received support. "The findings indicate that although participants acknowledge the lack of nonverbal cues as a source of misunderstandings during interactions, they still express the willingness to use text-based CMC in resolving misunderstandings."

Harrison (2006) has examined varied trouble sources in e-mail discussions and found that they could be grouped into three broad categories: (1) transgression – not in the terms of violating laws, but transgressing the bounds of decency or behaving unethically like forwarding an e-mail without the author's sanction, (2) miscommunication – genuine mistakes seem to have occurred and (3) flames – hostile behavior is expressed by the participants. O'Kane and Hargie (2007:28) concluded their findings about intentional and unintentional consequences of e-mail on employee organizational behavior depending on positive or negative outcome (See Table 5).

### 3.1.8 Predicting outcome of e-mail communication

A problem highlighted by Wilson (2002) is the problem of predicting the outcome of e-mail communication when we are applying familiar communication metaphors. Wilson (2002:122) used the terms of winning and losing in our e-mail communication and emphasized the fact that because e-mail is simple to use it is not a guarantee that we will succeed in our efforts and stated “We are more likely to lose when using e-mail to make initial contacts, develop relational understanding, achieve consensus, or influence correspondents while working under deadline or other external pressures.”

<table>
<thead>
<tr>
<th>Task perspective</th>
<th>Winner</th>
<th>Looser</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>- Generation tasks</td>
<td>- High-interaction contexts emphasizing choice</td>
</tr>
<tr>
<td></td>
<td>- Proposing</td>
<td>- Negotiation and execution tasks</td>
</tr>
<tr>
<td></td>
<td>- Sharing ideas</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Planning</td>
<td></td>
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<tr>
<td></td>
<td>- Arranging events</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Low-interaction contexts</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Dyadic communication</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Socialization</th>
<th>Winner</th>
<th>Looser</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>- Maintain ongoing relationships</td>
<td>- To make initial contact</td>
</tr>
<tr>
<td></td>
<td>- Initiating relationships in low-pressure contexts</td>
<td>- Develop relational understanding</td>
</tr>
<tr>
<td></td>
<td>- Seeking out and contacting others that shares our personal interests</td>
<td>- Achieve consensus</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Influence correspondents while working under external pressure</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Interpersonal influence</th>
<th>Winner</th>
<th>Looser</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>- Avoiding disconnect between the message being constructed and its actual effect on the recipients</td>
<td>- Failure to get writers' point across to accomplish their goals or advance their strategies</td>
</tr>
</tbody>
</table>

Table 6: Winners and losers in e-mail communication (Wilson 2002:122).
Wilson found that the participants in his study, all parts of project teams, all rated face-to-face communication higher than e-mail for all categories, socialization, completeness, execution tasks, choice tasks and generation tasks except for one: Speed. In Table 6, the results from the study are summarized. Wilson (2002:122) concluded:

For as long as e-mail helps its users win, it will continue to be an important communication medium. Humans are sufficiently flexible to endure a rules change, especially if the new rules are supported by an implicit metaphor readily adaptable from prior experience. [...] But it also appears that no existing metaphor is universally appropriate to e-mail, as e-mail instantiates characteristics of various media, from postal mail to television, and each characteristic can be important in its own time and place. [...] My findings suggest we can identify and mitigate e-mails' weaknesses, though we have to do it at a finer level of detail than is attainable by applying some existent communication metaphor. Instead, understanding e-mail communication likely requires us to study anew many of the same phenomena already researched and documented in traditional communication domains.

3.1.9 Privacy
Berghel (1997) asked the question: What makes e-mail different from other communication means that makes it possible to intrude on individuals' rights to privacy? Some distinctions are, according to Berghel, that e-mail users use the company computer system and that e-mail is more persistent in the corporation than the telephone. Berghel (1997:15) had one hypothesis:

Could it be the technological imperative has reared its ugly head again? Maybe employers read employees' email because they know how to do it without being obviously intrusive and without being detected. The question that society has to resolve is whether eavesdropping is somehow more ethical if it's digital.

Brigham and Corbett (1997:31) described two different points of view regarding the impact of electronic mail. One respondent in the Brigham and Corbett survey explained that invisible monitoring is possible in some e-mail software and this was considered a feature that made work easier because:

I can check if someone has received and/or read whatever I’ve sent them. It tells you the date and exact time the message was received and whether it as been opened. If it has not, you can contact them to see what's going on.
If they say they haven’t received the message, you can check to see if they’ve opened it. So you can’t just ignore messages anymore.

On the other hand there were other views that the respondents may feel less in control of their work, feeling monitored, intruded and inundated with e-mail messages. Brigham and Corbett (1997:33) concluded that e-mail is not solely a medium for communication but also an agent of organizational power because “It represents a ‘technological frame’ against which the behavior of the actors is judged, it enframes not only people’s communication and perceptions, but also shapes their values and conceptions of social reality.”

3.1.10 Flaming

A concept, flaming, is used when discussing computer-mediated communication. Sussman and Sproull (1999) studied if CMC helped people to deliver bad news in a straightforward manner. They found that this was true and that the results may help to understand flaming. Flaming is defined in different ways, for example: “[…] a stormy debate of uncontrolled outburst of anger.” (Palme 2003), and there are different statements about why CMC may cause hostile communication behavior. The word flaming may also “[…] refer to sudden intensive outbursts of lots of messages in e-mail distribution lists and conference systems, often on small specialized issues and with much repetition and long-worded contributions” (Palme 2003). Sussman and Sproulls (1999:159) study may give an alternative explanation: “People seem to do less ‘cushioning the blow’ of negative information when they use computer-mediated communication.”

Different researchers have come to different results and Palme (1995) is referring to Sproull and Kiesler (1991; see also Alonzo & Aiken 2004) who claimed that e-mail provokes flaming while other researchers claim that flaming does not occur more in e-mail communication than in other media. One reason that flaming may occur in e-mail discussions is that it is hard to reach consensus in an e-mail discussion. Another reason may be, according to Palme (1995), that the e-mail discussion has no time limit like a discussion face-to-face.

If CMC reduces the positive distortion of negative information, it may serve to increase straight talk that is suppressed during face-to-face communication. Since people use negative strategies to suppress straight talk in face-to-face interaction (Brown & Levinson 1987), communication partners may find the lack of such niceties in CMC unexpected or discomfiting. These partners may interpret straight talk as offensive, and may in turn respond defensively. Such an interaction sequence could indeed escalate to hostility. But the opening
move could have been one of straight talk rather than hostility. Rather than “causing” flaming, perhaps electronic communication “causes” straight talk in delivering negative information? O’Sullivan and Flanagin (2003) have shown that hostility in electronic communication is interpreted differently by sender, receiver and researcher, and that flames may be attributed to miscommunication instead. What is important in this discussion is the intention of the sender which is only apparent in the text, and without social cues and context, the recipient responds only to what it is possible to read in the e-mail.

McLaughlin et al (1995) analyzed characteristics of messages in some newsgroups and found that offending messages violated seven normative expectations, four of which are applicable to e-mail (See Table 7).

<table>
<thead>
<tr>
<th>Offending messages</th>
<th>Characteristics of offending messages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethical Violations</td>
<td>Posting private e-mail or personal information about others without permission, misattributions or misquoting of sources, harassment of individual messages</td>
</tr>
<tr>
<td>Inappropriate Language</td>
<td>Personal attack, hostile or coarse language, linguistic affections which distract or detract from message content</td>
</tr>
<tr>
<td>Factual Errors</td>
<td>Spelling and grammatical errors, mistakes with respect to names, places, and events, errors in summarizing others' messages</td>
</tr>
<tr>
<td>Incorrect/novice use of technology</td>
<td>Editing and formatting errors, multiple messages or signatures, failing to use follow-on option</td>
</tr>
</tbody>
</table>

Table 7: Offending messages in CMC, adapted from McLaughlin et al (1995).

3.1.11 Bullying and abuse

According to Baruch (2005) bullying is a verbal, aggressive behavior causing pain and it may be unconscious, unintentional or uncivil. The one who is bullying does not have to be aware of the consequences of his or her behavior. A study was conducted focusing on the effect of bullying at work where e-mail was compared with other means of communications in a large multi-national corporation (Baruch 2005).

Baruch found that there was a considerable level of bullying independent of the chosen communication media. The result showed no differences between negative effects based on the medium. E-mail is just another way of bullying at work but because e-mail has become a primary means of communication at the workplace it might add a feeling of social isolation. However, Baruch reported that there is no research that has determined whether e-mail reduces, increases or just changes the nature of bullying.

Romm and Pliskin (1999) studied if the advantages of e-mail could be used to deliberately abuse the power and political arena inside an organization. The purpose of their study was to explore in what ways e-mail might be used to
facilitate petty tyranny. In their case study Romm and Pliskin found that e-mail was used in different ways that could be described as petty tyranny. The first example was where the manager kept a record of the time people arrived and left their work, presuming that they logged in when arriving and logged out when leaving. The next example was a manager who created a “psychological distance” between himself and his subordinates because he refused, more or less, to communicate in other modes. This was not only annoying, but also frustrating and resulted in a decrease in productivity because the employees tried to get in contact through other means of communication without success. The third example was where the manager selectively screened the information so that his subordinates got different information and thereby out-maneuvered other people. The third example resulted in the manager being forced to leave the department.

Romm and Pliskin (1999) concluded by establishing that petty tyranny tends to lead to low leadership endorsement, to foster employees' frustration and stress, to lead to helplessness and alienation and altogether to undermine employees' self esteem. The result of all this is decreased performance and undermined social unit cohesiveness. Romm and Pliskin (1999:36) asked furthermore how the abuse of e-mail by the manager could be explained. There are five e-mail features that can lend themselves to political use:

1. **Speed**: It is easy to send a message to convene a meeting with short notice and control comings and goings.
2. **Multiple addressability**: It is possible to send an e-mail instantaneously and simultaneously to a large group of people. Using this feature enables the sender to organize meetings with short notice and keep employees hooked on their computers waiting for a message telling them something important.
3. **Recordability**: E-mail can be filed and used later when they are politically useful. Filing e-mail makes it possible to keep track of what time somebody answers e-mails.
4. **Processing**: The recipient may modify the content and then forward it to others.
5. **Routing**: It is possible to transmit messages that are slightly modified to selected groups and whose names may or may not appear as receivers of copies.

Because e-harassment is evolving in workplaces explicit policies give employers guidelines to follow in case of violations in computer-mediated communication, stated Borstoff et al (2007). They also discussed the imperative of training in e-mail use at all levels of the organization.
3.2 Media choice

There are different theories trying to explain why people or organizations choose a certain medium, and if we choose why do we choose one medium rather than another? Research in the domains of information systems and communications has stressed different, and at the same time, complementary explanations. Some theories maintain that different media are more or less rich and we as users ought to choose the medium depending on what we want to achieve. However, there are other theories that emphasize that we are successful in overcoming the shortcomings in different media. In this part different theories about media choice will be discussed: (1) Social presence theory, (2) Information richness theory (IRT), (3) Social influence theories, (4) Media naturalness theory and (5) Critical mass theory.

From a more practical view it is possible that people tend to use technologies that they are used to and therefore know that they are functional. They do not reflect upon what is the best choice in a certain situation, only that it is convenient according to Jansson (2005) because: “The more people learn how to use new communication media, and learn about how people react to what they ‘say’ when they write or interact at a distance, the smoother the communication will be.”

3.2.1 Social presence theory

An early theory on media choice is the social presence theory which emphasized the psychological aspects of using different communication media (Short et al 1976). The relationship between the communicators is important due to the choice of media and can be described in terms of, for example, personal, sensitive or sociable relationships. The social presence theory has been developed and adapted to new technical innovations that change human communication (See for example Biocca et al 2003). Because all scholarly work dealing with media choice and social presence theory refers to the early work of Short et al (1976) this description will also be retrospective and try to highlight the most important ideas behind the social presence theory.

A definition of social presence embraces the level of interpersonal contact and feelings of intimacy. Social presence has to do with a feeling of psychological closeness and a personal feeling of immediacy. To feel this psychological closeness we have to depend on visual cues. Important visual cues are eye contact, facial expressions, the way we dress and our gestures. All this gives us important cues about the other person and helps us achieve the important experience of being close to another person. Short et al (1976) did rank different kinds of communication based on if they were: (1) Unsociable or sociable, (2)
insensitive or sensitive, (3) cold or warm and (4) impersonal or personal. They stated that if we do not have enough cues about those we are communicating with we tend to be more focused on the task and less on the relationship (See Table 8).

<table>
<thead>
<tr>
<th>Task focus</th>
<th>Relation focus</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unsociable</td>
<td>Sociable</td>
</tr>
<tr>
<td>Insensitive</td>
<td>Sensitive</td>
</tr>
<tr>
<td>Cold</td>
<td>Warm</td>
</tr>
<tr>
<td>Impersonal</td>
<td>Personal</td>
</tr>
</tbody>
</table>
| -          | Visual clues  | +

Table 8: Ranking different kinds of communication depending on the level of visual cues (Short et al 1976).

Social presence theory deals with the extent to which a medium is perceived to convey the presence of the communicating partners in a specific context. Rice (1993) referred to Short et al (1976) and explained that social presence varies among different media and therefore affects the nature of the communication. The context, individual experiences and differences cause a feeling of intimacy or immediacy. According to Rice it is not always a matter of the communicating actors being aware of this, but if they are, they may choose an appropriate medium and thereby achieve a better work performance.

Communication in workplaces may be characterized as fulfilling both the need of information and functional relationships e.g. it brings out emotions between individuals (Panko & Kinney 1995). The social presence theory suggests that we use personal and sensitive communication to establish relationships but also to develop the way we relate to each other. Working life offers relationships and sometimes we get to know those who we work close to, even closer than our “out of work friends”. According to Panko and Kinney (1995) there is prior research that has questioned the ability of CMC to support relationships. They also referred to other studies revealing that we have – in general – few close personal relationships outside work, but they found in their survey that few working relationships are closely personal and they draw the conclusion (Panko & Kinney 1995:24): “Thus, even if media are inadequate in their ability to support close relationship, this may not be a serious concern […].”

3.2.2 Information richness theory or media richness theory

The media richness theory focuses on the capacity for carrying information in different media (Daft & Lengel 1984; Daft et al 1987). Proponents of this theory state that face-to-face communication is the richest medium because of its ability to allow immediate feedback, to use different signals like physical
closeness, body language, to provide a high language variety and to make it possible to express feelings with nuances. Text-based media like e-mail are regarded as a less rich media.

Rice (1993:452) explained the similarity between two of the most frequently occurring theories, the social presence theory (Short et al 1976) and the media richness theory (Daft & Lengel 1984; 1988; Daft el al 1987): “Both emphasize how communication media differs in the extent to which they (a) can overcome various communication constraints of time, location, permanence, distribution, and distance; (b) transmit the social, symbolic, and non-verbal cues of human communication, and (c) convey equivocal information.” Rice (1993:456) asked, “Is perceived appropriateness of a new medium associated with one’s usage of that medium?” and answered that the perceived appropriateness of a medium is rather stable over time regardless of changes in usage. Another interesting question raised by Rice is whether the characteristics of a medium are a result of a social construct or something that has to do with the intrinsic features of the medium.

Daft and Lengel (1988:225) emphasized that it is important to realized that there is a relationship between a communication medium and communication effectiveness and: “A medium can enhance or distort the intended message, and the explosion in electronic technology is making media selection an ever more critical issue. Each channel of communication [...] has characteristics that make it appropriate in some situations and not in others.” Daft and Lengel regarded effective communication as a process of matching and therefore the media for communication is supposed to match the nature of the message. In Table 9 a media selection framework is introduced that may be used as a guideline to achieve effective communication depending on media choice and depending on the type of management problem, routine or non-routine according to Daft and Lengel (1988).

Daft and Lengel stated that it is important to use rich media when communicating non-routine tasks, whereas lean media is preferable to achieve effective communication in routine matters. Information richness theory was developed by Daft and Lengel (1984), probably without awareness of the social presence theory, according to Rice (1993:452). One of the basic assumptions for this theory is that (Daft, Lengel, & Trevino (1987:356):

[...] organizations are, above all, human interaction systems. Information is conveyed through symbols and language systems that are used to interpret situations and adjust behavior. [...] Information acquires meaning and value as it is processed and transferred through formal and informal networks.
The richness of a medium is determined by its ability to convey information in ways that reduce equivocality. Choosing the right medium for information and communication is of vital importance to an organization. IRT is a generic information theory that was developed before e-mail and intranets became common tools for communication. The IRT states that effective communication is attained when a medium of adequate richness is chosen in a specific situation. Daft and Lengel (1984:196) established a media hierarchy based on (1) feedback capability, (2) communication channels, (3) source and (4) language (See Figure 2).
A later article by Daft et al (1987:358) extended and changed the criteria for richness for different media. The first and most important criterion is whether a medium allows instant feedback, giving the recipient an opportunity to ask questions and make corrections. If instant feedback is the most important criterion this might explain why different kinds of computer-mediated communication could be used for rich information exchange. Synchronous chat for example, and also e-mail if used as a synchronous medium, offers fast feedback compared to a meeting face-to-face with several attendees, a fixed meeting schedule, and a chairperson that is not interested in discussions.

The second criterion is the existence of multiple cues, for example physical presence, voice intonation, body language, words, numbers and graphic symbols. The third criterion is language variety, the degree of meaning that can be transferred with language symbols. Conveying numbers is different from conveying natural language. The fourth criterion is the degree of personal focus, meaning to what extent personal feelings and emotions are part of the communication. Face-to-face communication allowing immediate feedback and simultaneous communication of multiple cues is considered the richest medium because natural language and emotion cues are a part of face-to-face interaction. Using the telephone comes next with slower feedback and lack of visual cues and body language; however, natural language and audio cues over the telephone still provide some listener reactions and emotions. Individualized written communications allow a slow feedback process. Although voice and visual cues are non-existent, personalized communications are still richer than standard documents or bulletins, which are not directed toward any individual and are therefore less likely to elicit feedback.

Daft et al (1987:363) did not incorporate new media into their research, but declare: “the application of new media can perhaps be tailored to match richness capacity to communication needs.” In trying to stipulate the e-mail position in their hierarchy, they think it is similar to telephone or written memos because of the capacity for rapid feedback.

3.2.3 Social influence theory

Several studies have been published stating that e-mail is a richer media than the proponents of the media richness theory have asserted, since it can give other cues that the users learn to interpret in an organizational context. Another interesting view, in contrast to the media richness theory, is that the perception of richness in a media is socially constructed whereas media choice is affected by factors beyond media richness (See for example: Markus 1987; Markus 1994a; 1994b; Rice 1992; Zmud et al 1990).
The context is of vital importance and it is therefore important to discuss the social, interactive processes going on among individuals, groups, organizations and other social systems (Lea 1992, see Figure 3). The context will influence the communication and the context will change through the communication. To understand this, Fulk et al (in Lea 1992), stated that individuals must be acknowledged as active parts that have a direct impact on the computer-mediated communication in contexts that are not static but dynamic. The organizational communication behavior will be influenced by the context that has a history, a present and a future. Lea (1992) concluded that the result of computer-mediated communication is more a matter of people's capacity to carry through what they intend to do rather than a matter of the limitations of the technology.

Lea's findings are also supported by Markus (1994b) who found that managers used e-mail more and differently than the information richness theory predicted. Because of a collective behavior like using e-mail in a synchronous mode where recipients send fast responses to e-mail requests, the respondent perceived e-mail as associated with the use of the telephone. Markus found that social processes shape the adoption and use of different media.

Ngwenyama and Lee (1997) reinterpreted Markus' (1994b) results from the perspective of Habermas' critical social theory (Habermas 1979), and stressed that human beings are active actors that carry out different actions to attain certain goals. As social actors in an organizational context they process data into information that is rich because it is part of the organizational processing units that have evolved over time, and is not only a matter of the richness of the medium used. A social action is for example to send a message with certain content in a specific context, which therefore makes e-mail a richer medium...
than has been assumed in earlier research. The social context gives meaning to a message that people from the outside are not able to understand.

Panteli (2002:83) was interested in the text-based attribute of e-mail and found that “[…] text-based electronic communication is socially constructed by the context of the organization in which email is used.” The presented results showed that e-mail is a richer medium than earlier studies revealed, since there are actually social cues found in the messages. Social cues in e-mail signals hierarchical differences according to Panteli, for example people of higher ranks used signatures more often and wrote more freely than those of lower ranks. Hidden cues could also be found between the lines in e-mail messages. Panteli summarized that e-mail is a communication medium that supports hierarchical differences.

Rowe and Struck (1999) noticed that e-mail works better to communicate relationship-oriented values than task-oriented values, and that the prevailing organizational culture affects the choice of communication media. What communication medium to choose in an organization Rowe and Struck found was coherent with the organizational culture or the social context. This conclusion might be another reason why IRT is not stable in different organizations.

The theory of media synchronicity (Dennis & Valacich 1999) proposed that there is a set of five media capabilities important in group work, and that all tasks are composed of two fundamental communication processes, conveyance and convergence. Depending on which process is the most important in a certain task, different media can facilitate the process more or less since they have different combinations of capabilities or as Dennis and Valacich (1999) stated: “Performance will be enhanced when media capabilities are aligned with these processes.” Dennis and Valacich defined media synchronicity as:

[…] the extent to which individuals work together on the same activity at the same time, i.e. have a shared focus. The first step is to examine the ability of the media capabilities […] to support the two communication processes […] across the three group functions (production, group wellbeing, and member support).

Depending on whether the information exchange is followed by a deliberation of its meaning, where the goal is to transfer information but all members in a group need not to agree on its meaning (conveyance), or whether it is important that the group members agree on the meaning and also agree that they have a shared meaning (convergence), a low or high synchronicity is preferred.

Dennis and Valacich (1999) believed that there are five media characteristics that can affect communication. The first characteristic, immediacy of feedback, is to what extent it is possible to give fast feedback. Next characteristic,
symbol variety, has to do with the “height” i.e. the number of ways in which information can be communicated. The third characteristic, parallelism, refers to the number of possible simultaneous and at the same time effective conversations that can go on at the same time. The fourth characteristic is rehearsability referring to if the medium enables the sender to go back to the message and, if needed, fine-tune it before sending it. The last characteristic is reprocessability, the extent to which a message can be processed again. Dennis and Valacich (1999) concluded: “The ‘richest’ medium is that which provides the set of capabilities needed by the situation: the individuals, task, and social context within which they interact.”

Dennis and Valacich concluded that face-to-face is not always the “richest” medium for communication since the “best” medium depends on which media characteristics are most important in a certain communication situation. They also emphasized that switching media might be the most appropriate and summarized their analysis (1999:7):

P1: For group communication processes in which convergence is the goal, use of media providing high synchronicity (high feedback and low parallelism) will lead to better performance.

P2: For group communication processes in which conveyance is the goal, use of media providing low synchronicity (low feedback and high parallelism) will lead to better performance.

P3: A medium’s symbol variety will only affect performance when a needed symbol set is not available.

P4: Use of media provided higher rehearsability will lead to better performance.

P5: For group communication processes in which conveyance is the goal, use of media providing higher reprocessability will lead to better performance.

Carlson and Zmud (1999) studied if individuals’ perceptions about e-mail were influenced by knowledge and experience about different e-mail systems. They found that knowledge was an important factor when the individual was going to decide whether e-mail was a rich medium or not. Carlson and Zmud found four factors that decided the richness of the medium: (1) E-mail was considered rich if the information was sent when it was supposed to be sent, (2) if the individuals adjusted their messages to both communicating partners, (3) if it had the ability to communicate emotions and attitudes and (4) if a language was used that included variation, subtlety and associations. Carlson and Zmud’s findings also contradict the theory of media richness, and one conclusion was
that users who find e-mail a cause of overload might be helped by more education in e-mail software and more practical training.

3.2.4 Theory of media naturalness

Kock (2005) has developed a theory about media naturalness that aim to offer an explanation for the differences between the findings among the proponents for the IRT and its critics. The hypothesis behind the theory of media naturalness, compatible with social theories of behavior, has its roots in Darwin's theory of evolution. Kock stated that we, as human beings, have relied on colocated and synchronous communication for up to 99% through our evolutionary cycle. Research has found that we have developed a complex web of facial muscles, altogether 22 on each side of the face allowing us to generate more than 6,000 communicative expressions (Bates & Cleese 2001; McNeill 1998 in Kock 2005). Natural communication is the same as communication face-to-face according to Kock, and if we use a communication medium that is not close to this leads to a mismatch and has, of course, consequences because our brains are programmed through evolution. Kock stated that the higher the mismatch we experience, the lower is the naturalness of the communication medium used.

Communication through electronic means do fill a function today because we need a way to communicate without being in the same place at the same time, and we need some kind of record that we can go back to in order to remember what has been agreed on. E-mail, for example, is therefore very useful. Kock emphasized that we need an electronic medium that to some extent resembles face-to-face communication but at the same time has the advantages that some communication medium, like e-mail, has. Natural communication involves five key elements according to Kock (2005:12): (1) A high degree of co-location where it is possible to see and hear each other, (2) a high degree of synchronicity where we easily may exchange communicative stimuli, (3) the ability to convey and observe facial expressions, (4) the ability to use and interpret body language and (5) the ability to listen to speech.

When choosing different media for communication this will have an effect on three dependent constructs identified by Kock. The first is cognitive effort because our brain has been adjusted to the five key elements through evolution. Kock defined (2005:122) cognitive effort as: “[...] the amount of mental activity, or, from a biological perspective, the amount of brain activity involved in the communication action.” In electronic communication our cognitive effort increases, and Kock has found that fluency is 10-18 times higher in face-to-face communication than in e-mail in a complex group task. The exchange of 600 words face-to-face between two persons, for example, took 6 minutes but when
using e-mail it took 60 minutes. The degree of cognitive effort and our need of time are obviously independent.

The second dependent construct is communication ambiguity. We look for stimuli to make it possible to understand a message, and we automatically search for those stimuli that we are used to find in face-to-face communication. When not finding what we are looking for we fill in what is missing and this will often lead to misinterpretations according to Kock and increase communication ambiguity. Kock stated (2005:12):

The above conclusion is consistent with the empirical observation that certain feedback comments, especially those involving constructive criticism, which is often used effectively in face-to-face interaction together with other nonverbal cues that soften their tone, are interpreted in different (and often negative) ways when provided via email in business-related discussions – sometimes as very critical and blunt.

The third dependent construct according to Kock is physiological arousal for example excitement and pleasure. In electronic communication there is not much room for positive physiological arousal and therefore most users find e-communication duller than face-to-face communication. It is interesting to note, though, that Kock has found that decreased physical arousal has a positive effect on group task outcomes under appropriate circumstances. The reason for the positive effect is that a group is more engaged and focused in electronic communication than in face-to-face communication. This is true in task-oriented interaction but not in relationship-oriented communication according to Kock. Besides being focused on the task, members in electronic communication usually do not devolve upon gossip and other non-focused communication, and (Kock 2005:125): “[…] individuals compensated for the lack of naturalness of the communication medium used by preparing better thought out, more focused, and better contributions than in face-to-face meetings.” This is, however, not without problems because (Kock 2005:125):

The media naturalness hypothesis, however, argues that the face-to-face medium is […] the one likely to lead to the least cognitive effort and communication ambiguity, and the most physiological arousal during communication. The reason is that the face-to-face medium is precisely the medium used for communication during the vast majority of our evolutionary history. This implies that e-communication tools with features that allow group members to synchronously generate and access substantially more information than in face-to-face interactions also will lead to problems, likely due to information overload and other negative effects. [---]
Anything less or more, so to speak, than face-to-face communication would be likely to lead to problems in communication interactions.

3.2.5 Critical mass theory

Markus (1987) developed the theory of the critical mass. Its basic idea is that the value of a communication system is dependent on the number of users, the more users the higher the value. If a communication system has a large number of users, each user may reach a large mass of other users, and it is possible to get a chain reaction of messages and answers. Today e-mail has, indeed, reached a more than sufficient critical mass and the possibility of sending e-mail to an unlimited group of users has widely spread problems like information overload, spam and virus. The critical mass theory explains the diffusion of interactive media (Markus 1987:491) mainly depending on two characteristics:

First, widespread usage creates universal access, a public good that individuals cannot be prevented from enjoying even if they have not contributed to it. Second, use of interactive media entails reciprocal interdependence, in which earlier users are influenced by later users as well as vice versa. […] The influence of these two properties on the probability and the extent of interactive media diffusion within communities are the focus of the critical mass theory […].

Markus argued that universal access to a new interactive medium is an important outcome in a community. An interactive medium gives the member of a community an enhanced opportunity to communicate but it is important that all members have the possibility to communicate – have universal access – so that the organization will not be divided in subgroups; those who use the new medium and those who do not. If all members in a community are supposed to have universal access to a medium this includes also those who are disabled. To obtain full benefits for many users universal access is vital. Markus gave an example. Think of a project team where only half of the members use e-mail. This will be costly in terms both of time and effort since users must keep in mind who has access to e-mail and who has not, producing different kinds of messages and so forth.

The theory of critical mass is derived from economics and sociology and is a macro theory unlike the micro theories that explain individuals’ media choice behavior, Markus stated. Innovations spread, according to diffusion of innovation theory (Rogers 1983 in Markus 1987:493), “[…] when others either observe the early adopters or imitate them to replicate their profits or communicate with the early adopters and are persuaded or induced to adopt.” The in-
terdependence must be reciprocal to be successful according to the diffusion theory.

“What are the conditions under which reciprocal behavior gets started and becomes self-sustaining?” asked Markus (1987:496). Oliver et al (as quoted in Markus 1987) developed the critical mass theory to integrate and formalize different phenomena. The critical mass theory originates from physics where it determines “[…] the amount of radioactive material necessary to produce a nuclear fission explosion” (Markus 1987:496).

3.3 Information overload and attention
This section will briefly discuss information overload, its causes and effects. Also attention and its importance in communication will be accounted for. Information overload and attention deficit is not only a problem in e-mail communication but also a problem in all kinds of organizational communication. It is possible to talk about a kind of general overload in most work environments today because organizations tend to be run more and more lean, leading to fewer people to take care of more information.

3.3.1 What is information overload?
There are a variety of definitions of information overload in the research community. In ordinary life people usually tend to associate information overload or information stress with “too much information”. Eppler and Mengis (2003) have, in a review article about information overload research, identified three situations when information overload is prevalent in academic discourse: (1) Information retrieval, organization and analysis processes, (2) decision processes and (3) communication processes. It is interesting that researchers in various disciplines have found that the amount of information up to a certain point will help the individual in her or his performance. After reaching this point performance will decline because too much information will confuse the individual, affect the ability to prioritize and have a negative effect on memory functions.

The inverted u-curve (See Figure 4) may be derived from Schroder et al (1967 in Eppler & Mengis 2003:9) who defined information overload: “The decision maker is considered to have experienced information overload at the point where the amount of information actually integrated into the decision begins to decline. Beyond this point, the individual's decisions reflect a lesser utilization of valuable information.” When we get too much information the result will be that we become confused, have problems prioritizing and forgetting earlier information.
Dawley and William (2003) found that most employers in their survey found e-mail a highly useful working tool but they also felt that e-mail causes information overload. Too much e-mail was the main problem. Respondents with a master's degree complained more of e-mail overload than those with lower education. Dawley and William found no significant correlation between education and job level which might explain the differences. One explanation could be that individuals with higher education are more capable of seeing nuances and complexities in e-mail messages and therefore would be more exposed to information overload. They also found that the more experienced an e-mail user is the less information overload will be experienced. Another important finding was that e-mail overload to a high degree depends on peer misuse of e-mail. To improve e-mail use some kind of e-mail training program was asked for by the respondents. Dawley and William (2003:198) summarized their respondents' answers as follows:

1. I often feel overwhelmed by the number of e-mails I receive every day.
2. E-mail can reduce the number of meetings and phone conversations.
3. I feel confident that I can communicate effectively through e-mail.
4. E-mail is a good time-management tool.
5. E-mail helps make me more efficient.
6. I often feel like I receive too much e-mail.
7. Other employees need more training on how to use e-mail.
8. This organization should use e-mail more often.
9. I need more training on how to use e-mail.
3.3.2 Causes of information overload

The main reasons for information overload, according to Eppler and Mengis' (2003) review of research in the area, are related. We live in an information society that exposes us to information overabundance. On an organizational level there are at least five causes for information overload (Eppler & Mengis 2003:17):

1. **Information characteristics**: Increase in the number of items of information, uncertainty of information (information needed versus information available), increase in diversity of information and number of alternatives, ambiguity of information, novelty of information, complexity of information, intensity of information, increase in the dimensions of information, information quality and value and over abundance of irrelevant information.

2. **Personal factors**: Limitations in the individual human information processing capacity, decision scope and resulting documentation needs, motivation, attitude, satisfaction, personal traits (experience, skills, ideology, age), personal situation (time of day, noise, temperature, amount of sleep), insufficient screening by senders of outgoing information and slow adaptation by users of computers when interacting with new technology and break downs in social communication barriers.

3. **Task and process parameters**: Less routine tasks, complexity of task interdependencies, time pressure, task interruptions for complex task, too many and too detailed standards, simultaneous input of information into the process and rapidly evolving innovation and shortened lifecycle of interdisciplinary work.

4. **Organizational design**: Collaborative work, centralization (bottlenecks) or disintermediation (information searching is done by end-users rather than by information professionals), accumulation of information to demonstrate power and group heterogeneity and new information and communication technologies (e.g. groupware).

5. **Information technology**: Push systems, e-mails, intranet, extranet, Internet, various distribution channels for the same content, vast storage capacity of the system and low duplication costs and speed of access.

Thomas et al (2006) have found several studies that show that e-mail overload is a problem in the workplace but they also stated that there is surprisingly little knowledge about why this is the case. There are different reasons for e-mail overload, according to Thomas et al (2006), who found in their textual and focus group analysis seven common occurrences that affect social processes and thereby might contribute to e-mail overload among managers: (1) Unstable requests, (2) pressures to respond or expectations of immediacy, (3) delegation of tasks and shifting interactants, (4) the ease of distributing e-mail, (5) the
never out of contact assumption about the recipients, (6) the ability to multitask in new ways and (7) tasks that are highly complex.

It is interesting to notice that Thomas et al in the beginning of their study made one assumption that e-mail overload could be due to poorly written messages, but after analyzing 1,727 messages they found that only 3% had to be reread and that 70% took less than 1 minute to read. This can be compared to Palme (1995) who found that it took approximately half a minute on average to read one e-mail message. Even if this was the case the participants in Thomas et al’s study found that e-mail generated strong feelings of e-mail overload.

E-mail might exert a powerful hold on its users, according to Hair et al (2007), and many e-mail users experience stress depending on e-mail related pressures. In their study they developed a three-folded typology depending on orientation towards e-mail: Relaxed, driven and stressed. They tried to find out whether locus of control and self-esteem influenced the individuals’ orientation towards e-mail.

A relaxed orientation is characterized by users considering e-mail as an asynchronous communication medium and not a fast postal service, and with no expectations of fast feedback. “Those for whom this is the dominant orientation deal with e-mails as and when they see fit and refuse to allow anyone to exert long-distance pressure on them” stated Hair et al (2007:2800). A driven user finds the pressure to respond positive and also expects fast feedback on sent messages and sees e-mail as a synchronous medium. The last category of users is categorized as stressed. They react negatively to the pressure of responding and do not find e-mail a useful medium. Hair et al found that low self-esteem seems to be related to the driven orientation but it could not explain the stressed orientation. Hair et al did not find any evidence that locus of control had any impact on orientation. Lack of control, on the other hand, influences the user negatively towards a stressed orientation.

Russel et al (2007) found that 68% of the respondents felt overloaded by e-mail mainly because of large backlogs after a period of absence but also because others’ expectations of fast feedback to their e-mail created stress when the recipient was busy and also because of unanticipated work arising from e-mail. They also found that people use a wide range of different strategies to deal with e-mail interruptions that change according to situational parameters (Russel et al 2007:1833): (1) Faced with demanding situations the users engage in strategies for ignoring e-mail interruptions, (2) while facing boring tasks e-mail interruptions are welcome and more time is spent dealing with it, (3) waiting for an e-mail engages strategies to ensure that the e-mail is received as soon as possible and (4) when too many e-mail interruptions make people overloaded they apply strategies to reduce the perception of overload.
3.3.3 Competition for attention

Competition for attention is a well-known problem in most organizations and this competition can be one of the reasons why it is hard to get the expected reaction when sending e-mails. Each member of the organization must choose the information that they attend to, not to be overwhelmed by too much information. This may cause a problem while the individuals need to keep up to date on a broad – and sometimes conflicting – range of issues and this will sometimes cause an increasing discrepancy between the subjective need for information and the available information. Another gap, common in many organizations, is when those responsible for the top-down flow of information do inform, but the information does not reach the recipients. An interesting question is why do these paradoxes exist?

Our individual thinking and ways of handling information influence our perceptions of reality, and there are no obvious connections between accessible information and behavior (Hellgren & Löwstedt 1997). Individuals choose which information will get attention, and also how it would be interpreted. Without an individual cognitive structure the world will become confusing, and we would have problems orientating in time and space, because what is happening around us would make no sense. Humans are instead regarded as active creators of our shared reality in cognitive organizational theory. Hellgren and Löwstedt (1997) stated that it is not interesting to study how different stimuli will influence behavior but to focus on cognitive processes and structures usually referred to as mental “maps”. To understand an organization Hellgren and Löwstedt emphasized the importance of understanding human thoughts and thinking in constant ongoing social processes instead of regarding organizational evolution as built on rational decisions.

Hallowell (1999; 2005) discussed a neurological phenomenon called attention deficit trait (ADT). ADT is a response to a hyperkinetic environment. Because of the constantly growing information flow inside today's organizations it is a real problem according to Hallowell (2005:55) who explained what is happening:

> When a manager is desperately trying to deal with more input that he possibly can, the brain and body get locked into a reverberating circuit while the brain's frontal lobes lose their sophistication. The result is black-and-white thinking; perspective and shades of grey disappear.

People's thoughts and thinking are thus a constant ongoing intellectual process, but also a social process in trying to understand and create meaning in a social context. This process is designated a cognitive process, including thinking, perception and memory. Davenport and Beck (2001) stated that because our
brains, through all senses, have a tremendous capacity to attend to information, and in our information rich surrounding it is not the amount of available information that is the problem, but the ability to create attention. Their definition of attention is (Davenport and Beck 2001:20): "Attention is focused mental engagement on a particular item of information. Items come into our awareness, we attend to a particular item, and then we decide whether to act.”

People must, in other words, perceive a message to be able to react to it. According to Burgoon et al (1994) the ability to perceive or notice a message can be affected by several factors like physiological deficiencies, psychological or physiological needs or cultural background. It is also important to note that the recipients, like the senders, have an active role in all communication processes because they are the one who choose to respond or not respond to a message, and therefore decide the topics to discuss and the depth on interaction (Burgoon et al 1994). An important aspect of this statement is that the recipient play a vital role in deciding whether to give the sender and the message attention or not, and that attention and perception are key concepts whenever discussing work related matters where information distribution is an important part.

In these information rich surroundings Kolb (in Ess 1996) mentioned that e-mail offers focus and rapid answers. Not answering a written letter in a month or so may not cause problems, but not answering e-mails may signal to the sender that the relationship has ceased. Furthermore the content of the message is probably not pertinent anymore. According to Kolb e-mail may be used for a fast rhythm of sending and answering messages and therefore encourages certain patterns of behavior and suppresses others. Instead of long sentences with arguments presenting a comprehensive view of something it is more common to use short sentences point-to-point. This kind of point-to-point discussion does not demand our total attention, except for very short moments.

Awareness will be merged with attention when information reaches the thresholds for sensemaking in our minds, and these ongoing sensemaking processes cause a potential for acting according to Davenport and Beck (2001). Although people have great capacity to notice different stimuli through their five senses it is vitally important for all human beings to filter and thereby achieve sense in what is going on in their environment.

If stressing the importance of trying to manage the attention, it is essential to understand how the nature of human beings influences our mental focus. It is true that our brains are very capable of information handling but it is also important to understand that we are not able to focus on more than one or two different topics at the same time. Focusing on some information is part of an instinct for survival and Davenport and Beck (2001) urged us to be careful about
the widely spread use of information technology because it may contribute to information overflow and thereby cause attention deficiency.

When discussing attention deficiency in an organization it is essential to consider all kinds of information flows, and not only a medium like e-mail. All information independent of whether it is written, oral or electronic causes an information climate that either helps or works against people’s need for mental time and space to filter and sort information to make sense of what is going on. One feature of e-mail is that it is easy to ask questions and look forward to a prompt reply; wishful thinking that often causes frustration.

If accepting attention as a scarce resource in today's organizations, information sharing and processing using e-mail may be more efficient if using feedforward and feedback as a habitual routine when trying to get through the information glut (Sjöqvist 2005). Jamieson et al (1976) stated that feedforward is a term used for describing a kind of control system to maintain a desirable state of the system. Feedforward, like feedback, was originally a technical term used for different kinds of control systems, where feedforward was used to suppress the disturbance in a system before it affected the system (Heylighen & Joslyn 2001). A typical technical feedforward device is a thermostat. Feedback is a common term used in communication theory compared to feedforward. The function of feedforward in e-mail communication would be to tell the recipient what kind of reaction that the sender is expecting and why, i.e. the intention of the sender. It is a way of limiting possible interpretations which hopefully makes the communication more effective.

3.4 Organizational communication

To get an idea about the complexity of human communication with or without mediation by computers, this section offers an introduction to some approaches to organizational communication. A discussion about communication competence will complete the section in order to focus on our capacity to improve our communication skills.

3.4.1 The transmission approach contra the sensemaking perspective

There are different traditions in the area of communication theory representing different approaches of functions and perspectives on communication. McNamara (2007) has observed that:

Communication is one of those topics that tend to leave people feeling somewhat confused or sometimes bored. People get confused because communication is such a broad topic and it seems to somehow relate to
everything. People who get bored assume that they've been communicat-
ing since childhood so why bring up the topic of communication.

With this statement in mind, looking at communication mainly as an act of
transferring information is referred to as the transmission approach which has
its roots in a well-known theory emanating from Shannon and Weavers (1948;
1949). In 1948 Shannon and Weaver formulated a theory for information trans-
fer in a technical channel. A message from a sender is coded and is sent
through a channel, i.e. an artifact of some kind, and the message is received by
another artifact, is decoded and then reaches the destination. Information trans-
fer may be disturbed by noise resulting in information loss. The efficiency of
an information channel is measured by, for example bits per seconds. Measur-
ing information efficiency in this way has become the leading way in technical
contexts but has little to do with human communication (Gärdenfors 1996).

Gärdenfors (1995; 1996) argued that information is present in two worlds,
the technical world and the human world. When we describe e-mail communi-
cation technically, it does not provide us with a deeper understanding of what is
going on inside an individual's mind. In fact, information in the technical world
has little to do with the information in the human world. In the technical world
it is possible to measure and describe the information, but this does not repli-
cate the way information works in a human mind. Gärdenfors (1996) sought to
understand how humans process information by studying the way we use
words, determine the meaning of words, interact and give feedback. We all de-
pend on our relationships with others, communication is the basis for these re-
lationships. We communicate words to other people, but also communicate ex-
periences, thoughts, feelings and values.

The transmission approach to communication is still part of the discourse
today since we use words like message, sending, sender, recipient, noise etc.,
when talking about human communications. Shannon and Weaver's model is
simple and easy to understand, and because communication usually is a com-
plex issue we need a concrete metaphor when talking about and explaining
communication in everyday life. Heide (2002) explained that if we use the
transmission approach it is easy to solve communication problems because it is
then just a matter of choice of transfer channels, because the clearer message
we produce and the less noise there is through the transfer the fewer the prob-
lems.

The sensemaking perspective stands in sharp contrast to the transmission
view, where human needs of understanding what is going on in their surround-
ings is a prime mover. There are different theories on how sensemaking proc-

Dervin used a concept – gap – and it represents the individual's need for information in a certain situation. To be able to handle all available information it is important to filter to create some kind of system of the experience. Dervin stressed that the information that we attend to is limited and subjective and there are several reasons for this. One reason is that our senses set bounds like our spatial whereabouts, and we are also carrying our earlier experiences with us, and also our apprehension about what will happen in the future. All this together is present when we are choosing what to observe and how to react on external stimuli.

Dervin (1983:3) defined sensemaking as a behavior that is both internally grounded in our cognitive process, and externally grounded in joint procedurals. These cognitive processes and joint procedurals help us continuously to make sense of the social environment that we are a part of. As long as we understand what is happening it will make sense for us, but sometimes there will be a cognitive gap making us confused and we try to get more information to get on the right track again. Dervin focused on individual information seeking activities, but not as a transforming activity but as a constructing activity because meaning in information is related to people and produced in a certain context. An important aspect of this view is that we use others' observations as well as our own to reduce any cognitive gap that has arisen.

Weick (1995) stressed the fact that we are looking at incidents or episodes after they have occurred and only then are we able to understand what has happened. It is also important to realize, according to Weick, that we choose some cues in a social process that already fits our existing conception of the world. Weick (1995:75) stated, “If the communication activity stops, the organization disappears. If the communication activity becomes confused, the organization begins to malfunction”. By this Weick meant that organizations are not stable systems but depend on ongoing organizational processes to function. In this organizational process communication is vital.

Weick (1995) defined several methods for sensemaking: (1) Provide space and room for reflection and dialogue, (2) give all individuals the ability to make practical tests and (3) provide a possibility to verify the information by comparing different sources. It is important to notice, according to all of Weick's methods of sensemaking demands, that each individual has enough time to reflect, try and verify information. Without these prerequisites the communicative processes that will help people in their sensemaking processes will fail to happen.
In the simplest term, looking at a communication process, it always starts with something. This “something” does not have to be a string of information from outside the individual, but could be an idea from internal, individual thoughts i.e. our cognitive processes. One underlying idea in this thesis is that depending on the context, situation and people involved, e-mail messages may be interpreted differently. The impact varies with the individual recipient, depending on his or her cognitive and emotional patterns. When the message arrives, the source, the subject, the content and the style of language can also have an impact. Furthermore, individuals have pre-determined expectations about how information should flow inside an organization.

In other words, everyday communication has little to do with the simple transfer of facts. In order to transfer facts effectively to another human, it is vital for the information flow to be part of a sensemaking process. Humans seldom need just factual information to make sense of a situation; they may even use non-existent information (such as what the sender leaves out) to derive meaning. We learn to communicate as children, but communication is a skill that we have to re-learn again and again as our horizons expand. Burgoon et al (1994) declared that learning communication skills is a life-long process. It is also important to realize that the results of the communication may stay and influence our behavior for a long time thereafter.

3.4.2 Communication in organizations
One of the most important kinds of organizational behavior is communication (Trenholm 2005), but among scholars in the field of organizational communication there is no homogeneous definition about what organizational communication is (Heide 2002). An organization has a number of interested parties that need different kinds of channels to satisfy their requirements for information about, and communication with, the organization. Depending on the target group the purpose of the communication will differ. Independent of purpose Heide (2002) stated that organizational communication is important to achieve certain goals, implying that an organization is a social system composed of groups that are interdependent. Communication in organizations serves mainly three functions (Shockley-Zalabak 2002). The first function has to do with relationships because all members in an organization need to be integrated in their work environment. The second function is to organize members in organizations by guiding, directing and controlling them. The third function, the change function, helps the members of organizations to adapt to changing conditions by analyzing, solving problems and finding new ways of acting.

Baker (2006), in her review of historical trends and the increasing importance of organizational communication, found that organizational communica-
tion, as a field of academic study, is highly diverse and fragmented. It spans, according to Baker, the micro (interpersonal communication), meso (group communication), macro levels (all high order communication) and internal as well as external communication. Poole and McPhee (1983) pointed out that organizational communication creates and maintains organizational identity, or climate. New members of an organization adapt to the prevalent communication climate, and when the climate changes so does the communication. Jablin (1982) also stated that it is important that new members in an organization use communication to become socialized. The degree of socialization will determine how successful an individual will become within the organization, and the individual’s expectations of the workplace are important in the process of assimilation.

Communication competence (See more in 3.4.8, p.75) is critical to organizational life because through communication individuals coordinate their efforts to achieve common goals. Trenholm (2005) stated that successful communication makes organizations more effective and employees more satisfied and committed. Organizational communication is driven as well by personal goals as by common organizational goals. Organizational communication is therefore more formal than communication in other contexts (Trenholm 2005).

There are consequently different theories of organizational communication and mostly they link communication processes to organizational processes, but Weick (1969) went one step further by stating that communication is the organization, meaning that it is communication that constitutes an organization. An organization is supposed to be studied in its existing information environment, both from internal as well as external sources. To handle this information flow is a challenge, both taking the amount as well as the ambiguity of the information into consideration. The term used by Weick (1969) is equivocality. By this Weick meant that all information might be understood in multiple ways. If information is equivocal, individuals do not need more information as in the case with uncertain information, but they do need to decide which interpretation is the best fit.

One way of reducing equivocality is to stipulate guidelines or rules to help individuals to act (Weick 1969). These rules may be formal or informal. If rules do not work, another way to reduce equivocality is to engage members of organizations in communication cycles known as double interacts (Weick 1969). Double interacts consist of an act, a response, and an adjustment developing an interdependent communication relationship. The way people choose to act is not predetermined but socially constructed. It is not every individual by himself, but the entire set of individuals in an organization that define the organization.
Recognizing that there are multiple ways of interpreting information and that there is a need for processes to make sense of the information is the first stage, *enactment*, of a social cultural evolution for organizations according to Weick (1969). The second stage is to choose between rules or double interacts, *selection*. The third stage is *retention*, a form of organizational memory that organizational members might refer to again.

### 3.4.3 Interpersonal communication

Interpersonal communication is usually defined as communication between two people. For Trenholm and Jensen (2004:5) “[…] communication is the process whereby humans collectively create and regulate social reality” in a cultural context. They referred to communication as a process because human communication is dynamic, without beginning or end, and constantly changing (See also Burgoon et al 1994). To understand what is going on, it is important to see communication as a part of an ongoing stream of events, and that what we say and do will affect what others say and do. To understand a communication we need to look on it as a process. Trenholm and Jensen stressed the importance of human language because it gives us the possibilities to be creative and flexible, but also to be stupid or insulting.

Human languages rest upon mutual agreements for their meaning, and communication is therefore collective. Communication allows us to create the world but is also a powerful regulator of action (Trenholm & Jensen 2004:9) because: “Through communication we can persuade, dissuade, anger, hurt, comfort, soothe, entertain, or bore one another. We can use communication to control our own actions, talking ourselves into risks, or comforting ourselves when we are afraid.” Human communication is distinguished by several characteristics according to Burgoon et al (1994):

1. Communication is about interchange where different actors play various roles.
2. It is transactional by nature, meaning that if one element in the communication process changes, all other elements may change.
3. All human communication has an impact on someone.

It is of vital importance to understand that human communication is affective involving other people's feelings and emotions. Burgoon et al (1994:14) stated that “Communication must have an impact on someone, or it simply is not communication.” This point is illustrated by the old riddle, “If a tree falls in the forest and no one hears it, does it make a noise?” In the realm of human communication, the answer would be “no.”
3.4.4 Intrapersonal communication in interpersonal communication

Dainton and Zelley (2005:25) explained that individuals always try to give meaning to a given event by processing every message internally and they explained, “In other words, meaning is derived only after an individual perceives a message and gives it meaning; meaning resides in people's interpretations, not in the words or behaviours themselves.” Intrapersonal communication could be defined as the process where the individual has all the roles in the communication process; sender, recipient and provider of feedback in an internal process. This ongoing process embraces feelings, attitudes and thoughts about the future but also an appraisal of others. Our self-esteem is also an important factor in the internal communication process as well as in internal problem solving.

Intrapersonal communication refers to “to the way that individuals assess others' behavior, attitudes, and messages to assign meaning” according to Dainton and Zelley (2005:44). Theories in the area of intrapersonal communication try to illustrate the internally driven processes necessary to help the individual to understand a message. One intrapersonal theory is the message design logic (O'Keefe 1988) which is founded on the fundamental idea that because people think differently, i.e. they use their own message design logic, they will create different kinds of messages. In a stressful communication situation this will be particularly evident. O'Keefe (1988) found that people tend to use rather uniform techniques and has identified three different design logics that individuals can choose between.

In **expressive message design** logic the communication is sender-focused and aims to convey the sender's thoughts and feelings. When using this logic people tend to reveal their thoughts, and honesty is very important for them. It is also important to realize that they pay little attention to context and what may be appropriate behavior.

In **conventional message design** communication is a game cooperatively played with certain rules for behavior in a certain context where roles and relationships are important for communication. O'Keefe (1988) found that people following this design often say and do the “right” thing and are often regarded as very polite.

In **rhetorical message design** logic communication is viewed as a way to create and negotiate multiple goals. Those who use rhetorical message design logic are flexible and play close attention to other people's communication in order to figure out their point of views and to rely on social conventions to produce appropriate messages. O’Keefe found that they are proactive in their communication instead of reactive like the expressive design logic people.
To be aware of these variations may help us understand why communication sometimes is a problem, because communications between people using different design logics may cause misunderstandings. If people use the same design logic they may realize that they have communication problems, but people using different design logics may not realize that they have communication problems and blame difficulties on their communication partner (O’Keefe et al 1997).

<table>
<thead>
<tr>
<th>Message Recipient</th>
<th>Expressive MDL</th>
<th>Conventional MDL</th>
<th>Rhetorical MDL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Expressive MDL</td>
<td>Genuine differences in opinion prevent communicators from achieving any connection.</td>
<td>Expressive remarks perceived as embarrassing or crude due to appropriateness.</td>
<td>Expressive person perceived as incon siderable and unco operative.</td>
</tr>
<tr>
<td>Conventional MDL</td>
<td>Ritualistic messages are taken literally by the expressive person (such as “Let’s get together soon”).</td>
<td>Differing views of appropriateness of the situation lead to perceived inappropriate behavior.</td>
<td>Conformity to appropriateness viewed as rigidity, overly conservative approach to interaction.</td>
</tr>
<tr>
<td>Rhetorical MDL</td>
<td>Messages viewed as unnecessarily elaborate and indirect; sender viewed as dishonest.</td>
<td>Failure to see coherence of complex messages because of focus on “correct” context.</td>
<td>Incompatible assumption about goals can lead to misunderstanding of other’s intent.</td>
</tr>
</tbody>
</table>

Table 10: Forms of miscommunication due to message design logic (O’Keefe et al 1997:42 revised by Dainton & Zelley 2005:30).

There are different forms of miscommunication that may be the result of different design logic. Table 10 shows different combinations of design logics and possible outcomes. O’Keefe et al (1997:49) concluded: “Those who use an expressive design logic are less capable communicators than those who use conventional design logic, who in turn are less capable than those who use rhetorical design logic.” O’Keefe et al also emphasized that design logic has nothing to do with personality traits because the use of design logic tends to change and develop unlike personality traits that are more static.

3.4.5 Communication and meaning

Interpersonal communication is also personal because the words people use are symbols by which they may share meaning. However the meaning of a word is not the same as the thing it represents. Rather, meaning comes from the people who use the word. Thus, the meaning intended by the sender may be different
than that perceived by the recipient. The purpose of communication is to achieve a shared meaning and therefore it is important to understand that (Burgoon et al 1994:14):

Because meanings are in people, communication is as personal as the individuals who use it. It is impossible to separate self from the communication process because all our experiences, attitudes, and emotions are involved and will affect the way we send and interpret messages.

Communication also serves an instrumental function by which people gain control over their physical or social environments. Depending on the individual goal for communication, the instrumental function may be different. Instrumental communication is a strategic activity. People are able to learn and adopt different communication skills to achieve their goals. Close to the instrumental function there is also a consummatory function (Burgoon et al 1994:17):

We would define consummatory purpose as any communication activity that has the goal of satisfying the communicator without any necessary intent to affect anyone else. […] Just because there was no intent (that is, purpose) to have an impact does not in any way imply that no impact will occur.

3.4.6 Communication and intention

Some definitions of communication are too general to be useful, according to Burgoon et al (1994). In order to develop their view on communication, they have categorized different situations; depending on the sender’s intent and the recipient’s perception, see Table 11.

<table>
<thead>
<tr>
<th>Source has an intent to communicate</th>
<th>Source does not have an intent to communicate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recipient perceives an intent to communicate</td>
<td>A. Communication</td>
</tr>
<tr>
<td>Recipient does not perceive an intent to communicate</td>
<td>C. Communication attempt</td>
</tr>
</tbody>
</table>

Table 11: Communication and intention matrix (Burgoon et al 1994:21, modified).

If both source and recipient intend to communicate, an unambiguous communication situation exists. If either source or recipient does not intend to communicate (B and C), there is still communication intent because one of the parties either intended to communicate or perceived such intent. Obviously, under these conditions, there will be communication problems. Even D is a commu-
nication situation because some behavior might result from it. Burgoon et al summarized their definition of communication (1994: 22):

Communication is symbolic behavior that occurs between two or more participating individuals. It has the characteristics of being a process, it is transactional in nature, and it is affective. It is a purposive, goal-directed behavior that can have instrumental or consummatory ends.

Burgoon et al (1994) reflected that it is interesting to see each actor playing two different roles because it reflects how people see others trying to communicate. An interesting question is how does the source influence the recipient? In finding the answer, the situation and the purpose of the communication are two important factors. One important variable is credibility. It is a well-known fact that some people are more effective communicators than others. For example, "charisma" is one characteristic that can lend credibility, even when it is not warranted. Thus, credibility lies in the eyes of the beholder. It is associated with facts that are not within the source's control, such as gender, age, ethnicity and socio-economic status.

3.4.7 Power and source credibility

Power is important in any discussion of human relationships, including communication activities (Burgoon et al 1994). People communicate in a socially defined structure, embracing those on whom they are dependent. In communication a power relationship may be out of balance because one person has a power advantage. If the actor with less power has alternatives this can, of course, affect the outcome of the communication. If the power/dependence elements are balanced, then it is defined as a mutual power/dependence relationship in which communication is more likely to occur. Power may also be perceived, even if it does not really exist.

While credibility lies in the eyes of the beholder the recipient is as important as the source in determining the outcome of a communication interaction. Burgoon et al (1994) stressed that, depending on a broad spectrum of variables, the recipient may interpret the message in different ways. Adaptation between source and recipient is important for effective interaction, and both parties need to adapt to each other. A recipient's demographic characteristics – age, gender, social and economic status, ethnic factors and intelligence – are all important in decoding messages. The recipient also has psychological characteristics like self-esteem, aggressiveness and hostility, anxiety and prior attitudes that impact the reception of a message. Burgoon et al summarized the findings of contemporary communications scholars as to what constitutes a credible source:
• The first dimension is competence, both perceived and actual. Competence depends on education, access to relevant information and previous experience.

• The second dimension rests on a subjective perception of the character of a person. A “good character” is something that we tend to ascribe to a person who has demonstrated goodness, decency or trustworthiness. Of course, people’s standards vary, and our perceptions of character are most often highly personal judgments.

• The third dimension is the degree of composure that we perceive in the sender, particularly under conditions of considerable stress.

• The forth dimension is sociability. People are influenced most by those who communicate with them the most.

• The fifth dimension is the degree of extroversion. To a certain point, an outgoing personality has a great impact on other people, but if the communicator is perceived as domineering, that decreases the effectiveness of the communication.

Burgoon et al concluded that the perception of a source’s credibility might be subject to change in both a positive and negative direction. The degree of similarity between the source and the recipient will affect the communication process. In general, there are two ways to establish the degree of similarity. One way includes similarities that are obvious to an impartial observer; another way is the subjective perception of similarities by the actors. If we can choose with whom to communicate, we tend to choose someone who is similar to ourselves. Complete similarity, however, may cause a static state and decrease communication effectiveness. The purpose of the communication is especially important when considering similarity. Communication means moving concepts from the mind of the sender to the mind of the recipient, and this works best if both minds are similar, so that the new information fits into the structure of the mind of the recipient. If the minds of the sender and the recipient are very different, then there is an increased risk that information may be misunderstood.

3.4.8 Communication competence

Communication competence may be hard to define, because there are many different issues to consider when discussing if communication is competent or not (Wilson & Sabee 2003). Although this is a fact, McNamara (2007) claimed:

Unless management comprehends and fully supports the premise that organizations must have high degree of communication (like people needing lots of water), the organizations will remain stilted. Too often, manage-
One basic condition for communication to be successful is that the recipient understands the senders' intention, and that both the sender and the recipient agree that the recipient has understood the message (Clark 1986). Communication competence is often, among scholars, referred to (Dainton & Zelley 2005:220) as “[…] achieving a successful balance between effectiveness and appropriateness. Effectiveness refers to the extent to which you achieve your goals in interaction. Appropriateness refers to fulfilling social expectations for a particular situation.” To be a competent communicator both effectiveness and appropriateness have to be attained.

Spitzberg (1994:31) defined effectiveness as “[…] the accomplishment of relatively desirable or preferred outcome.” and emphasized that this outcome does not necessarily need to be positive. To be effective in a certain situation a competent approach is to be efficient in achieving desirable goals. Spitzberg (1994:31) defined appropriateness “[…] as enacting behavior in a manner that is fitting to the context, thereby avoiding the violation of valued rules, expectations, or norms”. Appropriateness does not mean that a person has to behave in a conforming or polite manner to behave appropriately. Sometimes the situation has no norms to conform to or existing norms may have to be challenged in order to behave appropriately. To behave in accordance with what may be regarded as appropriate, a common view of the norms must be achieved for all parties involved in a communication. Both criteria are important because depending on the balance between appropriateness and effectiveness the level of competence will vary (See Table 12).

<table>
<thead>
<tr>
<th>Effective</th>
<th>Inappropriate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appropriate</td>
<td>Inappropriate</td>
</tr>
<tr>
<td>Optimizing/Ideal communication</td>
<td>Maximizing</td>
</tr>
<tr>
<td>Sufficing</td>
<td>Minimizing</td>
</tr>
</tbody>
</table>

Table 12: Level of competence depending on communicators' behavior, extracted from Spitzberg (1994:32).

Appropriate and effective communication leads to an optimized state of communication or ideal communication. Being effective but inappropriate for example when lying, cheating and incorporating competitive overtones will lead to a maximized communication but the outcome or behavior will not be regarded as competent. Somebody that behaves appropriately but ineffectively may not be doing any harm, the sufficing style, but the behavior will not fit the
demands of competent behavior. And last the inappropriate and ineffective communication style will minimize communication.

The words *maximizing* and *sufficing* chosen by Spitzberg might, be considered inadequate when discussing communication competence. Maximize means that someone get the most out of something and suffice means that something is enough. From an individual point of view this might be satisfying but not from an organizational point of view. Spitzberg emphasized the fact that appropriateness is decided by the context. Communication in a specific organization must therefore be in conformity with organizational rules and norms to be considered appropriate.

What is appropriate or effective communication in a certain situation or context is, of course, not to be taken for granted because ideological features will determine it according to Spitzberg. It is important, though, that communication competence facilitates satisfactory relationships, that the impression of communication competence will influence any relationship, and that competence has a significant impact on communication patterns, motivation and self-confidence.

Competent communicators are responsive to expectations because they understand which verbal and nonverbal behavior is expected or unexpected in different situations and contexts (Wilson & Sabe 2003). Another interpretation of competence is that competence is a specialized system of abilities, proficiencies or skills, which enable a person, team or organization to act and react when completing concrete and familiar as well as novel tasks (Weinert 2001). Communication competence in an organizational context therefore cannot be defined abstractly, and communication competence is studied in different scientific fields as well as in very different relational, institutional and cultural contexts. Wilson and Sabee (2003:3) thought that there are, at least, three widely accepted tacit beliefs underlying this:

(a) Within any situation, not all things that can be said and done are equally competent
(b) Success in personal and professional relationships depends, in no small part, on communication competence.
(c) Most people display incompetence in at least a few situations, and a smaller number are judged incompetent across many situations.

Dainton and Zelley (2005) noticed that although they have introduced thirty-two theories of communication there are no explicit recommendations about effective and appropriate communication behavior. Theorists tend to give general directions and it is up to the practitioner to fill in what is missing in order
to be a competent communicator. Dainton and Zelley (2005:220) summed up that there is one important decisions points to consider: Should communication be direct, indirect or somewhere in between? Being direct gives less room for misunderstanding, but directness may cause problems in certain situations, for example different cultural contexts have different ideas about directness.

There are also other situational factors to consider, like power differences, time and place, and so on. Dainton and Zelley recalled the theory about Message design logics (See Table 10). Individual ideas about what and how to communicate are an important factor in communication. A person may have a stricter idea about appropriate behavior than his or her communication partner. Therefore it is important to know how the communication partner is likely to interpret things so as not to do something that will cause a problem. Should communication be similar to or different from previous communication? Dainton and Zelley maintained that this is one of the core questions in most communication theories. Patterns of communication may be symmetrical or complementary; people are more likely to collaborate during times of high uncertainty; behaving more like the other person can lead to attraction while the opposite also is true.

Dainton and Zelley's general advice about communication competence is that one ought to consider the communication partners' orientation to communication, i.e. to achieve one's own goal one needs to take others' goals into consideration. Dainton and Zelley (2005:222) have found twelve “variables as consistent explanation of things that influence or are affected by the communication process”:

1. **Connection**; how well individuals are connected to each other.
2. **Context**; communication is understood in a context.
3. **Expectations**; to be aware of one's own expectations and also have an idea about others' expectations can enhance interactional satisfaction.
4. **Face and Self-other**; the importance of understanding and sustaining an individual's desired image.
5. **Individual qualities**; it is important to tailor one's own communication to match the qualities of others.
6. **Interest and involvement**; to be persuaded one need to be interested in the issue at hand, and one cannot presume that interactional partners share one's interest.
7. **Needs**; one is supposed to be able to recognize and meet the communication partners' need.
8. **Power and control**; it is important to recognize both formal and informal power.
9. *Relationship*; diverse relationship call for different types of communication.
10. *Rewards*; remember that people in general ask “what's in it for me?”
11. *Uncertainty*; to reduce uncertainty and uncertainty can drive a person to send a message or seek a specific message.
12. *Values and beliefs*; it is important to consider one's own values or beliefs to be a competent communicator.

Spitzberg and Cupach (1984; 1989) discussed communication competence based on three elements, motivation, the reasons or intentions for doing things, and knowing how to act. Knowing how to act may be enhanced by studying communication theory, and through this becoming more skilled calls for practice. Some communication situations will be distinguished by misunderstandings, maybe leading to poor decisions or hurt feelings. Sometimes we cannot understand each other, or express what we are thinking or feeling. To be able to communicate competently is becoming more and more important. Today's technological context offers a great variety of different media with which to communicate, besides ordinary face-to-face communication, and demands knowledge and understanding about advantages and disadvantages when using different ways to communicate.

Spitzberg (1994) gave an overview of the central issues of competence in everyday communication. What we normatively take to be competent communication often is not, and vice versa. The importance of competence is discussed starting with two questions (Spitzberg 1994:26): “How incompetent are we?” and “What are the consequences of our incompetence?” The first question is hard to answer, according to Spitzberg, because the answer depends on how competence is gauged, and it also depends on the audience judging what we are doing. Spitzberg referred to several studies that showed that “incompetence is most common and that our relationships with others are rife with informational errors, both innocent and intentional” (p. 27). Spitzberg listed these informational errors, in agreement with other researchers: Actors frequently experience uncertainty, they second guess, withhold information, misinterpret, intentionally miscommunicate, deceive, are suspicious and have problems communicating certain subjects.

It is therefore not surprising that in interpersonal communication the accuracy is no more than 25 % to 50 % in interpreting the behavior of the other partner (Spitzberg 1994). Spitzberg has also found, reviewing research in this area, that messages and situations reflect and produce conflict, violence, sexual aggression, sexual harassment, communicative aggression, guilt, defensiveness, complaints, degradation, insults, predicaments, conversational abandonment, betrayal, hassles, infidelity, narcissism and regrettable messages. To summarize
the answer to the first question, “How incompetent are we?” it is reasonable to assume that now and then we are incompetent while communicating in everyday life.

Research answering the second question “What are the consequences of our incompetence?” is distinguished by disagreements, according to Spitzberg. Some studies, though, have for example revealed: “[…] that regardless of the number of positive interactions one has, it is the negative or problematic interactions that seem to determine well-being.” (Spitzberg 1994:28), and that it is vital for one's well being to be able to successfully accomplish and manage relationships.

Spitzberg further discussed where the competence is presumed to reside. Researchers have historically located competence in three different locations. The first is ability, meaning that an individual possesses the ability to accomplish preferred outcomes in interpersonal interaction, and these skills are often cross-contextual. The second location is inference, a subject phenomenon located in the mind of the interpreter, according to Spitzberg. The third location is the social unit involving more than one person where competence in making judgment or being judged is important. It is important for research in this tradition to identify the mutual, relational sources of the communicating individuals and also to identify factors influencing these sources.

One implicit assumption in this thesis is that people in general are interested in understanding their own communication behavior to become more successful communicators in organizational contexts. Our communication styles will differ from time to time, situation-to-situation, relation-to-relation and context-to-context but also depending on our own personal goals, feelings and thoughts. Thoughts, feelings and interpretations about a certain occurrence will alter because they influence each other reciprocally and might result in an active or passive act that could be effected by feelings that are not appropriate in an organizational context, but are a part of being human (Sjöqvist 2005).

Besides communicating through body language and words the social situation will influence feelings. Burleson and Planalp (2000) have shown that depending on our audience our emotional record will be different because we have learnt to adapt. They claimed that emotion is a major part of the content of messages because (p. 221): ”(a) Emotions and moods are important influences on cognitive processes underlying message production, (b) emotion is expressed as the content of the messages and (c) emotion knowledge is used to manage emotional state of others.” What kind of emotional expressions that are appropriate depend on cultural norms. Of course, people may also express feelings in order to manipulate others to control the situation to reach personal goals. Or people might act “inappropriately” because of feelings of envy, jeal-
ousy, anger, disregard, or just because they feel insecure. It is important to realize that this can be rather common also in organizational communication and that it might cause the communication to be minimized or maybe sometimes maximized (See Table 12).

Research has shown that our emotions influence the way we apprehend an electronic message and also how we express ourselves when writing a message (Cunningham 1988; Lindsey 1996). It is possible to transfer feelings in e-mail communication but this is done only with words. Our moods are also important because they influence our choice of words and also the scope of the message and how personal our messages are (Motley & Camden 1995; Forgas 1995).

3.4.9 One model of interpersonal competence

Trenholm and Jensen's (2004:10) definition of communicative competence corresponds to Spitzberg and Dillard's discussion about social skills and quality: “Communicative competence is the ability to communicate in a personally effective and socially appropriate way.” There are many different models describing communication competence, some of them focusing on the process, others on the performance. Process competence is found on a deeper level consisting of cognitive activity and knowledge necessary to adequate communicative performance. Performative competence is possible to observe in daily activities. Trenholm and Jensen (2004:11) thought that there are five important things that a person must be capable of handling to be a competent communicator: (1) Interpretative competence, (2) goal competence, (3) role competence, (4) self competence and (5) message competence.

To be a competent communicator we need to have all five competences because they are interconnected. If not, our messages will be unclear and influence our relationships in negative directions. Communicative competence is a complex process with a blend of many interrelated processes (See Figure 5, p. 82). Even though we are fulfilling the demands of all five competences we may not communicate adequately. A number of factors may cause problems (Trenholm & Jensen 2004:17): “[…] individual physical states such as fatigue or anxiety; contradictory attitudes, beliefs, and values; poor motivation; and sheer stubbornness. Finally, lack of practice can cause a performance to come off as stilted and artificial.”

In Trenholm and Jensen's model of human interaction the internal process competence is the entrance to human interaction. Interpretative competence assigns meanings to the world around. In this process it is important to understand how “[…] to label, organize, and interpret the conditions surrounding an interaction” (Trenholm & Jensen 2004:13).
The second competence in Trenholm and Jensen's list is goal competence, to set goals strategically and to be able to see the results of communication in advance. Goal competence is the process of knowing what to achieve and plan for it, choosing effective lines of actions. If someone lacks goal competence, problems will arise because we do not know how to approach others. When getting others' attention we do not know how to act because we have no idea about how other people imagine the world according to Trenholm and Jensen.

The third competence is role competence; to take on social roles appropriately by adapting what behavior is appropriate and also to have an idea about the expectations of others. As communication is a cooperative action we are always acting in some kind of role. It is important in different situations to be capable of recognizing what behavior is appropriate, and knowing how to react when conflicts arise. It is also important to maintain our own social identities at the same time as we protect the identities of other, Trenholm and Jensen stated.

The fourth competence is self-competence; present a valued image of us to the world by developing our own individual style based on our sense of self. One of the most important aspects in communication is to develop an individual and personal communication style, a healthy self-concept, according to Trenholm and Jensen. Together with a high self-esteem this will help us in many situations demanding an adequate communicative behavior.
The fifth competence is *message competence*; “[… ] the ability to make message choices that others can comprehend as well as respond to the message choices of others” (Trenholm & Jensen 2004:12). In this process it is important that we have a competence that helps us to express feelings and thoughts in both a verbal and a non-verbal manner. Trenholm and Jensen (2004:13) emphasized the importance of relational competence, because a message may have a content consisting of ideas or feelings, but it may also have a relational meaning revealed in how something is said: “[… ] relational competence consists of the ability to process and create messages that convey the type of relationship assumed or desired by a communicator at a given moment.” It is important to emphasize that communication always is going on in specific historical, cultural, and relational contexts, and: “People communicate as they do not only because of individual abilities, experiences, and personalities, but also because they live in a certain place and in a certain time.” (Trenholm & Jensen 2004:15).

### 3.5 Summary of Chapter 3

There is no consensus among scientists and practitioners about e-mail's disadvantages and advantages. New technology usually has effects on two levels, the efficiency level and the social system level (Sproull & Kiessler 1991). This thesis is concerned with effects on the social system level. Some e-mail features as well as some behavior might cause negative effects. Sometimes it is e-mail features that encourage a behavior that has a negative impact, and sometimes the same features help the individual to solve a certain task or compensate for a personal communication problem of different kind. According to Taylor (2001) some of the reasons that e-mails can overload systems, damage reputations, hurt feelings and waste time, are the familiarity and convenience of e-mail.

It is important though, that we as human beings may choose how to act and therefore the technological imperative is not a base for this study. E-mail is defined as a serial-killer application (Ducheneaut & Bellotti 2001), which shows its impact on communication in organizations. As users it is important to realize that e-mail messages might have both intentional as well as unintentional consequences on organizational behavior (O’Kane & Hargie 2007). E-mail is sometimes called the medium of miscommunication because pure text-based messages tend to give large room for interpretation of what the sender actually is trying to communicate (Kruger et al 2005).

There are different theories of media choice: (1) Social presence theory (Short et al 1976), (2) Information richness theory (Daft & Lengel 1984; Daft et al 1987), (3) Social influence theory (Lea 1992; Ngwenyama & Lee 1997;
Rowe & Struck 1999; Panteli 2002), and the theory of media synchronicity (Dennis & Valacich 1999), (4) Theory of media naturalness (Kock 2005) and (5) Critical mass theory (Markus 1987). The social presence theory emphasizes the psychological aspects of using different communication media and deals with the extent to which a medium is perceived to convey the presence of the communicating partners in a specific context. The media richness theory focuses on the capacity for carrying information in different media and proponents of this theory state that face-to-face is the richest media whereas e-mail has moderate media richness but later research has found that e-mail might be a rather rich medium. Social influence theory emphasizes the important of the context in order to understand a message and that people use CMC in order to reach their goal within this context and thereby successfully will overcome any drawbacks of a medium. The theory of naturalness is emanating from Darwin's theory of evolution highlighting three dependent constructs: (1) Cognitive effort, (2) communication ambiguity and (3) physical arousal. The basic idea behind the critical mass theory is that the value of a communication system is dependent on the number of users, the more users the higher the value.

Part 3 in Chapter 3 is a review of some relevant research findings in the area of information overload and attention. To a certain level more information helps us to increase decision accuracy, but when we get too much information the result will be that we become confused, have problems prioritizing and forgetting earlier information (Schroder et al 1967). There are different causes for information overload (Eppler & Mengis 2003): (1) Information characteristics, (2) personal factors, (3) task and process parameters, (4) organizational design and (5) information technology. Because the causes of information overload are manifold there is not one solution for how to find countermeasures but several. Competition for attention (Davenport & Beck 2001) is a well-known problem in most organizations and this competition can be one of the reasons why it is hard to get the expected reactions when sending e-mails. When discussing attention deficiency in an organization it is essential to consider all kinds of information flows, and not only a medium like e-mail.

The last part in Chapter 3 highlights the importance of organizational communication, and discusses the differences between the transmission approach (Shannon & Weavers 1948; 1949) and the sensemaking approach (Dervin 1983; Weick 1969) to communication. This thesis proceeds from the idea that everyday communication is not only a matter of a simple transfer of facts since organizational information flows also are a part of individual sensemaking processes. It is possible to study organizational communication on different levels like interpersonal level, group and all higher levels.
Communication competence is critical in all organizations since it is the communication that constitutes the organizations (Weick 1969). Interpersonal communication is distinguished by several characteristics: (1) Communication is about interchange where different actors play various roles, (2) it is transactional by nature, meaning that if one element in the communication process changes, all other elements may change and (3) all human communication has an impact on someone (Burgoon et al 1994). Intrapersonal communication i.e. the internal communication where the individual plays all the roles in the communication process also plays an essential part in interpersonal communication (O'Keefe 1988). Communication competence might be studied from two angles, process and outcome (Spitzberg & Dillard 2001). Communicative competence has more to do with adequate behavior in a certain context or process and not the actual outcome. The degree of effectiveness and appropriateness is a matter of quality in social processes. One model of communication competence is discussed (Trenholm & Jensen 2004). In this model there are five different competencies identified, all important for a successful communicator: (1) Interpretative competence, (2) goal competence, (3) role competence, (4) self competence and (5) message competence.
4 Entering the field

In Chapter 4 the results from the empirical studies will be discussed. As Table 2 shows empirical data were collected in several steps using different methods: Interviews, focus groups, a web survey, Internet searches and e-mail lists. The findings are described under five headlines: Pre-study, Study 1, Study 2, Study 3 and Study 4.

4.1 Findings of the Pre-study

The aim of the Pre-study was to find out when e-mail is appropriate or inappropriate to use in an organizational setting from a management perspective and to find concrete examples of e-mail messages that were considered inappropriate (Sjöqvist 2005). The result of the Pre-study highlighted four areas where e-mail is supposed, in general, to be used with caution, but few concrete examples of e-mails were found that caused problems in the organizations.

The primary idea was to get a number of concrete examples of inappropriate use of e-mail, however, during the interviews, it was hard to get such specific examples. The respondents answered in general terms, and a typical answer was that e-mail was avoided when the message was sensitive, dealt with proprietary or strategic information, or included information that demanded privacy. What do these situations have in common? The answer is that all of these situations relate either to critical working conditions, strategic or proprietary information, or to ethical issues regarding employment. The gist of such communications may be either negative or positive and this is affected by the content of the e-mail. Another answer was that it is wise to avoid e-mail when one needs to know the other person's reaction so one can respond directly to it. If one knows that one may have a problem understanding the recipient's reaction, it would be better to use ways other than e-mail to communicate. It is, of course, possible to use e-mail quite consciously to tell somebody something
that one knows is sensitive if one is prepared to accept any negative consequences.

After analyzing the empirical and the literature findings in the Pre-study (Sjöqvist 2005), a list of subjects and situations in which e-mail might be avoided was made (Zaviona 2003; Mallon & Oppenhaim 2002; Carr 1998; Bälter 1998; Danielson 1996; Lamb & Peck 1995; Steinfeld 1995; Daft et al 1987). E-mail may usually not be sent when the message belongs under one of these headings:

**Strategic questions**, for example: Threats of dismissal, reorganizations, acquisitions and negotiations.

**Human resource issues**, for example: Relocations, dismissals, salary negotiations, confidential decisions, disciplinary issues, warnings that can be considered bullying, personal questions and changing circumstances and actions of a personal nature.

**The character of the information**, for example: Decisions or information that can easily be questioned, issues that can be interpreted as vague, abstract, or unclear, very important information, information with a threatening content and hard to read or very extensive information.

**In certain situations**, for example: Conflict management, to respond to something irritating, to respond to an e-mail when the recipient is upset, if a quick response or action is needed, if a dialog are supposed to lead to consensus and when control of the recipients' reactions is important.

Not including the items under the third heading, the character of the information, the central answer to the question about what not to use e-mail for, was as follows: Everything that concerns individuals' integrity and existence in a critical manner. To understand what affects people's integrity and existence requires a deep understanding of the recipient. The choice of medium must also suit the recipient. Questions that concern people's integrity and existence can be both personal and strategic, if they affect the individual in a major way.

Which consequences might be expected if the wrong communication medium is chosen? The respondents had problems finding any examples of e-mail messages that had caused problems within their organizations. Of course, some e-mail did cause irritation and some of the respondents pointed out that they got a different reaction than the one they expected, but they commented that this could also happen if they chose another channel of communication. Another answer was that sometimes the e-mail sender gets rapid feedback, realizes there has been a misunderstanding, and can ameliorate the situation before it escalates. In cases where feedback is not forthcoming, misunderstandings may fester and cause additional problems. However, some examples were found in the Pre-study that disclosed some negative consequences of e-mail. In one case, a
manager had to leave the company because of an e-mail that violated internal company policy. In other cases, e-mail caused long and unfruitful discussions among employees.

4.2 Findings of Study 1 – Examples of e-mail that have caused problems

The aim of Study 1 was to find examples of e-mail that in some respect had caused trouble for the sender or the recipient. Reaching the goal was not a problem although some examples did not have anything to do with e-mail in a working context. These non-working examples were anyway included because they could maybe contribute to explain why some e-mail is considered unsuitable.

The examples are categorized into seven different groups. Under each group there are a number of examples that will illustrate e-mails that have caused problems in some respect, ranking from perceived annoyance to dismissal. Each example is depicted in one or a couple of sentences due to considerations of space which may not give the reader a substantial idea about each case.

1. Forwarding e-mail

1.1. The CEO of a company sent message to two of his closest subordinates, who forwarded it to a broader public. The content of the message became published on an international web page. This resulted in questions about the corporate leadership by a financial analyst and the corporation’s share price went down by 25 % (Zavoina 2003).

1.2. One employee asked his manager a question and then sent the response to the entire organization. Since responding to e-mail is often simple it may not seem to require a high level of linguistic correctness, according to the respondent. The problem was that the answer was not written with the same precision as general information intended for the entire organization (respondent).

1.3. The sender sent message to correct addressee who in his turn forwarded sensitive and private information (respondent).

1.4. The respondent received a forwarded e-mail that was not intended for her eyes (respondent).

1.5. The sender sent message containing inappropriate contents to the correct recipients on the internal mailing list. Somebody forwarded it, and the content of the message become public to the customers (Sjöö 2004).

1.6. Forwarded e-mail contained message from the original sender. The end-recipient reacted negatively to the content (respondent).
2. Wrong recipient
2.1. E-mail was sent to the wrong addressee (Zaviona 2003; respondent).
2.2. E-mail that was intended for one recipient was sent to everyone in the address book/internal mailings list (Luhn 2002; Mikkelson & David 2003).
2.3. A report was sent by e-mail to the opposite party disclosing arguments (respondent).
2.4. A personal e-mail was sent to a client who reacted negatively to the content (Hershkowitz-Coore 2005).

3. Language issues
3.1. Even though the sender tries to be as clear as possible, the recipient does not interpret it as intended, creating a series of new messages intended to clarify (respondent).
3.2. A business contact always used capital letters, and this was understood as a sign of anger by the recipient (respondent).
3.3. One e-mail was ended: “DON’T WRITE BACK!” – and the recipient felt that any possibility of true communication ceased (respondent).
3.4. Abbreviations in e-mail may confuse addressee (respondent).
3.5. To be formal or informal or to be structured or not is a problem in e-mail communication (respondent).
3.6. Are sloppy messages the same as showing no respect (respondent)?
3.7. Being too formal, is it the same as being too strict, heartless or impersonal (respondent)?

4. The character of the information
4A. Too little information
4A.1. Getting a newsletter without declaration of contents might cause irritation (respondent).
4A.2. A very short message without any explanations: “Damn it!!!!” might leave the recipient confused and create a need for going back into earlier e-mail correspondence to find out what the short message is a response to (respondent).
4A.3. If a sender mentions some type of problem that is not specific enough it is hard to give a relevant response (respondent).
4A.4. A job application sent from anywhere in the world with nothing that prevents you from believing that thousands or more people have received the same application is uninteresting (respondent).
4A.5. Electronic answers to announced positions that are not edited as required in the announcement might not be considered (respondent).
4A.6. E-mail was sent that wage negotiations were delayed, but the new human resource manager gave no reason for why this was the case. This was the first e-mail sent by her to the entire staff (respondent).
4A.7. Information about upcoming meetings of silly kinds where it is not at all clear if your presence is truly desired by the organizer may be useless (respondent).
4A.8. Who else has got this e-mail and what am I suppose to do about it (respondent)?

4B. Too much information
4B.1 Attachment of large files, which content could be summarized in one or two sentences, wastes time (respondent).
4B.2. “Some emails that I receive with big attachments are legitimate and useful […] but most of this campaign stuff would be better posted on a website […]” (respondent).
4B.3. “When I was working on a joint European project proposal recently, I got such a huge amount of e-mail with different versions of the proposal” (respondent).
4B.4. UK small businesses are in danger of their e-mail systems collapsing as employees on summer breaks send and receive holiday photographs and even videos as large e-mail attachments (Internet Business News 2005).

4C. Format issues
4C.1. Messages that require HTML can be misunderstood (respondent).
4C.2. Sender should always be held responsible for knowing what file formats are standard or agreed to be accepted by the recipient (respondent).

5. Work place conditions
5.1. CEO sent e-mail on internal mailing list about freezing salaries (respondent).
5.2. Municipality informed an employee by e-mail that she was fired after 30 years of employment (Wångersjö 2005).
5.3. Football player was fired by e-mail without explanation (Svensson 2004).
5.4. In a decentralized organization a human resources manager distributed a message about personnel rules that were not applicable throughout the organization (respondent).
5.5. The combination of heavy workload and demanding e-mails might cause stress (Dahlström 2002).
5.6. An e-mail survey was sent asking the employees whether to prolong the temporary employment of a manager (respondent).
5.7. Reprimand was sent telling employees that they had not acquainted themselves with the contents of an information site for a whole week (respondent).

6. Offending behavior

6.1. “Don't invite N.N because he is a drunkard” (respondent)
6.2. Fired because of inappropriate and unprofessional comments (Bergel 1997).
6.3. Discussion over e-mail between legal secretaries over the whereabouts of the makings of a ham sandwich led to both being fired – a case of flaming (McIlveen & Mark 2005).
6.5. Pretending to be somebody else, and using someone else's account, to send e-mail (Hines 2004).
6.7. Manager at a state government sent e-mail inviting to “celebrate” refusal of entry of an alien (Brattnberg & Holender 2005).
6.8. “There is some uncertainty that need to be cleared up immediately; absolutely Monday pm I need a written report of the following questions” (e-mail received late Friday pm) (respondent).
6.9. Telling someone to consider his behavior not to offend somebody else (respondent).

7. Topic related issues

7.1. Racism in policeman's e-mail to politician became the subject of internal investigation (Olsson 2005).
7.2. Prosecutor got lots of racist e-mail and other correspondence through the public prosecution of the policeman who was found not guilty in the court of first instance (Palmkvist 2005).
7.3. Employee of South Korean firm got fired after his e-mail bragging to his friends about his sexual exploits was made public (Sorkin 2001).
7.4. Employee at a university in Sweden had been working on private pornpictures on one of the students' computer. One student found them and forwarded them to classmates (Kallenberg 2005).
7.5. Washington State Department of Labor and Industries fired six employees for sending e-mail that contained references to vulgar sex acts and illegal drug abuse (Olsen 2002).
7.6. What where the employees at a subsidiary of Chevron Corporation thinking when they e-mailed the infamous “25 Ways in Which a Beer is Better than a Woman” joke that led to a $2.2 million sexual-harassment settlement (Hershkowitz-Coore 2005)?
4.3 Findings of Study 2 – Results of focus groups and administrative personnel replying to the web survey

The participants in the two focus groups agreed that e-mail was an important working tool, maybe the most important one. Advantages mentioned were speed, that documents can be attached and that contents of e-mail may be used as a basis for discussions and decisions. Using the telephone might be more time consuming because there is a tendency to also talk about other matters according to the participants. There are of course a lot of matters that might be solved in a more efficient way using the telephone. E-mail is also a good choice if one knows that the person one needs to contact is too talkative, because e-mail gives the talkative person less of an opportunity to waste time in an e-mail dialogue than during a telephone call. That e-mail and telephone communications direct the work in a similar fashion, demanding immediate follow up and action, was established in the focus groups. Both e-mail and the telephone have a tendency to split the work into small segments. Somebody commented that “E-mail gives the working tasks” which implies that e-mail generates what to do, and e-mail controlled this person's working days to a large extent. This participant also felt being a “serf” but added that this feeling may have something to do with the work itself.

In general the administrative staffs in the educational departments got a lot of e-mail as middlemen among many different interest groups, like students, teachers and other administrators. Each interest group may be divided into subgroups, for example students: (1) Presumptive students, (2) registered students and (3) former students. The number of possible e-mail senders increases all the time because new students attend courses and the old ones will still turn up now and then to get help. The more possible senders, the more e-mail was one reflection made.

It is common to get e-mails with questions where to find information. More and more, people have a tendency not to try to find the information needed but to send a quick note asking for information that they could find themselves, according to the participants. This kind of e-mail is hard not to respond to, although it is a bad strategy in the long run, because administrative staff is regarded as a service function both by the surrounding actors and by themselves. It is hard to put limitations on what to react to or not. Students are asked to save documents continuously like course syllabuses, but they do not always respond to this request. Finding the correct information later could be a problem and then the students turn to the administrative staff for help. Course content changes and so do the syllabus and it will probably take some time to find the correct information.
The administrative staff that replied to the web survey considered e-mail as an important working tool. It has become easier to get and send information, get in touch with other people and piles of documents have decreased. E-mail makes communication more effective and agreements less indistinct, commented one respondent, also stating that e-mail has contributed thousands of good things. The average number of incoming e-mails for this group was 13 per day, compared to 25 among the participants in the focus groups. One respondent was excluded from the former group because of an extreme value (100 e-mails per day), because this number differed too much from the next highest value (45) and 8 respondents got less than 10 e-mails per day.

Too much e-mail was the largest problem among the participants in the focus groups. It is not always easy to decide what is important or not according to the participants. Prioritizing incoming e-mail was handled differently among the participants. Some printed out the e-mails and sorted them depending on content and perceived degree of urgency. Angry e-mail was prioritized because they usually generated more work if not being taken care of directly. Sender and subject were also important, meaning that some senders were prioritized and the subject lines conveyed if certain e-mail was important or not. Those e-mails that were considered urgent always got attention. E-mails from a person were prioritized before e-mails sent from functional addresses.

That e-mail is associated with stress was explicitly conveyed and a common feeling among the participants was: “Do I dare open the e-mail program?” The participants highlighted the problem of being absent since they all knew that a lot of e-mails would be waiting in their inboxes on their return. A majority of the participants did check their e-mail from their home computer before they came back after an absence to get rid of some of the e-mail stress on the first day of work. Some of the participants also checked their inbox to solve urgent requests from home even if they were on leave of absence.

Why everything has to be done in a hurry today was one question that was raised in one focus group. “If everything is done in a hurry there is a risk that we make more mistakes because we do not have the time to reflect. If everything is expected to be done faster, most people get stressed”, was one comment made. Doing things faster sometimes agrees badly with the demands for quality. “If you do not answer an e-mail, people call instead”, one participant declared. Is it possible to reply that you cannot answer all e-mails in a hurry but will return to the sender as soon as possible? Who is responsible for the prioritizing? How is it possible to minimize the function of being a middleman in e-mail correspondence when being a coordinator? This feeling of hurry was also commented on among the respondents in the web survey. One respondent stated: “Sometimes it feels like I am rushing about without any control.”
E-mail was, though, not associated with stress for the majority of the administrative personnel who replied to the web survey (62%). Only 32% often or sometimes felt stressed because of too many e-mails waiting in the inbox when they arrived to work, or because they had the feeling that everything was supposed to be handled immediately (6% did not answer this question). Expectations of fast feedback were another problem mentioned. One respondent said that because the company had a policy of answering all customers within 24 hours, feelings of stress would sometimes appear. Somebody made another reflection: “Sometimes it feels like a dialogue never ends because it is an e-mail discussion. One thinks that the dialogue is ended, when suddenly the other person answers the e-mail again.”

If e-mail is supposed to control life to such a large extent, the following reflection was made: The problem, according to the participants, was that they in turn wanted fast feedback on e-mail they sent and therefore expected that this was the same with those who sent e-mail to them. Another problem is that when the workload is high the e-mail controls more than when the workload is more moderate. One respondent said that sometimes she wanted to be controlled because of a lack of energy to prioritize, and then it was convenient to let other people’s e-mail direct what was going to be done. Our inherent curiosity is also a deep human phenomenon that sometimes makes it hard for us not to check out certain messages.

One question that was raised was if it would be possible to reduce the number of incoming e-messages by meeting the expected need of information in advance and thereby take control of the situation. Sometimes it is possible, was the answer, but usually it is not a good idea to try to inform before all details are settled. Trying to meet a need for information in advance often increases the e-mail traffic instead of decreasing it according to the participants.

Among the administrative personnel who replied to the web survey only 6% thought that e-mail directed their work negatively. 19% had a mixed view concerning if e-mail directed work positively or negatively. E-mail is just looked on as a working tool among others, and of course it directs work because many different work tasks are sent by e-mail. Some other questions were raised that did not have any obvious answers:

- When is it appropriate to send a message expressing just “Thanks!”
- Are we always forced to open an e-mail or is it sometimes correct not to?
- Are we supposed to do anything or is it just information in general?
- If certain e-mails were forwarded would it be a good rule to insert some explanation why it is sent forward?
- Is the information in an e-mail is reliable, if it comes from someone who is not considered an adequate source?
Besides getting a general idea about e-mail in a specific profession, administrative staff, the purpose was also to question if the participants in both groups had sent e-mail they had regretted or if they had got e-mails that had upset them. In neither case was this seen as a problem, although sometimes e-mail was sent in a hurry without sufficient consideration. The participants seldom got e-mail that in some way upset them.

### 4.4 Findings of Study 3 – Results of managers and teachers replying to the web survey

The questions in the web survey were open-ended except for the first few questions that asked for background information about occupation, age, sex, numbers of received and sent e-mail and average time to manage e-mail. The open-ended questions, 9 questions altogether, were deliberately broad and it was up to the respondent to make associations when answering. Some of the questions had a close similarity like the following three questions:

- Do you think e-mail controls your work? If it controls it, in which way and what consequences does it have?
- Do you think e-mail creates feelings of stress and if so what factors create the stress?
- Do you sometimes consider e-mail a problem? Try and describe when and why if you do.

The review of the answers shows that some respondents made the same associations when answering the different questions, but the vast majority mostly found different angles. The idea behind having three questions that are rather close in their inward sense was to capture a broad range of subjects that may be a cause of e-mail miscommunication and associated problems.

The questions: “What do you use e-mail for in your work?” and “When do you think e-mail is helpful in your work?” are two different kinds of questions. If e-mail is used for performing a task it is not certain that e-mail is the best way to perform it, but using e-mail may have become conventional and therefore not called into question.

#### 4.4.1 Background data of respondents

Two thirds of the respondents were male and one third was female. Gender and age distribution shows a rather similar dispersion according to age (Age distribution see Diagram 1. The high level of education, 70 respondents have university/college education, 22 have senior high school education and 4 have ele-
mentary school education (3 were blank), is not surprising since the respondents represent managers and teachers.

![Diagram 1: Age distribution all respondents in Study 3.](image)

The first question on e-mail traffic was: How many e-mails do you receive on average per day? How many of those are spam? The respondents answered by giving a roughly estimated number and the higher the number the broader the estimation, for example 2-5, 10-15, 20-30 and 40-60. To get an idea about the average amount of incoming e-mail a specific number within each range had to be chosen. The example above (2-5, 10-15, 20-30 and 40-60) will give the sequence of numbers 4, 13, 25 and 50. All answers together generated a mean value of 24 incoming e-mails per day. Quartiles for how many e-mails every respondent received every day are shown in Table 13.

Spam was not a problematic issue for the respondents because 58 out of 97 did not get any spam at all, 39 respondents got between 1-5, 9 respondents got between 7-15 and one respondent got 40. Effective spam filters are probably the reason why spam was not a problem.

<table>
<thead>
<tr>
<th>Mean value</th>
<th>Minimum value</th>
<th>First quartile</th>
<th>Median value</th>
<th>Third quartile</th>
<th>Maximum value</th>
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<td>2</td>
<td>10</td>
<td>18</td>
<td>31</td>
<td>80</td>
</tr>
</tbody>
</table>

Table 13: Mean value and quartile for numbers of received e-mails for all respondents in Study 3.

The second question on e-mail traffic was: How many e-mails do you send each day? When answering this question the answers were also approximated and the same procedure was followed selecting a number within each range to use for calculations. The mean value ended up at 15 sent e-mails every day.
The quartiles for how many e-mails every respondent sent every day is found in Table 14.

<table>
<thead>
<tr>
<th>Mean value</th>
<th>Minimum value</th>
<th>First quartile</th>
<th>Median value</th>
<th>Third quartile</th>
<th>Maximum value</th>
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<tr>
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<td>2</td>
<td>6</td>
<td>11</td>
<td>20</td>
<td>60</td>
</tr>
</tbody>
</table>

Table 14: Mean value and quartiles for numbers of sent e-mails per day for all respondents in Study 3.

The question originally asked about time used to manage e-mail was: How long do you need on average each day to manage your e-mail, i.e. to determine what is important or unimportant, what can wait, what can be deleted and so on? In general the answers indicated that it is hard to know exactly how long it takes and therefore nearly all of the respondents answered the question with an approximate answer like “30-40 minutes”, “15-20 minutes” or “5-10 minutes”.

<table>
<thead>
<tr>
<th>Mean value</th>
<th>Minimum value</th>
<th>First quartile</th>
<th>Median value</th>
<th>Third quartile</th>
<th>Maximum value</th>
</tr>
</thead>
<tbody>
<tr>
<td>43</td>
<td>5</td>
<td>20</td>
<td>30</td>
<td>60</td>
<td>240</td>
</tr>
</tbody>
</table>

Table 15: Mean value and quartiles for managing e-mail, in minutes, every day for all respondents in Study 3.

Some respondents were excluded although they answered the question, because it was not possible to estimate the time used for managing e-mail, for example: “It is done during the workday”. The quartiles for how much time each respondent used every day to manage e-mail is shown in Table 15. On average the respondents used 43 minutes each workday to manage their e-mail.

4.4.2 The open-ended questions

The open-ended questions, as mentioned earlier, were deliberately broad and it was up to the respondent to make associations when answering them and they resulted in a broad variety of answers. The intention was not to collect quantitative data that would make calculation of statistical probabilities possible. Nevertheless, it was possible to categorize the answers because the respondents usually started by answering the first part of the question with “Yes…” or “No…” and then expounded on their opinions. For each question the answers by the respondents could therefore easily be categorized. If it became a problem to categorize an answer from one respondent, the choice was made always to choose the less controversial portion of the answer, so as not to create an unnecessarily negative picture of the issue in question.
The following sections will account for the respondents' answers on the open-ended questions put together, when suitable, in diagrams to get an overview, but there will also be examples of respondents' answers to get an idea of how the respondents expressed their views.

**Question 1: What do you use e-mail for in your work? / When do you think e-mail is helpful in your work?**

Among the open-ended questions in the web survey two questions aimed at catching the respondents' ideas about what they use e-mail for in their work. Maybe because of the way the question was formulated “What do you use e-mail for in your work?” many gave the self-evident answer that they use e-mail for “communication and information” without any details (19 respondents). Others found that e-mail was important to maintain contact and dialogue with different groups of external, interested parties, for example suppliers and customers (19 respondents). Four of these 19 respondents stressed the importance of e-mail to establish and maintain international contacts. 33 respondents used e-mail mainly for internal communication. The remaining respondents used the word information instead of communication to explain what they used e-mail for. The distinction between information and communication is probably a bit unclear in the minds of most people and the words are used more or less as synonyms.

A typical task where e-mail has some advantages that were mentioned was the possibility of attaching files. One distinct situation where access to the same files could be important was when having a telephone meeting (7 respondents). One respondent explained: “To send a picture or a document through e-mail when you are discussing something by telephone makes it easier for the person you talk to, to understand what you are trying to communicate.” To be able to send fast and short messages, to individuals or groups, was another important possibility, mentioned by 22 respondents. One respondent thought that:

> To be able to send information in a hurry to a group or a person is very anti-stressful, because when I have sent a message I know that the recipients have access to information although those concerned are not online at the moment. Then I am able to relax, which is not possible if I keep on trying to reach a person on the telephone without success.

This is one example that shows that e-mail has replaced telephone and fax, and is also regarded as a complement to mobile telephone/SMS (8 respondents). Using e-mail when it is hard to reach someone on the telephone was another advantage mentioned by 8 respondents. Some respondents considered e-mail as a tool suitable for non-time-critical errands and others thought e-mail was suit-
able for less important issues. Others thought that e-mail gave flexibility and freedom because of the possibility to be accessible “day and night”, to be able to keep in touch without meeting in person, and that e-mail saved a lot of walking around trying to get in touch with people that sometimes were hard to find. Planning and scheduling meetings were another positive possibility.

Five respondents mentioned that if a written document was needed, e-mail was a perfect medium that creates the opportunity to keep track of what has been discussed. One respondent explained: “E-mail is important because you have evidence of what has been discussed. It is also important to have evidence that you have reached an agreement or that you have explained an order or statement of account”. E-mail may also be used to support one's memory because it is easy to check earlier messages, send reminders to one's own mailbox etc. One respondent explained:

E-mail is an excellent support to back up your memory. It is possible to follow up the communication afterwards. When did it happen? Who got the information? Who said what, and what was decided? Sometimes it is hard to remember things like this, especially if time has passed since decision and follow-up.

E-mail is also considered to save time (8 respondents). One respondent said that e-mail is always useful and if e-mail was not a reality, the need to find a way to exchange digital information would force us to find a medium of some kind to help us in this matter. This medium would probably be very similar to what we already have access to, i.e. e-mail. The same respondent reflected that he has had access to e-mail through his entire work life and he has problems imagining how organizations functioned earlier but he guessed that they worked very slowly and that fax machines were very essential. Another respondent found that if one does not have the time to make a phone call, e-mail is very time saving because one is able to do something else while waiting for an answer to an inquiry. Even if one is short of time, one respondent claimed, it is anyway possible to keep in contact through e-mail.

One special feature, discussed by 13 respondents, was the possibility of asynchronous communication. “This is of course important when I want to reach somebody working different hours than myself”, one respondent noted. Besides that, e-mail gives the recipient the opportunity to read whenever he has the time and this is a good feature especially when it comes to non-urgent information. Another respondent thought that e-mail is indispensable for performing his tasks, and that e-mail makes it possible to keep in contact with colleagues without running around looking for people working in different places.
Question 2: Do you think e-mail controls your work? If it controls it, in which way and what consequences does it have?

This question is a typical “two-question in one” that usually was answered with “Yes, but….” or “No, not at all”. Depending on the answers by the respondents, all answers were categorized on a scale: “Yes, negatively”, “Yes, positively and negatively”, “Yes positively”, “No, not at all” and “Neutral”.

Diagram 2 shows that most of the respondents thought that e-mail does not control their work at all (40 respondents), and the second most common response was that it controls work negatively (26 respondents). To be categorized into one of the four first categories “Yes, negatively”, “Yes, both positively and negatively, “Yes positively” and “No, not at all” the answer had to contain a clear point of view. Typical answers in the first category (Yes, negatively) were: “Yes it directs my work to a great extent because of the way e-mail is used today there are expectations from other colleagues to respond quickly and often.” Another respondent stated:

E-mail definitely directs my work. If you are absent from work for one day, you hardly dare open the e-mail the day after because it takes half the day to respond to all incoming e-mail. I’m sitting more in front of the computer answering e-mails than I am present in the operational work. If I decide to ignore e-mail I will be reminded about it anyway, because people tend to ask me if I have read their e-mail.

Diagram 2: Question: Do you think e-mail controls your work? All respondents in Study 3.
In the next category - Yes, both positively and negatively – those respondents who found that e-mail has both advantages and disadvantages are represented. This mixed attitude was for example put into the following words: “E-mail controls work to a certain extent and it makes for more effective work but it is also a cause of increased stress in the workplace.” Another example was: “E-mail is a very useful tool because I get answers quickly and may choose when to distribute information and so on, but sometimes other people’s insistence on answering all e-mails is TOO hard and you get TOO much information.”

<table>
<thead>
<tr>
<th>Expectations overload</th>
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<tbody>
<tr>
<td>Expectations of being constantly updated (8 respondents).</td>
</tr>
<tr>
<td>Expectations of fast feedback (6 respondents).</td>
</tr>
<tr>
<td>E-mail gets priority (5 respondents).</td>
</tr>
<tr>
<td>Post absence backlog (2 respondents).</td>
</tr>
<tr>
<td>Expectations of always being online/accessible (2 respondents).</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Information overload</th>
</tr>
</thead>
<tbody>
<tr>
<td>Too many incoming e-mails (4 respondents).</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Other causes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Split respondents’ time (10 respondents).</td>
</tr>
<tr>
<td>Decreased personal contact (2 respondents).</td>
</tr>
</tbody>
</table>

Table 16: Causes for negative control of work according to respondents in Study 3.

All in all 34 respondents – those in category “Yes, negatively” and “Yes, both negatively and positively” – out of 97 reported that there are several problems with the use of e-mail in their workplace. Their comments reveal different thoughts about what is the main reason why e-mail controls their work negatively, and these ideas are summarized in Table 16. Only those comments that were mentioned by more than one respondent are found in the table.

**Question 3: Do you think e-mail creates feelings of stress and if so what factors create the stress?**

27 respondents verified that they often associated e-mail with stress and 39 respondents confirmed that they sometimes found e-mail to be a stress factor. Only one third of the respondents never felt that e-mail was connected to stress (See Diagram 3).

A typical answer in the category “Often” was: “It is extremely stressful. E-mail information is overwhelming. It is worst when you get a series of attached documents each one containing 10 pages of text.” Another respondent thought:

Yes I think e-mail is stressful, above all when I have a bad conscience because I have not answered or in some cases not even opened some e-mail messages. Messages have been put on the “doing-later list” and this is
stressful. E-mails that not have been taken care of will get lost somewhere in my in-box where I forget them; this also gives me a bad conscience. Many want to have fast feedback and trying to fulfill this wish breaks my own planning. If I find out too late that an e-mail has been sent delegating responsibility or an answer has not been taken care of I become frustrated or stressed.

![Diagram 3: Question: Do you think e-mail creates feelings of stress? All respondents in Study 3 (1 blank).](image)

The following answers represent the category “Sometimes”: “Yes, sometimes. There are some senders that do not understand that too much information make the recipient jaded. The most irritating are those who – in pure benevolence – over fabricate informational e-mail at all times of the day.” Another respondent stated:

E-mail creates stress to some extent. E-mail has become as direct as a phone call and therefore many messages are supposed to be answered the same day or at least within a few days. Because of this you must have the time to take care of incoming messages. This is a problem because of the heavy information load.

Approximately two thirds of the respondents often or sometimes associated e-mail with stress. Some of the reasons for the feeling of stress can be found in the quotations above. Precisely as in the question about if e-mail controls the respondents' work the answers on which factors are important in the matter of stress have been categorized in Table 17 (p. 104). Only those comments that were mentioned more than once are accounted for.
And last, here is another voice that reflected on the amount of incoming and outgoing e-mail: “Of course, I send mail myself, but nothing compared to the amount of incoming mail where the initiative is rarely mine. I feel more or less on the defensive because I am busy trying to do something about all the questions and tasks in incoming mail”.

<table>
<thead>
<tr>
<th>Expectations overload</th>
</tr>
</thead>
<tbody>
<tr>
<td>Expectations of fast feedback (19 respondents).</td>
</tr>
<tr>
<td>Post absence backlog (15 respondents).</td>
</tr>
<tr>
<td>Expectations of being constantly updated (9 respondents).</td>
</tr>
<tr>
<td>E-mail gets priority (2 respondents).</td>
</tr>
<tr>
<td>E-mail marked as urgent (2 respondents).</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Information overload</th>
</tr>
</thead>
<tbody>
<tr>
<td>Too many incoming e-mail (14 respondents).</td>
</tr>
<tr>
<td>Full/growing inbox (6 respondents).</td>
</tr>
<tr>
<td>Too much information in e-mail (4 respondents).</td>
</tr>
<tr>
<td>Too little information or hard to understand messages cause need for follow up (3 respondents).</td>
</tr>
<tr>
<td>Irrelevant information (3 respondents).</td>
</tr>
<tr>
<td>Unnecessary CC (2 respondents).</td>
</tr>
<tr>
<td>Spam (2 respondents).</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Other causes for e-mail stress</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technical problems (2 respondents).</td>
</tr>
<tr>
<td>Not knowing if the recipient will read and act (2 respondents).</td>
</tr>
<tr>
<td>Need of time that does not exist (2 respondents).</td>
</tr>
</tbody>
</table>

Table 17: Causes for e-mail stress according to respondents in Study 3.

**Question 4: Do you sometimes consider e-mail a problem? Try and describe when and why if you do.**

The next question “Do you sometimes consider e-mail as a problem?” may be a bit misleading because even the best communication tool will sometimes become a problem. The Swedish word used in the web survey was not problem but “gissel” that might be translated to the English word “scourge” a rather old-fashioned word which was demonstrated when I asked my students in a bachelor thesis course to answer the web survey as part of the methodology course – not as part of this research project – and at least 10 % did not know the meaning of the word. I am convinced that this has not been the case in this study particularly taking the age factor into consideration. Altogether, 54 respondents answered yes and 36 answered no (7 blanks; see Diagram 4).

Looking back on the second question “Do you think e-mail creates feelings of stress and if so what factors create the stress?” the result here is not surprising because two thirds of the respondents associated e-mail with stress, but did the respondent pick the same argument for why they thought e-mail was considered a problem or did they report other arguments? However, the re-
spondents extremely rarely gave the same answer to different questions. If a respondent described a similar situation when answering the two questions, he or she found another angle for each one. The following was regarded as a problem in e-mail communication (See Table 18). Only comments mentioned at least twice are listed.

Diagram 4: Question: Do you sometimes consider e-mail a problem? Comparison all respondents in Study 3 (7 blanks).

<table>
<thead>
<tr>
<th>Expectations overload</th>
</tr>
</thead>
<tbody>
<tr>
<td>Post absence backlog (10 respondents).</td>
</tr>
<tr>
<td>Expectations of fast feedback (4 respondents).</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Information overload</th>
</tr>
</thead>
<tbody>
<tr>
<td>Irrelevant information (8 respondents).</td>
</tr>
<tr>
<td>Spam (7 respondents).</td>
</tr>
<tr>
<td>Too much e-mail (4 respondents).</td>
</tr>
<tr>
<td>Too much text (4 respondents).</td>
</tr>
<tr>
<td>Growing in-box (3 respondents).</td>
</tr>
<tr>
<td>Unnecessary CC (3 respondents).</td>
</tr>
<tr>
<td>Circulating and repeating communication (2 respondents).</td>
</tr>
<tr>
<td>Attached files too large (2 respondents).</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Other reasons</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time-consuming (4 respondents).</td>
</tr>
<tr>
<td>Unpleasant e-mail/angry e-mail (2 respondent).</td>
</tr>
<tr>
<td>E-mail traffic takes control over individual (2 respondents).</td>
</tr>
</tbody>
</table>

Table 18: Reasons for why e-mail might be considered a problem according to respondents in Study 3.
Question 5: If you look back in time how do you think e-mail has affected work? / Do you have any other opinions you want to share?

The answers to these questions are reported together because the respondents' answers tended to comment on e-mail in general in the same way when answering both questions. When we look at the answers to these questions the overall picture appears somewhat ambiguous. 40 respondents thought that progress is entirely positive, 17 respondents considered it negative and 34 respondents saw both disadvantages and advantages in the use of e-mail (See Diagram 5).

Since this thesis is trying to figure out whether, and if so why, e-mail might affect organizational communication negatively, it is interesting to compare the respondents' comments regarding the last questions to their answers to the specific questions asked earlier. Without doubt stress is a rather problematic issue, since 20 respondents in this retrospective question mentioned it. But in what way did the respondents associate e-mail with stress?

One reason for a more stressful workday is that the demands of accessibility have increased strikingly which is experienced as stressful. More information is sent today, and it is impossible to keep track of the content of it all. One respondent discussed how to find a balance between the explicit and implicit demands from others and one's own need of time to reflect, something that is important. Work has also become more of a solitary activity because workers are spending more and more time in front of the computer. One respondent said:
E-mail has a tendency to take over other and more important work tasks and it is not that easy to learn to prioritize. Learning how to prioritize is an exhortation that one often hears, but it is easier to say than to do. The working task is anyway still there.

Another problem is some peoples' inner need for checking incoming e-mail several times a day interrupting other work tasks. Thereby attention gets split and the feeling of stress might increase. 19 respondents commented that they have lost and missed the personal contact that adds zest during workdays. Somebody asked if computers increase or decrease interpersonal communication, observing the development in her department where people choose to send e-mails to colleagues sitting next door. E-mail use has, in other words, a tendency to take over face-to-face conversation. Reflections made by one respondent:

I think that e-mail has affected working life both positively and negatively. I do not know if this computerized world will increase interpersonal communication in the long run. It makes long distance communication easier but when people are working together in the same building and mainly use e-mail to communicate I think that the efficiency has gone far beyond what is healthy.

An overview of the respondents' thoughts about e-mail's impact on working life is found in Table 19. Also in this table only those comments that more than one respondent mentioned are listed.

<table>
<thead>
<tr>
<th>Expectations overload</th>
<th>Information overload</th>
<th>Other reasons</th>
</tr>
</thead>
<tbody>
<tr>
<td>Expectations of always being online/accessible (2 respondents).</td>
<td>Too many e-mails or too much information sent by e-mail (13 respondents).</td>
<td>Decreased personal contact (19 respondents).</td>
</tr>
<tr>
<td>Expectations of fast feedback (2 respondents).</td>
<td>Circulating and repeating communication (2 respondents).</td>
<td>More sedentary work environment (7 respondents).</td>
</tr>
<tr>
<td></td>
<td></td>
<td>E-mails encourage fast decisions that might decrease decision quality (7 respondents).</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Time-consuming (2 respondents).</td>
</tr>
</tbody>
</table>

Table 19: E-mail's impact on working life according to respondents in Study 3.

Summary of question 2, 3, 4 and 5
In Table 20 (p. 108), all comments have been listed that two or more respondents gave. As already has been mentioned the respondents seldom gave the same answer when answering the questions about if e-mail controls work, if
they find e-mail stressful or a problem, and if e-mail has had an impact on work conditions. The account in Table 20 has been adjusted so that if any respondent mentioned for example too many e-mail twice it has only been counted once.

<table>
<thead>
<tr>
<th>Expectations overload</th>
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</thead>
<tbody>
<tr>
<td>Expectations of fast feedback (26 respondents).</td>
</tr>
<tr>
<td>Post absence backlog (23 respondents).</td>
</tr>
<tr>
<td>Expectations of being constantly updated (16 respondents).</td>
</tr>
<tr>
<td>E-mail gets priority (9 respondents).</td>
</tr>
<tr>
<td>Expectations of always being online/accessible (5 respondents).</td>
</tr>
<tr>
<td>E-mail marked as urgent (2 respondents).</td>
</tr>
<tr>
<td>Late information (2 respondents).</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Information overload</th>
</tr>
</thead>
<tbody>
<tr>
<td>Too many incoming e-mail/ Full/growing inbox/Too much information in e-mail (43 respondents).</td>
</tr>
<tr>
<td>Irrelevant information (11 respondents).</td>
</tr>
<tr>
<td>Spam (9 respondents).</td>
</tr>
<tr>
<td>Circulating and repeating communication (5 respondents).</td>
</tr>
<tr>
<td>Unnecessary CC (5 respondents).</td>
</tr>
<tr>
<td>Too little information or hard to understand messages cause need for follow up (3 respondents).</td>
</tr>
<tr>
<td>Reply all (2 respondents).</td>
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<table>
<thead>
<tr>
<th>Other causes</th>
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</thead>
<tbody>
<tr>
<td>Decreased personal contact (22 respondents).</td>
</tr>
<tr>
<td>Split respondents' time (10 respondents).</td>
</tr>
<tr>
<td>More sedentary work environment (9 respondents).</td>
</tr>
<tr>
<td>E-mails encourage fast decisions that might decrease quality (7 respondents).</td>
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<tr>
<td>Time-consuming (6 respondents).</td>
</tr>
<tr>
<td>E-mail takes control over individual (3 respondents).</td>
</tr>
<tr>
<td>Need of time that does not exist (2 respondents).</td>
</tr>
<tr>
<td>Dependent on computer (2 respondents).</td>
</tr>
<tr>
<td>Technical problems (2 respondents).</td>
</tr>
<tr>
<td>Will message be read? (2 respondents).</td>
</tr>
<tr>
<td>Unpleasant e-mail/angry e-mail (2 respondents).</td>
</tr>
<tr>
<td>Not knowing if the recipient will read and act (2 respondents).</td>
</tr>
</tbody>
</table>

Table 20: Summary all comments of negatives effects in e-mail use. All respondents in Study 3.

**Question 6: Have you sent an e-mail that you regretted? Why did you regret it?**

These questions are meant to be compared with the results of Study 1. Study 1 aimed to find inappropriate uses of e-mail and the intention with the two questions above was to find out if inappropriate use of e-mail was an issue in today's organizations.

In all communication, regardless of whether e-mail is part of it or not, there are moments when we regret things when we try to communicate. E-mail
has some special features that may cause problems, as was discussed in Chapter 3 and also will be discussed in the next chapter. 44 respondents answered “Yes” on the question if they have sent an e-mail that they have regretted and 52 respondents answered “No” (1 blank).

Why then did the respondents regret? 21 respondents mentioned incorrect content or the use of words as reasons for regretting. The wrong addressee had been a problem in 7 cases and being in a bad mood, for example angry, had been a problem in 6 cases. Misinterpreted messages caused problems in 4 cases and misinterpretation of humor or irony caused problems in 2 cases. 4 respondents mentioned receiving new data that made a sent e-mail irrelevant or earlier stated questions unnecessary. All together, e-mail that had been regretted did not have any serious consequences as far as could be defined by the answers.

**Question 7: Have you received e-mail that upset you and if so in which way?**

On the next question the responses on the two alternatives “Yes” or “No” were nearly the same as on the previous question. 43 respondents had got e-mail that had upset them and 51 had not (3 blank).

The reasons for getting upset were that the recipients in 14 cases interpreted the e-mail as critical, insulting or as a personal attack and in 12 cases found angry and coarse words. 7 respondents had been upset by the contents in spam or chain letters. In 4 cases the sender had misunderstood something that caused problems. Other reasons were: Lack of reflection, unnecessary CC, spreading of rumors, late e-mail – expectations of fast feedback (and overtime), wrong addressee and humor/irony.

### 4.5 Findings of Study 4 – Best practice of e-mail

The aim of Study 4 was to find examples of e-mail and good practices because it is possible to study e-mail miscommunication by studying good practices of e-mail. Study 4 is hence an exposition about what could be defined as “best practice” of e-mail use according to Almersdorfer (2005); Feiertag (2004); Goldsborough (2005); Hershkowitz-Coore (2005); Palme (2003); Petrie (2005); Rudick and O’Flahavan (2001); Shapiro and Anderson (1985); Siddle (2003); Svenska Spel (2000); Taylor (2001) and Volvo Cars (2006). These documents are either directives or recommendations for good e-mail usage or overviews of such documents. When searching for “best practice” of e-mail, all kinds of advice were found and only those that could reduce e-mail miscommunication have been listed. Analyzing the “best practice” of e-mail brought out topics on a variety of themes. A comment is made after each item of advice in order to explain the background and why the item is important.
Avoid misunderstandings and unclear messages

As sender:
- Have a model of your audience in mind.
- Respect your readers.
- Reflect on a suitable beginning and ending.

As recipient:
- Assume the honesty and competence of the sender.

Comment: It is easy to forget who our recipients are and therefore the content and/or the tone in a message might be misunderstood. Always assume that the sender is honest and competent although the e-mail message has its shortcomings.

As sender:
- Separate opinions from non-opinions. Look again, if a message appears to generate emotions.
- If you cannot say it – do not write it.
- Pick up the phone if your message is potentially confusing, annoying, bad, sensitive, confidential or private.
- Avoid responding while emotional.

As recipient:
- Separate opinions from non-opinions.
- Respond to issues and not to emotions.
- Avoid responding while emotional.

Comment: We tend to reply to perceived emotions instead of to the actual content in e-mail. Emotions and e-mail are a bad combination because of the lack of social cues and slow feedback processes. It is easy to write something while emotional which could hurt the recipient. To deliver bad news face-to-face is not an easy task, but it will not be easier in the long run to deliver it, at least not for the recipient, by e-mail.

As sender:
- Watch your tone!
- Do not write anything in an e-mail that might be inappropriate in somebody else’s mind.

Comment: In a pure text-based medium the words have a tendency to be perceived harsher than in face-to-face communications. Therefore it is important that we try to put ourselves in the recipient’s place before sending.

As sender:
- Think about the level of formality you put into a message.

Comment: E-mail is often regarded as an informal medium and therefore we write the way we speak, which is not always appropriate.
As sender:
- Consider alternative media.
- Never substitute e-mail for a meeting face-to-face or making a phone call.

Comment: E-mail is a useful tool under a lot of circumstances, but not always. It depends on what we want to achieve whether e-mail ought to be the medium of choice or not.

As sender:
- Avoid humor.

Comment: It is sometimes hard to understand jokes and irony in a text-based medium.

As sender:
- Avoid abbreviations and acronyms.

Comment: Unless we are sure that all the recipients are familiar with an abbreviation or acronym it is better to avoid them.

Avoid misunderstandings and increase readability

As sender:
- Exercise reasonable editorship.
- Look back before you send.
- Be concerned about proper punctuation and grammar, use spell check and proofread.
- Do not format messages in one large, continuous paragraph, a common problem in e-mail communication.

Comment: Although e-mail is easy to use and encourages an informal language we must not forget that someone is going to read what we are writing. All text messages need to be formatted to be readable. Because e-mail is regarded as a more informal than formal medium sometimes we just write a message the way we think and push the send button.

Get attention

As sender:
- Identify yourself/your affiliation.
- Use a proper signature

Comment: All e-mail looks more or less the same and therefore it is important to identify us and/or the organization we represent to get the recipient's attention.

As sender:
- Decide what is most important – put that in the first paragraph.
Comment: We get, in general, more information today than we need. To get attention, the first lines in an e-mail message are very important.

Get attention and facilitate search processes
As sender:
• Create single-subject messages.
• Use a clear and specific subject.
Comment: Because attention is a scarce resource we have a tendency to read only the first paragraph in a message. Single-subject messages are also easier to find again. Each message is one message among others. To motivate the recipient to open and read our messages we need to declare what the e-mail is about. Clear subject lines also make a message easy to find again.

Get attention and decrease e-mail overload.
As sender:
• Give an expected time frame for response.
• Make your intention clear.
• Define the expected action.
Comment: Our recipients cannot guess our thoughts, and therefore it is important that we give some kind of feedforward about our expectations. Nothing in an e-mail message reveals how urgent it is if we are not stating it explicitly.
As sender:
• Do not make requests in e-mails too demanding – ask for an update on a task, rather than for the whole job to be completed and reported back to you.
Comments: It is preferable to use e-mail for limited conversations if you need an answer.

Decrease e-mail overload
As sender:
• Perform relevant groupings.
• Correct electronic mailing lists.
Comment: E-mail makes it easy to form distribution groups. It is important to update a distribution list now and then because people change interests and positions.
As sender:
• Consider to whom you should respond.
• Avoid irrelevant e-mail messages.
• Generally avoid CC- mail
Comment: Because e-mail is easy to use we have a tendency to send too much information or too many e-mails without asking if the recipient needs the information or not.

As sender:
- Lack of information, like simply answering “yes” or “no”, makes it more work intensive for the recipient.
Comment: We cannot be sure that the recipient knows what we are replying to, especially if we do not enclose the earlier conversation.

As recipient:
- Get your inbox fit and trim: Don't let your inbox get too big, you will get stressed wasting time scrolling back and forth looking for that critical e-mail that you need right now.
Comment: If we keep all e-mails in the inbox without deleting, sorting and so on, we will probably experience problems finding the messages we need and this may cause stress.

Restrictions of e-mail use in organizational directives

The following list is a set of practical directives for e-mail use that can be found in some organizational e-mail policies (Volvo Cars 2006; Svenska Spel 2000). These directives address several e-mail problems like e-mail overload, readability and limitations on storage. They address the senders' action and rarely the recipients' action which is in accordance with the list above.
- Keep the list of recipients and CC's to a minimum.
- Avoid large attachments.
- Do not send attachments over 1 MB.
- For file sharing of larger files, use a document storage solution.
- Be restrictive in sending e-mail to more than one person.
- Use straightforward conversational language.
- Keep all messages clear, easy to understand and quick to interpret.
- Keep mail short and to the point where possible. If you do need to send a long e-mail, give an indication at the beginning of what it is about.
- Do not send chain letters.
- Do not spam.
- Keep private use of office computers to a minimum.
- E-mail is for communicating work related messages of transient nature.
- E-mail is not for extensive dialogues. Complex conversational communication is better conducted face-to-face or via phone.
- E-mails must not contain a demand to reply or carry out an action within a single working day.
4.6 Summary of Chapter 4

The overall aim in the Pre-study was to find out when e-mail might be inappropriate to use for intra organizational information. Four areas were found, during the field study and when reviewing the literature where e-mail ought to be used with caution: (1) Strategic questions, (2) human Resource issue, (3) character of the information and (4) in certain situations.

Study 1 aimed to find examples of e-mail that in some respects had caused problems for the sender or the recipient. Most of the examples are results of pure mistakes, others are the result of deliberately taken actions. Some of the mistakes are consequences of the special features of e-mail. The examples found have been sorted under some comprehensive groups: (1) Forwarding e-mail, (2) wrong recipient, (3) language issues, (4) the character of the information, (5) format issues, (6) work place conditions, (7) offending behavior and (8) topic related issues. The comprehensive groups can be used to get an overview of what might cause organizational e-mail miscommunication.

In Study 2 the area of interest was to get the respondents' views of e-mail use in different organizations, to find examples of e-mail that have caused problems, and to find out if e-mail as a working tool cause miscommunication. All the respondents in Study 2 were administrative staff and had some kind of coordinating function and they all considered e-mail a very important working tool. The main problems described by the respondents in the focus groups may be summarized; too many e-mails, too many unnecessary e-mails, problems of prioritization, feelings of being controlled by e-mail, the blurring of the border between work and leisure time because of the perceived need to check e-mails from home. The administrative personnel who replied to the web survey did not, however, report these problems.

Most respondents in Study 3 have not let e-mail take control over work, but a majority thought that e-mail often or sometimes was stressful and also perceived e-mail as a problem, but only 17 of the respondents thinks that e-mail has affected work negatively. The most frequent reasons why e-mail might be a problem were expectations of fast feedback, post absence backlog, expectations of being constantly updated, too much information in e-mail, too many incoming e-mail, irrelevant information, full or growing inbox, decreased personal contact, more sedentary work environment and that e-mail split the respondents' time.

Best practice of e-mail deals with a lot of different issues addressing a diversity of e-mail related considerations as shown in Study 4. Mostly these practices are also useful in other person-to-person communication in addition to addressing typical e-mail features.
5 Discussion of results

In Chapter 1 I wrote that the advantages of e-mail may turn into disadvantages, and the main concern of this thesis is to study under what circumstances e-mail can become an improper means of communication in organizations. To answer this main research question I have focused on a number of questions:

Q1: How has e-mail influenced communication in organizations with a focus on negative aspects?
Q2: When and why might e-mail have a negative impact in organizational communication?
Q3: What factors contribute to e-mail miscommunication?

In this chapter these question will be analyzed on the basis of the theoretical framework and on the empirical results. Chapter 5 is divided in three parts:

5.1 Possible negative aspects in e-mail communication.
5.2 Typical features of e-mail – an overview.
5.3 E-mail's affect on working life.

5.1 Possible negative aspects in e-mail communication

To establish a lucid distinction between e-mail communication and e-mail miscommunication is more or less impossible without taking contextual, situational and relational factors into consideration. But even though we may come to an agreement on extrinsic realities, our individual interpretations will determine whether we will consider a specific instance of e-mail as miscommunication or not. Our individual perception and understanding will also change from time to time.

Miscommunication is nearly always something that will be identified by the recipient of e-mail, but the causes of miscommunication are not only a matter of the sender's action. This chapter will discuss several reasons why mis-
communication comes into existence. I have chosen not to follow Harrison’s (2006) classification of trouble sources in e-mail discussions: (1) Transgression, (2) miscommunication and (3) flames, where Harrison defined miscommunication as genuine mistakes that seem to have occurred. Instead, going back to the earlier discussion about communication, in chapter 1 I defined organizational e-mail miscommunication as everything that prevents or makes it difficult for us, as an actor in the organization, to create and regulate our common social reality in order to achieve desirable goals.

The initial position is that miscommunication in organizational e-mail usage might cause negative effects on working conditions. The Pre-Study and Study 1 were carried out in order to determine the limits between appropriate and inappropriate use of e-mail, and also to find concrete examples of e-mails that have caused problems for individuals or organizations. The aim of Study 2 and 3 was to find out if e-mail is a tool for miscommunication and to find reasons for this, and the aim of Study 4 was to find examples of best practice of e-mail.

Categorizing the findings in Study 1 involved some difficulties because the examples that were found represent a comprehensive and rich empirical source. The reasons why e-mail causes problems varied among the content of the message, the sender’s intention and behavior, the recipient’s reaction and behavior and the context. Another classification could be found on the continuum from pure mistakes to deliberate actions. Underlying causes for mistakes could be the e-mail system itself but could also be due to plain human mistakes. Thoughtlessness, for example, may be a cause of miscommunication and reasons behind thoughtlessness may be a lack of knowledge, a lack of information, tiredness or plain stupidity. When it comes to deliberately sending e-mails that cause problems, the underlying causes must be classified according to the expected reactions.

Another classification of e-mail miscommunication causes, close to the discussion about pure mistakes and deliberate action, might be intentionality or unintentionality of consequences (O’Kaine & Hargie 2006, see Table 5). The intentional consequences are in most cases obvious to the sender unlike the unintentional consequences. Unintentional consequences might be: Increasing information overload, weakening relationships, misinterpretation of tone and replying impulsively. These unintentional consequences of e-mail use were found in Study 2 and 3. Also Berger (1995) stated that the message producers are not conscious of the multiple outcomes of their message that maybe cause anxiety or unnecessary questions among the recipients. In the next parts a number of examples of e-mail miscommunication are discussed.
5.1.1 Language issues

Words and sentences are vital in all text-based communication. Language problems may be divided, at least, into two parts: (1) The “normal” problems of interpreting a message and understanding the intention of the sender that we find in all human interaction and (2) the typical way of writing in CMC, short, informal and right to the point.

It is important to consider language as something abstract because there are no intrinsic relationships between a word and the meaning of it. Languages are a fundamental basis for communication but individual interpretations of words and sentences could also be a cause of misunderstandings, because we have a tendency not to consider other peoples statements as something abstract but something that reflects reality. We use a language that we have agreed upon to communicate, but the sender and the recipient do not explicitly but implicitly interpret the meanings of words. The purpose of most communication is to achieve a shared meaning and therefore it is important to understand that the creation of meaning is an individual process and it is hard, as a sender, to foresee the reaction by the recipient to a message.

An important implication for e-mail communication is that interpersonal communication is necessary to create a shared meaning, and that we use a language doing so. Because we have a need to communicate shared meaning it is vital that e-mail messages contribute to the ongoing process of understanding reality. It is also important to realize that the meaning of words is not static but depends on the individuals' interpretations, and therefore it is a good strategy to try to use unambiguous words as far as possible and also to increase both feedforward and feedback.

Intrapersonal theories help the e-mail user understand why it is sometimes hard to get the intended content of an e-mail across, because the recipient will interpret it internally to make sense of it and this is done in competition with all other thoughts and feelings. It is also important to understand that we have different message design logics that guide us in writing e-mail and also when we read received e-mail (O'Keefe 1988, see Table 10). In other words when we get a message an internal process starts which try to give meaning to it. This meaning will be a result of individual interpretations and does not only depend on the words themselves. In Study 3 one respondent made an interesting reflection about how people think, write and read differently:

It is a problem when emotionally oriented people and task oriented people communicate. Emotionally oriented people often interpret what the e-mail “really” says and task oriented people often misunderstand the content in
e-mail from emotionally oriented people. The sender needs to know who
the recipient is to write something that is deeper or sensitive.

One feature of e-mail, plain text, may cause problems according to Sproull and
Kiesler (1991) because plain text does not reveal dynamic information. The
sender does not always know how the recipient will react to a plain text mes-
scope and the recipient may have problems understanding the underlying cir-
stances behind the message. The fact that we have a tendency to misinter-
pret the content of the message is one of the main problems as have been dis-
cussed earlier (See for example Olaniran 2002).

Informal language is sometimes easier to understand but might also be
more indistinct. Several examples of language problems in the empirical study
emphasized that there is a problem finding a balance between formal and in-
formal messages. “Even if one tries to be as clear as possible”, one respondent
in the Pre-study said, “the recipient might misinterpret the message”. One of
the recommendations was that if one needs to have control over the recipients' re-
actions e-mail should be avoided. Without non-verbal cues it is difficult to
control someone’s reaction, therefore a meeting face-to-face is preferable. This
was also discussed by Riva (2002) who explained that e-mail is a special form
of communication that lacks the rules on which effective interaction depends.

On the other hand, e-mail users are becoming more and more conscious of
the lack of social cues in electronic communication and try to find ways to put
in more social information in their messages. Lea (1992, see Figure 3) also em-
phasized that we modify our behavior to compensate for the shortcoming of
different CMC system. Even when we try to overcome the limitations of a text-
based medium by deployment of for example smileys and acronyms there are
other problems to consider.

One problem is the difference between our perceived and actual ability to
interpret sarcasm and irony in e-mail. In general, we overestimate our ability to
communicate over e-mail and the reason, according to Kruger et al (2005, see
Figure 1) is that if the missing paralinguistic cues are not providing a contex-
tual frame we tend to fill in what is missing. Comparing our tendency to over-
estimate our ability to communicate over e-mail with the answers on the ques-
tions if the respondents in Study 3 had regretted a sent e-mail or if they had got
an e-mail that had upset them, the answers revealed that the sender often regrett-
ed their choice of words and the recipient got upset because they perceived a
message as an insult. Also irony and attempts to make a joke had caused trou-
ble, which was also confirmed as a problem by Kruger et al in their study. If
people think that they are able to convey sarcasm in 78% of all cases and the
actual accuracy is 56% (Kruger et al. 2005) it is important to be more humble in e-mail communication.

Humor could also be a problematic issue as is shown in E-mail example 1. This example illustrates not just the problem of knowing when an e-mail is meant as a joke but also that the recipients’ default settings in their e-mail clients might become a problem. E-mail is in the eyes of most users a text based medium, and the default setting is therefore not adjusted to HTML. This means that when getting a message that needs HTML some recipients might have problems reading the correct contents of the message. Some e-mail that requires HTML starts though with a line stating: “This e-mail can only be read in HTML”.

<table>
<thead>
<tr>
<th>From: Anonymous (translated from Swedish)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subject: It is here now!!</td>
</tr>
<tr>
<td><strong>ARLANDA AIRPORT</strong></td>
</tr>
<tr>
<td>confirmed earlier unverified information: Today the first airplane infected by the Bird flu disease touched down.</td>
</tr>
</tbody>
</table>

E-mail example 1: E-mail joke requiring HTML to be understood as a joke since without the “invisible” picture this message might be understood seriously.

Written words also came across harder in e-mail communication resulting in suggestions being “interpreted as truths or strict guidelines” (Jansson 2005:161). One example of an inappropriate text message is given in E-mail example 2. If the message had been discussed face-to-face with a friendly smile, it would not have been that offending, as it now can be perceived, especially if the recipient feels that writing is not his strongest gift.

<table>
<thead>
<tr>
<th>From: Anonymous (translated from Swedish; part of message)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subject: Re: Comments on essay</td>
</tr>
<tr>
<td>When I’m reading what you are writing, I wonder if you know what you have done. Your essay if full of empty phrases chosen haphazardly! Besides that, you write too long and too complicated sentences that also are grammatically incorrect. All is just like a smoke screen, boloney without any real content. Do you understand what you are writing yourself? If not, how do you think I and other readers are going to understand?</td>
</tr>
</tbody>
</table>

E-mail example 2: Written words might be perceived harder than oral language.

In Study 2 the respondents prioritized those e-mails that were perceived as angry because otherwise they would generate more work in the long run. Ignoring the emotional content in angry messages and only reacting to the factual content is important in e-mail communication. In the Pre-study the importance of
not responding to something that was perceived as irritating was emphasized. Reacting to emotional content might lead to a long drawn-out message exchange maybe causing flaming. Offending messages, according to McLaughlin et al (1995), are characterized by being perceived as personal attacks, if they contain coarse or hostile language that distracts the reader from the content of the message. 21 respondents in Study 3 had regretted sending messages because of the use of words.

The reasons for getting upset in Study 3 were that the recipient in 14 cases perceived the e-mail as a critical, insulting or personal attack, or in 12 cases because the message contained angry and coarse words. In the Pre-study one respondent said that it is important that the sender expresses himself as clearly as possible, otherwise a series of new messages are needed to clarify the original message. One respondent in the Pre-study drew attention to the possibility that e-mail invites users to use less well thought-out-wordings “Like a Stone Age man who is boosting of” and continued: “E-mail invites one to send some quick answers and viewpoints which may give raise to stronger reactions than was intended.”

Two respondents in Study 1 discussed the use of capital letters. One of them had a business contact that always as default used capital letters and because this contact was important he did not tell the contact not to. Although the respondent knew that the use of capital letters did not mean anything he still had a feeling that the recipient was angry when writing his e-mail. Another example of the use of capital letters is found in E-mail example 3, where the use of capital letters ended all further communication. Capital letters might, though, be used in order to emphasize certain words since if the recipient does not have HTML as default the message will anyway be clear.

| From: Anonymous (translated from Swedish) |
| Subject: Re: Your opinion |
| We have discussed this issue for a very long time and I have nothing more to add. I know that you are interested in what I think but I will not try to explain any more. And: “DON’T WRITE BACK!” |

E-mail example 3: Capital letters might be used in an improper way.

5.1.2 Character of information
The next problem has to do with the character of information. There were similarities to the findings in the Pre-study, but the examples represent the larger scope of Study 1. In the Pre-study it was mostly a question of vague or ambiguous information or very extensive information. In Study 1, 2 and 3 I found
that too much information was a problem like attachments of large files or to many attached files (See E-mail example 4) the content of which could have been summarized one or two sentences, huge numbers of e-mails with different versions of the same proposal and long lists of visible e-mail addresses for all recipients. It is important to know that employees usually ask for summarized information (Simonsson 2002) and that e-mail is not always the best medium for this.

From: Fictitious (inspired by genuine cases)
Subject: Your opinion?

Hi!
I met client NN yesterday and need to come back to him as soon as possible, and enclose therefore all material that was discussed to get your opinion promptly.

E-mail example 4: Too many attached files and request of immediate response.

Too much information is a problem, but even too little information might be a problem. E-mails that give raise to questions like: “What am I supposed to do?” “Who else has got this?” “Why have I got this?” often only increase the information overload. Getting a reply that only states: “Damn it!” without the former text inserted has the same effect. If somebody wants to discuss some type of problem that is not specific enough, or if the context is undefined, so that a fairly immediate answer can be given may also cause frustration.

Getting irrelevant information was a problem mentioned by eleven respondents in Study 3. This could be compared with the result in Birchall's (2007) study where the respondents considered that 31 % of all e-mail was irrelevant to their work tasks. “E-mail is a positive working tool, if only it was possible to sort out everything that is irrelevant”, one respondent in Study 3 stated, “because sorting out irrelevant information is time consuming”. It is also irritating when people send group e-mail to a lot of recipients when the content of the message is only interesting to a minority. “E-mail makes it easy to send information for safety's sake”, one respondent commented on. One of the problems with the perception of relevant versus irrelevant information is that it is the recipient who decides whether it is interesting or not. I think that many managers think it is better to distribute too much information than too little –
for safety's sake – and leave it to the recipient to decide whether the information is relevant or not. It is also easier and less time-consuming for the sender to forward it without asking if the information is relevant or not for the recipients.

5.1.3 Information content

There are certain topics that are inappropriate to discuss in intra organizational e-mail according to the findings in Study 1 (See 4.2). Statements of racial agitation, sex and drug issues are topics unsuitable for organizational e-mail. These topics related issues could also be categorized as offending behavior because it is obvious to most people that regular working life should not involve racial statements or sex and drug issues.

In the Pre-study certain human resource issues were pointed out as not being appropriate to manage through e-mail. Examples that were mentioned were: Relocations, dismissals, salary negotiations, confidential decisions, disciplinary issues, warnings that can be considered bullying, personal questions and changing circumstance, or actions of a personal nature. In Study 1 several concrete examples of human resource issues that have caused negative reactions were found. One example illustrating this is found in E-mail example 5.

| From: Fictitious (inspired by genuine case, see Wångersjö 2005) |
| Subject: Reorganization |
| Due to the recently completed negotiation between the union and the company we are forced to give notice that some of our employees have to leave our company because of lack of work on August 15th. |
| You are among those whose employment will end by this date. Very soon someone from the personnel department will contact you with further information. |

E-mail example 5: E-mail used for firing staff.

Sending e-mail about freezing salaries because of decreasing profitability if you are the CEO will probably be regarded as very provocative, one respondent in the Pre-study reflected. In a decentralized organization it might be important to establish firm new personnel rules throughout the organization before distributing them through e-mail, another respondent in the Pre-study confirmed, because of an incident where this caused the HR manager to leave the company. Another example of work task issues where e-mail might not be appropriate would be when trying to get an idea about the employees’ opinions in a matter like the one found in E-mail example 6. If the goal for the survey only was to get the employees “Yes” or “No” a secret ballot would probably had resulted in less indignant reactions.
From: Anonymous (translated from Swedish)
Subject: Leadership

Hi!
Sven has asked me to do a little survey about our thoughts about extending his temporary post. He wants us, of course, to gather our point of views without him being present.
So: Are you positive to an extension of Sven’s temporary post?
Anna (who is positive)

E-mail example 6: E-mail used for inappropriate work task.

5.1.4 Unintended recipient
Forwarding e-mail is a kind of action or behavior that might deliberately or through thoughtlessness cause problems but in most cases there will be no problem at all. Problems may occur though, when the content of the message is sensitive or notable in some respects, according to e-mails collected in Study 1. Even if forwarding e-mail does not have to cause any negative effects, one problematic areas in e-mail communication seems to be forwarding e-mail without reflecting on the risk of negative consequences. Forwarding an e-mail containing sensitive or private information without permission violated normative expectations according to McLaughlin et al (1995). Palme (2003:38) stated “[…] that you should not resend text to larger and more opens groups without permission from the author.” This rule is not absolute, however, because forwarding e-mail that is not controversial might not be a problem. It is also important to make sure that a forwarded e-mail does not contain information from previous senders which should not be forwarded.

The wrong recipient is a typical problem in e-mail communication. Addressing the wrong recipient also is an action or behavior that is nearly always done out of thoughtlessness. If we are in the habit of guessing the recipients e-mail address, as Zavoina (2003) stated that we often do, the risk of sending our messages to the wrong recipients will of course increase. In most cases this will not be a problem, but depending on the content and the recipient it may cause problems.

With ordinary postal mail, we put an outgoing letter in a box for outgoing mail, but do not usually mail them immediately. Many people use their e-mail system to send outgoing mail immediately. When mail is first saved for some time in the outbox, the risk of mistakes is smaller. We can even check the mail in this box once more before sending it but most e-mail users do not use this facility.
Wrong addresses are partly a system based problem, because the e-mail software usually proposes an addressee and if the sender is not alert, the message may be sent to the wrong person or group of persons. Another example, given by one respondent in Study 1, that illustrates how our attention sometimes plays a vital role in e-mail communication: If upset over somebody's behavior and if then writing an e-mail to a friend complaining about this somebody's behavior, it is easy to write the name of the person that have upset you as recipient instead of the friend. In an e-mail the following concluding text was found: “If you are not the intended recipient (to this e-mail), you should delete this message.” But because it was at the end of the message the content of the message had to be read before this text was reached. To fill the intended function the request ought to be stated in the beginning of the message, but the problem is that it is not at good idea to start a message with a sentence like this because this will probably be regarded as rude. I also suspect that it would also peek someone's curiosity and make him or her even more likely to read the e-mail.

5.1.5 Offending behavior

O'Sullivan and Flanagin (2003) have shown that hostility in electronic communication is interpreted differently by sender, recipient and researcher and that flames may be attributed to miscommunication instead. In this discussion the intention of the sender is important which is only apparent in the text, and without other social cues and context the recipient responds only to what is in the e-mail. One example found in Study 1 (See E-mail example 7) was a discussion over e-mail between two legal secretaries over the whereabouts of the makings of a ham sandwich, leading to both being fired (McIlveen & Mark 2005).

According to all the respondents in the Pre-study flaming was not common between peers in the organizations. Indignant discussions, though, occurred among students. These discussions sometimes lead to rack and ruin and therefore need an intervention from someone more mature. “It is important to realize that words may have a different meaning for young people than for older ones”, one respondent argued, “and if they did not have access to electronic communication they would maybe send a slip of paper instead which would probably convey the same insulting information.” The anonymity of electronic communication may be another reason that makes the students more independent of each other and therefore creates a risk of an escalating conflict that is not common when they are standing face-to-face. “It is important”, the respondent in the Pre-study said, “to keep apart being straight to the point and
being artfully mean”. In Study 2 and 3 no evidence was found that flaming was a problem.

From: McIlveen and Mark (2005)
Subject: Exchange between legal secretaries over the whereabouts of the makings of a ham sandwich

KATRINA NUGENT 9.39am: Yesterday I put my lunch in the fridge on Level 19 which included a packet of ham, some cheese slices and two slices of bread which was going to be for my lunch today. Over night it has gone missing and as I have no spare money to buy another lunch today, I would appreciate being reimbursed for it.

MELINDA BIRD 9.55: Katrina, There are items fitting your exact description in the level 20 fridge. Are you sure you didn't place your lunch in the wrong fridge yesterday?

KATRINA NUGENT 10.06: Melinda, probably best you don't reply to all next time, would be annoyed to the lawyers. The kitchen was not doing dinner last night, so obviously someone has helped themselves to my lunch. Really sweet of you to investigate for me!

MELINDA BIRD 10.14: Katrina, since I used to be a float and am still on the level 19 email list I couldn't help but receive your ridiculous email - lucky me! You use our kitchen all the time for some unknown reason and I saw the items you mentioned in the fridge so naturally thought you may have placed them in the wrong fridge. Thanks I know I'm sweet and I only had your best interests at heart. Now as you would say, "BYE"!

KATRINA NUGENT 10.15: I'm not blonde!!!

MELINDA BIRD 10.16: Being a brunette doesn't mean you're smart though!

KATRINA NUGENT 10.17: I definitely wouldn't trade places with you for "the world"!

MELINDA BIRD 10.19: I wouldn't trade places with you for the world... I don't want your figure!

KATRINA NUGENT 10.21: Let's not get person (sic) "Miss Can't Keep A Boyfriend". I am in a happy relationship, have a beautiful apartment, brand new car, high pay job...say no more!!

MELINDA BIRD 10.23: Oh my God I'm laughing! happy relationship (you have been with so many guys), beautiful apartment (so what), brand new car (me too), high pay job (I earn more)....say plenty more... I have 5 guys at the moment! haha.

E-mail example 7: Flames in e-mail communication.

Bullying is a verbal and aggressive behavior according to Baruch (2005) who also reported that there is no research that has determined whether e-mail reduces, increases or just changes the nature of bullying. While e-mail has become a primary means of communication at the workplace it might add a feeling of social isolation. It is possible that this social isolation may influence the content in an e-mail and make its reader more sensitive to the words used in it
and make him or her react more strongly than if another medium had been used.

However, few examples of bullying were found during the empirical study of the organizations in this thesis, but one respondent in Study 3 remembered when working at a former workplace that some of the employees were excluded from internal distributions list used for distribution of jokes and gossips: “Some became shut out from jokes and pictures that were sent around, they did not count because they were not on the send list.” Another respondent in Study 3 reflected: "What are the consequences if you stop talking to each other and send e-mail instead? Bad atmosphere, gossip, and new forms of bullying, like not being on the send list for jokes and pictures?” Those excluded felt like outsiders and this unintentional or intentional behavior is an example of bullying at work although it is not characterized as being explicitly aggressive.

There are certain contents in e-mail that might be interpreted as offending but not bullying. One respondent in Study 1, for example, got an e-mail that stated: “Don’t invite N.N because he is a drunkard”. Berghel (1997) stated that an employee was fired because he had written in what he thought was a private e-mail that the manager he worked for was a “back-stabbing bastard”. This example also raises legal and ethical issues about monitoring employees' e-mail. Pretending to be somebody else using someone else's account or computer to send e-mail might be considered as a practical joke but is something that can be regarded as offensive and also illegal depending on the consequences. Sending a message late on Friday afternoon saying that: “There is some uncertainty that need to be cleared up immediately; absolutely Monday pm I need a written report of the following issues” will probably cause problems in the future relationship between sender and recipient. Asking someone to consider his behavior not to offend somebody else is not appropriate to do through e-mail. Finding the text “To make this e-mail public or hold it up to ridicule will lead to immediate legal actions” got Berggren (2005) to make the comment that: “People who write things like this do not deserve to be taken seriously”.

5.1.6 E-mail overload
Because e-mail has become such an important tool there is a causal connection between the tool and different kinds of e-mail overload mostly related to the nature of the workplace but also to the user's role in the organization according to Ducheneaut and Bellotti (2001). People have learnt to use e-mail and thereby some limitations and pitfalls have been overcome (See Lea 1992), but there are still problems left and people have a tendency to overuse e-mail, sending too much information, demanding responses too quickly and having a notion that everyone is online all the time (Jansson 2005).
According to Beckett (2003) speed, quantity and quality of information pose a challenge, and it is vital to embrace human wellbeing when systems become more important than people. Looking at information overload as an inverted u-curve (Figure 4), we see that the amount of information up to a certain point will help the individual in her or his performance. After reaching this point the performance will decline because too much information will confuse the individual, affect the ability to prioritize and have a negative effect on memory functions (Eppler & Mengis 2003). When analyzing the empirical findings in this thesis it is important to recall that Dawley and William (2003) found that respondents with a higher education complained more about e-mail overload than those who had a lower education. In Study 3 seventy respondents (out of 97) had a university or college education, which could explain that sixty-six respondents often or sometimes thought that e-mail created stress. Dawley and William (2003) also found that experience will decrease feelings of information overload, and that e-mail overload to a high degree depends on peer misuse of e-mail. I think, however, that even if e-mail overload to a high degree is a matter of peer misuse everyone is a peer in relation to somebody else, and therefore it is important not to transfer the problems to the environment entirely.

As was discussed earlier there are arguments in favor of e-mail because it is an asynchronous communication medium but earlier research has found that e-mail also might cause information overload. This study indicates that e-mail overload is a problem among certain groups in the studied organizations. In common the respondents had some kind of coordination function either as administrator, manager or teacher. In this function an individual usually has many different people to keep updated and also get a lot of information from different sources. Based on the findings in Study 2 and 3 I will in the next parts discuss e-mail overload under two headings: (1) Expectations overload and (2) information overload.

### 5.1.6.1 Expectations overload

Thomas et al (2006) found that pressures to respond, i.e. expectations of immediacy, were one cause of e-mail overload, which is also confirmed by Study 2 and 3 in this thesis. The expectations, inherent or by others to respond quickly to incoming messages, were mentioned by twenty-six respondents in Study 3 and this is a typical expectations overload problem. One respondent commented: “Many want to have fast feedback and trying to satisfy this will break my own planning”. Another respondent wrote: “The way e-mail is used today there are expectations of how fast and often one wants to have a response from peers. These expectations control my work to too large an extent today.” Ex-
pectations of fast response was also discussed in the focus groups in Study 2 and the problem, according to the participants, was that they in their turn wanted fast feedback to their e-mail and therefore foresaw that it was the same with those who sent e-mail to them. Some e-mail users are impatiently waiting for an answer and may send a new message like the one found in E-mail example 8 and may thereby increase both expectations overload and information overload.

From: Anonymous (translated from Swedish)
Subject: Re: File missing

Hi!
Yesterday, I sent a couple of e-mails asking you about the next assignment but you’ve not answered yet. I hope by this mail to get an answer – SOON.

E-mail example 8: Demanding prompt reply on e-mail.

Another problem is that e-mail has a tendency to get priority (9 respondents) independent of if other tasks have to be taken care of first. Because of this priority of reading e-mails and expectations of fast responses quality problems in the decision process may occur (7 respondents). There are also expectations that recipients are informed because information has been sent out, but because too much information is sent out today it is very hard to keep pace with the information flow some respondents in Study 3 affirmed. Other expectations were that one is supposed to be engaged in all matters that have been distributed to “all”. Finding a balance between the surroundings’ explicit and implicit demands and one’s own need for time to reflect is important as is discussed by a respondent:

E-mail and mobile phones speed up work life more and more. You think that you have to be involved in everything, which is harmful in the long run and as a counterbalance we must also have periods of silence where we can rest to keep our balance. I cannot be without e-mail today, because it has become so important.

Another expectations overload problem, mentioned by several respondents, is the expectations of always being updated, and to be updated one has to have access to computers and networks, being online, opening e-mail programs, reading new e-mails and acting in a proper way according to the expectations of the sender.

The inverted u-curve (Schroder et al 1967 in Eppler & Mengis 2003, see Figure 4), can also be used in the discussion about expectation overload. With-
out any expectations, whether they are implicit or explicit, more e-mail would be left unattended in the users inboxes causing lowered decision accuracy probably both for the sender as well as the recipient. If the expectations overload is too high there will be a risk that other maybe more important tasks will be suffering. This might also have a negative impact on decision accuracy.

Figure 6: Expectations overload as the inverted u-curve (Inspired by Schroder et al 1967 in Eppler & Mengis 2003:9).

5.1.6.2 Information overload

Information overload in every day discussions is usually a word meaning that somebody gets too much information in some sense. Within the research community information overload refers to different concepts offering a broad range of ways to study information overload in different contexts and under different conditions.

Eppler and Mengis (2003) analyzed in their review of earlier research causes of information overload in organizations. It is not possible to compare the empirical study in this study in all respects to Eppler and Mengis' categories because of a lack of information about some conditions. The respondents, though, mentioned some of the causes identified by Eppler and Mengis. The first category is information characteristics where increased numbers of items of information, intensity of information, increase in the dimensions of information and overabundance of irrelevant information were mentioned.

When it comes to the next category, personal factors i.e. limitations in the individual human information processing capacity, it is not possible to tell from the conducted study if personal factors are important or not for perception of information overload.

The next category, task and process parameters has to do with for example fewer routine tasks and more complexity of tasks something that is a reality for the respondents in Study 3 although they did not comment that this was a prob-
lem. One cause of stress according to Eppler and Mengis was time pressure, something that was a problem according to several respondents. Another problem mentioned by Eppler and Mengis were task interruptions that can be compared to what I have categorized as expectations overload. For example expectations of fast feedback, constantly being updated to keep up with e-mail and always being online/accessible might cause task interruption.

Organizational design has not been a part of this study but because the respondents all belong to what could be called coordinating functions or collaborative work, one of Eppler and Mengis causes of stress in the category organization design, is a vital part of the respondents work this will probably be one cause of feelings of stress.

The last category is information technology where e-mail is defined as one cause for information overload. Other causes, mentioned by Eppler and Mengis, were Intranet and various distribution channels for the same content, which some respondents mentioned as a problem.

According to Thomas et al (2006) some reasons for information overload are unstable requests, i.e. when new information changes earlier conditions (See E-mail example 9), the ease of distributing and new ways for users to multitask.

A fixed boundary line does not exist between what the respondents defined as stress caused by e-mail and what was defined as something else. For example, some of the physical or mental constraints that were discussed earlier may also cause stress in the long run. Too many e-mail messages will probably only become a problem if too many group e-mails are sent or if the recipient is someone that a lot of senders need to get in touch with, for example some managers.

What causes feelings of information overload according to the respondents? Forty-three respondents had too many incoming e-mails, a full/growing inbox and found too much information in e-mail, eleven respondents thought that irrelevant information was a problem, nine respondents had problems with spam, five respondents thought that circulating and repeating communication increased information overload, five got too many CCs, three respondents found that too little information or messages that were hard to understand could
be a problem and finally two respondents thought that the use of reply all was used too much (See also Table 20).

As a member of a work group one is supposed to be familiar with everything that happens both inside the organization and in the surrounding society. Standards of what kind of information is relevant for which target group have developed into “everybody needs to know everything” and “more is better than less”. This is not always true according to some respondents who asked for time for reflection and consideration – they needed time to think. One respondent in Study 3 made an interesting reflection: “Personally I do not get stressed (maybe because of experience and personality) but there is no doubt that if e-mail keeps gushing in one will not be able to catch up with work.”

Other examples are information that is not important and is accessible in other places, or those who have a tendency to send to many e-mails at all times of the day like one respondent in Study 3 commented. Somebody felt bad when the inbox contains more than 100 e-mails waiting to be taken care of, and somebody else said that getting an e-mail with several attached files each one made up of maybe ten pages is extremely stressful. Too much information or irrelevant information all the time makes it impossible to relax because the brain never gets a period of rest and the brain’s memory functions might be influenced.

Sometimes when opening an e-mail it feels like we face a “Wall of text” like in E-mail example 10 (p. 132). To read such e-mail demands a high level of motivation from the recipient’s side. Without a reader friendly layout where some inserted blank lines, some commas and periods will make all the difference, most recipient will lose their interest in trying to understand the content of the message.

One respondent got a bad conscience when there was no time to answer or in some cases not even time to open incoming messages. All e-mails put on the “to do list” or e-mails that ended up deep down on the inbox list and thereby would be forgotten were a permanent cause of feelings of stress. Somebody else found that it is much too easy to send e-mail. Compared to a phone call it is hard to “defend” oneself against e-mail because the sender knows that the e-mail will be received. If we do not answer the phone it is accepted that we are not at our desk, said a respondent. However, this is not always true because of the extended use of voice mail where the callers are able to leave a message. Voice mail messages might be as hard to defend oneself against as e-mail messages.

Examples of irrelevant e-mails are those who are sent out to different lists without any consideration if the recipients need the information. If the information in addition is long-winded then it is another cause of stress. It is also too
easy to send e-mail as a matter of precaution especially when the subject is only of interest to a few.

From: Fictitious
Subject: Some ideas to be considered

This might be one reason why we sometimes use e-mail to communicate matters that we in the long run should have tried to communicate by other means bringing very unpleasant information is also an example of asymmetry in the communication because the delivery process is in the hands of the sender. Interesting though, is when delivering bad news honesty is an important skill and direct communication might be easier in the long run for both the sender and the receiver it is not unusual that we try to “wrap up” a negative e-mail message to such a large extent that the message will be unclear. A student mentioning some type of problem that is not specific enough so that a fairly immediate answer can be given can wait for a long time in the inbox. Of course one could immediately answer with a request for clarification which does not always help they take a long time to download and clog up my mailbox. I usually do my email from my laptop, and have found that the university’s Computing and IT Services don’t seem able to connect the laptop to the university network. This e-mail makes no sense because nobody will read it because of the lack of format and that is why you should push the blank line now and than in order to make your e-mail more readable and also use dots and commas where it is suitable not to overwhelm your readers because I think that you want your e-mail to be

E-mail example 10: Wall of text in e-mail communication (Do not try to read it!).

Other causes of stress are when one does not have the time to read incoming e-mails, said a respondent, and those around discuss the content, and one does not have enough information to join the debate. Or if there are too many who use “reply all” instead of just giving an answer to the one who sent a message. Usually reply all is used to answer a request that is relevant to a group of recipients. A typical issue is scheduling time for a meeting. Depending on the action of each recipient the number of e-mails that this request will yield will vary considerably. The proper way to efficiently arrange the time for a meeting by e-mail is for one person to send an invitation to all which specifies multiple possible dates. Each person then responds only to this person with information about which of these is suitable. The person who started the process then summarizes the responses and sends a message to all again proposing a date that suits all.

Looking at Figure 7 where the reply all function is not used the convener will get eight e-mails and will send two, and all recipients get three e-mails. If the recipients send reply all the convener will still send three e-mails and receive eight, but each recipients will get nine e-mails instead of three although they just send two. The number of sent e-mail for the whole group will stay on
the same level independent of if the function reply all is used or not but the number of received e-mails will increase (See Table 21).

In addition to generating more e-mails using the function “reply to all” may also create problems in coming to a decision. Another phenomenon discussed earlier, circulating and repeating communication, will have the same effect on the number of received e-mails as the function reply all.

Five respondents in Study 3 discussed another phenomenon; “circulating and repeating communication” meaning that too many messages are sent back and forth and the time to come to a decision tends to be much longer than necessary. A task may be sent around to a group of people without anything being done, because nobody takes responsibility for the task by summarizing the discussion and suggesting a decision. Even if someone does, new information may come, starting a new discussion and communication continues. One respondent described a typical inefficient circulating and repeating communication: “Productivity has increased, but not always quality, because the faster speed and lack of time has lead to decisions without support in the organization. Usually issues will turn up again even if it has been attended to several times.” Birchall (2007) found in his study that 13 % of all e-mail messages generated 5-6
rounds of discussion and 41 % generated 3-4 rounds. Probably to many rounds of discussions are perceived as what has been defined as circulating and repeating communication in this thesis.

An example of circulating and repeating communication is intensive communication between several people and on different issues – at the same time. After a while it is very easy to get lost in what has been done and what is still there to take care of. A respondent in Study 2 also mentioned this phenomenon, circulating and repeating communication: “Sometimes it feels like a discussion never ends because it is an e-mail discussion. One thinks that the discussion has ended, when suddenly the other person answers the mail again.”

Like circulating and repeating communication, the perceived need for priority in reading e-mails and expectations of fast responses, quality problems in the decision process may be a reality. Seven respondents in Study 3 questioned if decision quality has decreased because e-mail has a built-in demand for fast answers. A fast answer may be a correct answer, of course, but some answers demand thoughtful consideration before being answered and sometimes e-mail does not encourage us to take time to do so. One respondent commented that the speed of communication is faster today but that it does not necessarily meet a high quality standard. Another respondent commented: “Sometimes one gets a number of questions that demand immediate response and this is stressful. It is also hard to attain quality.”

One explanation for circulating and repeating communication in e-mail might be the absence of some kinds of “keys” that we are more or less conscious of in face-to-face interactions or on the telephone which signal that the communication has come to an end. Another explanation could be a feeling that we “give up” if we do not continue to argue. A third explanation is that e-mail discussions often do not have a stipulated date when an issue is expected to be resolved.

5.2 Typical features of e-mail – an overview

An extensive discussion about the typical features of e-mail and their influence on communication processes has been going on for quite a long time among researchers and non-professionals. This thesis is built on the idea that e-mail is a special kind of communication medium that differs from other communication means. In Table 22 (p. 137) I have summarized the most often discussed e-mail features and compared them to those of some other frequently used communication media.

The light grey boxes in the table indicate the similarity between e-mail and other communication media. Some e-mail features will also be found in
other media, but none of them have the same features as e-mail. Going back to the earlier discussion, e-mail has many outstanding features that have made it the medium of choice for organizational communication. SMS is a medium that comes close to e-mail, but it is more limited considering features like possible communication rhythm or speed because writing a message on a keyboard is faster than writing it on a mobile phone keypad. Sending large attachments might also be a problem with mobile phones even if they are connected to the Internet, although this is a matter of memory capacity and will not be a problem in the next generation mobile phones. One of the advantages of SMS is the total flexibility in time and space, something that is also the case when e-mail is installed in mobile phones.

In the following part I will return to some of the state-of-the-art e-mail research mentioned earlier in Chapter 3 and discuss each feature and compare it to the empirical findings in this work.

5.2.1 Asynchronous/Synchronous communication and communication rhythm/speed

Whether a communication medium offers asynchronous or synchronous communication is one of the most important features when choosing a communication medium. Very often flexibility in time and space is a necessity because of more distributed organizations and globalization. There is a need to reach many individuals or groups quickly, independent of time and space.

Thirteen respondents in Study 3 mentioned the value of asynchronous communication. “This is of course important when somebody you want to reach works different hours than you”, one respondent thought, “Besides that, e-mail gives the recipient an opportunity to read whenever he has the time and this is good feature especially when it comes to non-urgent information”. Another respondent thought that e-mail was indispensable for performing his tasks, and that e-mail made it possible to keep in contact with colleagues and students without “running around” looking for people working in different places.

One key dimension of e-mail is the speed of transfer. It is possible to write a message, transfer it and someone can receive it almost instantaneously. That person can then respond and transmit the response immediately. This feature of e-mail may generate a fast rhythm of sending and answering messages and therefore encourages a certain pattern of behavior and suppresses others according to Kolb (in Ess 1996). Earlier I mentioned a study conducted by Wilson (2002) who found that all respondents in his survey rated face-to-face communication higher than e-mail for all categories in the study; socialization,
completeness, execution tasks, choice tasks, generation tasks – with the exception of one; Speed.

E-mail is a fast medium that does not require a high level of technical skills to use, but the speed of the transmission of information could create a feeling of urgency and an individual may act in haste without considering the implications. Taylor (2001:10) stated that this might result “in messages being sent without much thought or planning, with important details missing, with spelling and punctuation errors, and with abbreviations that some people don't like and others simply don't understand.” One respondent in Study 1 confirmed that use of abbreviation might confuse recipients, and the reason why the respondents in Study 3 did regret sending e-mail or got upset when receiving one to a large extent depended on the use of words. Besides this, the simplicity and rapidity may constitute too low an obstacle; messages may be sent that ought to be distributed through another medium or that should not be sent at all as was discussed in the Pre-study.

E-mail offers a fast communication rhythm but it is the asynchronous features that are the reason why e-mail has become the choice of communication media. Going back to discussion about the problems of expectations overload, it is plausible that these two features, asynchronous communication and speed are in conflict in organizational e-mail communication use. For example, one of the problems discussed under expectations overload is the feeling that fast feedback requirements cause stress. This feeling might be caused by the individuals' intrinsic expectations or by others' implicit or explicit demands. One explanation might be that it is possible to give fast feedback. And because it is possible people tend to demand it independent of the recipients' other obligations. Our own work tasks are always prioritized and therefore we might be stressed because we need an answer to a request. One respondent in Study 3 said: “When many people don't answer in a long time I can't do my work because I cannot continue without getting the information I need”.

I think it is important to consider making our intentions and needs clear when using e-mail and for those who are our recipients to agree to them. It is important to realize that even if something is possible it is not always desirable.

5.2.2 Feedback

Olaniran (2002) discussed that misunderstandings may be inherent in CMC. This may be due among other things to its slow feedback processes, since feedback loops are essential in all communications to inform the sender about the recipient's reaction. Without feedback it is impossible to know that a misunderstanding has occurred. One reason why it is not easy to get thorough feedback
<table>
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<th>Letter</th>
<th>Chat One-to-One</th>
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* Slow or medium depending on if e-mail or SMS is used as an asynchronous or synchronous medium.
** Although e-mail, SMS and chat are text-based media users have adapted a language that in style and feeling is more like our oral language than our written one.
*** Telephone conferences possible and also use of loudspeaker
**** Conversation content, and also those social cues that occur in phone and cell phone conversation, but not all social cues in a face-to-face conversation, might be recorded and thereby forwarded to somebody else.
***** If not recorded

Table 22: Comparison among e-mail and some other contemporary communication media.
One problem is that attention is a scarce resource in today's organizations (Hallowell 1999; 2005; Davenport & Beck 2001), but increased feedback is one means to get through the e-mail overload. Proponents of Information Richness theory (Daft & Lengel 1984; Daft et al 1987) stated that face-to-face communication is the richest medium and text-based media like e-mail are regarded as less rich. The first and most important criterion is whether a medium allows instant feedback, giving the recipient an opportunity to ask questions and make corrections (See also Dennis & Valacich 1999). If feedback is the most important criterion in a communication process, instant messages (chat) ought to be the most efficient way to communicate electronically.

In cases where feedback is not forthcoming, misunderstandings may fester and cause problems for the organization. The significance of feedback in e-mail communication was commented on in the Pre-study of this thesis. Getting rapid feedback helps the sender to realize that there has been a misunderstanding and the brewing conflict can be prevented and not escalated. In Study 3 one respondent pointed out: “Many want fast feedback and trying to respond to this will break my own planning.” Expectations of fast feedback are one of the most important parts in expectations overload because many respondents thought that this, like the respondent cited, would influence their own planning. In Study 2 the participants thought that the problem was that they in their turn wanted fast feedback on sent e-mail and therefore foresaw that it is the same with those who sent e-mail to them. In other words there is a conflict between the sender's need of feedback and the recipient's feelings of expectations overload. This is a matter of interdependence, not only in e-mail but in all information exchanges.

5.2.3 Social cues

Sproull and Kiesler (1991) explained that when communication lack dynamic personal information, like social cues, people focus more on the words in a message than on each other. Focusing on words and not on the sender might create a sense of anonymity and is also less influenced by social conventions. This has of course consequences for our communication behavior. But, if the paralinguistic cues that provide a contextual frame are missing we tend to fill in what is missing, and our cognitive effort will increase as well as the communication ambiguity (Kock 2005). What will be filled in depends on our own feel-

in e-mail communication is that plain text does not reveal dynamic information, which is important to fully understand the meaning of a message (Sproull & Kiesler 1991). Of course feedback is feasible also in e-mail communication but the feedback process is generally slow, and there are no guarantees that it will reveal that misunderstandings exist.
ings and thoughts and we are not aware of doing it because it is an automatic action, which depends on our sensemaking processes (Weick 1995; Dervin 1983).

Sproull and Kiesler (1991) asserted that e-mail contains little static information about place, position and person. The sender may see the addressees as a group, and the addressees perceive the message as one in a long row – all looking the same. The message itself provides in other words little social information. Paralinguistic cues such as body language and the way we emphasis what we are saying is important for a deeper understanding of the inward sense of our messages. These cues also convey our emotions. E-mail communication is a text-based application revealing little about the way we feel. Some e-mail users try to overcome this restriction by including more information in the text of a message, for example by the use of smileys.

On the other hand asynchronous communication has strength when people are shy or need time to think without being stressed by time or social cues. Sproull and Kiesler (1991) found that e-mail creates a feeling of privacy that helps the user express what they really want to say without seeing any signs of criticism. People feel safe in front of the computer because of a reduced fear of being regarded as foolish in front of others in a face-to-face communication. The need for time to think was mentioned by some respondents in Study 3 but not as something that e-mail might support but because of the heavy workload in general and e-mail overload in particular.

5.2.4 Oral/Written

The language used in e-mail lies somewhere between the oral and the written language, helping the user to be more candid when sending e-mail messages. Of course, any kind of written communication can be pretty candid, but usually other kinds of organizational written communication is more formal than e-mail communication. One respondent in Study 1 found that it was a problem to find the balance between being formal and informal, and another respondent in the same study wondered if being to formal is the same as being too strict, heartless or impersonal. Or are sloppy messages the same as showing no respect to the recipients?

Although e-mail is a text-based medium users have adapted a language that in style and feeling is more like our oral language than our written one (Kolb in Ess 1996). E-mails are usually rather short and the discussion will be developed through a series of short messages. This is one reason that e-mail is considered as “living” (Kolb in Ess 1996).

E-mail communication is therefore a balancing act between not being too candid, and anyway making the message clear (Jansson 2005). The sender has
a problem in getting a feeling for how the recipient will react to a plain text message and the recipient may have problems understanding the underlying circumstances behind the message. One of the respondents in the Pre-study said:

You do not write the way you speak. Young people do, but they are so unbelievably used to writing, they abbreviate, and it all becomes a new language. It is not only the language that changes but also the meaning of words. The perception of words becomes different because you write-talk and you thereby also transfer context.

Another reflection made by one of the respondents in the Pre-study was that one of the problems with e-mail was the “directness” which is both a weakness and a strength. “E-mail encourages writing and sending both when one is happy and when one is angry. It is easy to be seduced by the unpretentious form”, the respondent continued, “and therefore it is easy to become careless with the language. Independent of the unpretentious form it is important to formulate a message so that the recipient does not feel provoked just because it is so easy to misunderstand a message”. This respondent usually read through the text once again to make certain that the content of the message was correct before sending it. Anyway, misunderstandings occur and even if one asks oneself if a certain message can be misunderstood and tries hard not to make this happen, some messages will be misunderstood. “It is unavoidable”, the respondent said.

5.2.5 Parallelism
Parallelism according to Dennis and Valacich (1999) refers to the number of possible simultaneous and effective conversations that might go on at the same time. E-mail is categorized as a medium with low-medium parallelism (Dennis & Valacich 1999) because it is only possible to have one effective conversation going on at the same time.

However, if accepting a small delay in the message exchange it is possible to have many conversations going on at the same time that are also effective. The asynchronous character of e-mail makes it possible to have this kind of conversation going on and I think that this it one of the main reasons why e-mail has become such an important working tool. If Dennis and Valcich’s definition is changed into “the number of effective conversation that might be going on at the same time” parallelism is a very common e-mail phenomenon. Sometimes this might cause problems, as have been discussed earlier, when so-called circulating and repeating communication is too frequent.
5.2.6 Rehearsability

Rehearsability refers to ability of the sender to go back to the message and, if needed, re-write it before sending it (Dennis & Valacich 1999). The possibility of using this feature is very high in e-mail communication, but the question is if it is very commonly used, because most users have a tendency just to write the message and send it. However, this might be more common in intra organizational e-mail use. When it comes to more external, business related e-mail communications there is a need for more well thought out content and rehearsability is an important capability.

When studying ideas about best practice of e-mail (See 4.5) one of the items was that it is important to exercise reasonable editorship and be reasonably concerned about proper punctuation. Dennis and Valcich emphasized the possibility of fine tuning a message and this is, of course, also possible when it comes to e-mail. Several respondents in the empirical part discussed the importance of trying to make a message as clear as possible, and the choice of “wrong” words was one of the most frequent reason why the respondents in Study 3 regretted sent messages, and was also the most frequent reason why e-mail might upset someone. A more common use of the feature rehearsability would probably enhance the chance that our e-mail messages will be more in accordance with our intentions.

5.2.7 Copying/FWD

One e-mail feature that is advantageous for organizational e-mail communication is that is possible to attach files in different formats. The respondents in Study 2 and 3 mentioned this possibility as one of the advantages. However, Harrison (2006) has examined varied trouble sources in e-mail behavior and one example of unethical behavior is forwarding e-mail without the author's sanction. Romm and Pliskin (1999) were studying managers' abuse of e-mail and one of the possible examples was forwarding; the recipient may even modify the content and then forward it to others.

The possibility of forwarding e-mail or copy text without restrictions also makes communication easier but it is important not to violate normative expectations. For example: Text in forwarded letters might be changed and when doing so it is important not to forward some sentences out of context. It is not always acceptable to forward e-mail without permission from the original sender. In study 1 several examples were reported where forwarded e-mail had caused problems as well on an individual as on an organizational level. Forwarding e-mail does not necessarily have to cause any negative effects but sometimes it does.
A typical advice is that “You are not supposed to write anything in a message that you don’t want to see on the first page of a newspaper”. This is not to assure that there will be no misunderstandings but to prevent someone from sending a message that is not well thought-out to a broader public than was intended. When forwarding e-mail it is a good rule to begin by declaring why it is forwarded.

5.2.8 Possible quantity of information
The possible (large) quantity of information that e-mail users are able to share is an important feature. Distribution of information is vital in all organizations. Intranets, however, can be used as document management systems so that an e-mail only needs to refer to a document’s location. Although the need for attachments goes down, the amount of information does not, if people actually go to the document repository to read the information. In the Pre-study it was found that e-mail should not be used when the information is vague, abstract, or unclear, very important, has a threatening content, is hard to read or if it is very extensive. Some respondents in Study 2 and 3 also thought that the quantity of e-mail could become a problem because it creates an information overload that can prevent really important information from getting through.

Electronic communication also gives rise to filing problems because there are, in most organizations, no explicit rules on how to manage e-mail (Computer Sweden 2007). One respondent in the Pre-study considered this absence of rules as an obstacle because it influenced the workload negatively. Lack of rules ensures that the necessary documentation is not filed correctly. Sometimes one keeps the file in the computer and sometimes one keeps a clean copy in a folder, and this creates stress, the respondent clarified. Volvo Cars (2006) has decided to restrict the use of e-mail as a filing system. In the company’s e-mail directive they explicitly state that e-mail is not meant for indefinite storage of information and documents.

Consequently, it is possible to send large amounts of information via e-mail. The problems are that we are not able to cope with too large quantities because it makes us feel overwhelmed by information, and it also causes organizational problems because e-mail has become not only a system for communication but also a system for filing and storing.

5.2.9 Reprocessability/Volatility/Permanence
Reprocessability is the extent to which a message can be processed again and this feature is high in e-mail communication (Dennis & Valacich 1999). To be able to go back to earlier e-mail exchanges is considered a very important feature. Although it is possible to save all incoming and outgoing e-mail it is not
always an advantage especially not if all incoming e-mails are kept in the in-box. One reason why people might experience information overload could be a huge inbox with a mix of read and unread e-mails. Reprocessability and volatility/permanence are rather close but are discussed from different angles.

Different media have differences in volatility and depending on the medium chosen the information is more or less permanent according to Shapiro and Anderson (1985). Another word for the same feature is the perceived ephemerality of messages used by Sproull and Kiesler (1991). Ephemerality has to do with the absence of tangible artifacts because all it takes to send a message is to write it and push a button, and Sproull and Kiesler have drawn the conclusion that this will influence the senders negatively and make them less committed to what is written.

E-mail is perceived as volatile but this is not the case because it might “reside indefinitely on a disk file, being backed up, printed and filed, altered, forwarded to third parties and printed copies of the message may be copied and distributed” (Shapiro & Anderson 1985:12). This misleading feeling of e-mail as a medium of volatility also makes it important not to write anything inappropriate because the sender never has control over who will eventually get the information, and when. Deleting e-mail is not the same as destroying all copies of it, because once sent it would probably be stored on a server somewhere, maybe indefinitely.

5.2.10 Distribution costs and time costs

According to Sproull and Kiesler (1991) there are several e-mail features that speed up the information and communication flow inside and between organizations making it possible to save time and money. Compared to ordinary postal service, e-mail makes it possible to reach anyone and everywhere in seconds. E-mail is easy and not expensive to use. Sending e-mail is nearly without costs except for the time that the sender has to put into the process of sending e-mail. The typical process of writing e-mail is a matter of realizing the need to send a message, deciding to whom to send it, writing the message, in the best of worlds also proofreading it and then pushing the send button. Depending on the message content and the implicit and explicit ideas about what e-mail is supposed to be used for, the time needed for this process will vary.

On the receiving side there are also time costs because e-mail is supposed to be opened, read and proper action taken. Depending on several factors the time costs on the recipient’s side will vary. In Study 3 some respondents found e-mail very time-consuming because of the need to sort out irrelevant information. Eight respondents considered e-mail as timesaving mainly because it is easy to send messages to individuals and groups. Those who have a positive
attitude to e-mail stated this in other words like “E-mail has made my work efficient”, “It is much easier to come to a decision nowadays.” and “E-mail saves a lot of walking around trying to get in touch with people who sometimes are hard to find”. One respondent found that if there is no time to make a phone call e-mail is very time saving because one is able to do something else while waiting for an answer to an inquiry.

Whether the respondents in Study 2 thought that e-mail was time-consuming or timesaving is not evident. Earlier it was mentioned that some respondents found e-mail an excellent working tool that at the same time is time-consuming. Individuals’ perceptions of available time are an interesting and also a critical issue. Ten respondents in Study 3 found that e-mail split their time, six respondents found e-mail time-consuming, and two respondents found that dealing with incoming e-mails took time that they did not have. However, it is reasonable to reflect on the respondents' general work load in order to decide whether it is e-mail by itself that creates the feeling that e-mail is time-consuming or not.

Reasonably, though, some of the examples of miscommunication mentioned in the first parts of this chapter must also be a matter of consuming time. All strong feelings like being angry or stressed take energy from the individual and thereby time. Furthermore, the time spent to manage e-mail must be kept to a reasonable level not to force people to spend a lot of time just trying to figure out how to manage received e-mails. If the time to manage e-mail increases more than is shown in this work it will be a setback for organizational e-mail use.

5.3 E-mail's effect on working life

5.3.1 E-mail the medium of choice

New technology, according to Sproull and Kiessler (1991), changes people's attention to new things, which affect people's awareness, choices and the way they interact and behave. It also takes a while for people to recognize these changing patterns and come to a consensus about the best patterns of behavior and thinking. Effects on the second-level system (Sproull & Kiessler 1991), i.e. the social system, are often important for organizations. In the empirical part of this thesis the respondents discussed both examples of changes in the social and organizational system and also the probable effects on the first-level system, i.e. efficiency effects. Second-level effects are a construction of people interacting with technology and affect the technology design. The social environment or the organizational context influences this construction.
E-mail is a convenient communication medium because of its asynchronous character that creates flexibility for both the sender and the recipient. All organizations are dependent on disseminating information and e-mail offers an effective means to do so. In the empirical studies in this thesis the respondents mentioned a number of important tasks that e-mail facilitates. They stressed the importance of e-mail to establish and maintain international contacts as well as for in-house communication. To be able to send short and fast messages was regarded as a possible anti-stress factor because of the knowledge that those concerned have access to the information. E-mail makes “plainness” possible, because the informal language used in e-mail makes it easy to explain and understand why things happen. One respondent in the Pre-study reflected that e-mail systems invite an abrupt dialogue, which may be exploited. Everything else will be restricted, the only thing that is left is: “I think that…” The respondent continued by explaining that it is sometimes a good idea to lay bare a question and this has nothing to do with what is called flaming but is only a form of communication where one question is isolated and therefore everything else is set aside. Furthermore, the respondent said, like in most communication situations it is important to separate the question and the context and to understand when e-mail is the right communication medium and when it is not suitable. Other respondents thought that e-mail gave flexibility and freedom, saved time and satisfied the demands for written documentation.

In 1991 Sproull and Kiesler found a very high correlation between the use of e-mail and the productivity of the group and this increased productivity was obtained without an increased information flow, but with a different flow. However, in 2004 Volvo Cars Corporation found that e-mail was a problem that had negative consequences for work satisfaction and productivity. Sproull and Kiesler stated that one prerequisite to increased productivity is that the manager knows how to benefit from e-mail in group tasks. E-mail cannot compensate for lack of face-to-face communication because in parts of the group process it is important to meet face-to-face, for example when a group starts or when there is a need to negotiate or solve problems.

E-mail has become the medium of choice, which the empirical study confirmed. Lusk (2005) explained that e-mail outperforms telephone, face-to-face, facsimile and letter communications in terms of efficiency, convenience, preference, frequency and importance. Another way of telling that e-mail has become the medium of choice is expressed by one of the respondent in Study 3: “E-mail has become a norm since everyone is supposed to use it.” E-mail has become a norm probably because of its advantages. Most people today have problems even thinking that they are able to manage their work, and private life, without access to e-mail.
E-mail might simplify the decision process because of its advantages but it is also easy to send e-mail without thinking, and it is not a rule that more information means better information. However, e-mail may also delay a decision process if a discussion becomes circulating and repeating as has been discussed earlier, where also some respondents mentioned influence on decision quality. Sending e-mail to a large group of people is easy from the sender's point of view but it takes time to deal with the information by those who are on the recipient list. Representatives of the first-level efficiency system often think that information delivered by traditional means or by different electronic communication means is perceived in the same way, but this is not true (Sproull & Kiesler 1991) since the medium chosen also influences the recipients and their idea about the meaning of the message.

In a familiar communication situation we have norms or conventions telling us how to behave. Sproull and Kiesler (1991) emphasized that it is important to understand that if technology creates new social situations old norms will lose their power. Electronic communication involves fewer communication cues than face-to-face communication and shared experiences may not be relevant (Sproull & Kiesler 1991).

Sometimes when it is hard to communicate because a strong emotional response is expected, one respondent in the Pre-study said, one chooses e-mail consciously or unconsciously just because it is hard to communicate. “E-mail makes it possible to ignore an emotional dimension, and it is possible that I have chosen e-mail because of this reason but without being aware of this”, the respondent continued, “and it is hard to say what communication medium is right and wrong, because it also depends on the recipient.” This relates to the discussion about asymmetrical balance in electronic communication (See 3.1.5).

One reflection made by one of the respondents in the Pre-study was that one is supposed to be able to use e-mail in most cases, but as in all forms of social intercourse it is important to behave like a “grown-up”. Being grown-up means to think before acting and to realize that certain topics are not suitable to communicate through e-mail. One of the respondents in the Pre-study, though, made a reflection showing a deep awareness of the problem:

In fact it is important to have the ability to enter into somebody else's mind so that you can understand the recipient and I think that this is the largest problem. The producer of e-mail must have the ability to understand the recipient in order to write messages that can be understood by the recipients.
Experience and knowledge also help us understand the advantages and disadvantages different media have. The headline of this part is “E-mail the medium of choice” which implies that we probably do not reflect on if e-mail is the best choice, only that it is the first choice.

5.3.2 Whose need?

Most organizations have introduced e-mail at the present time. In 1995 Palme stated that the introduction of e-mail in an organizational setting might cause problems if the need for electronic communication is not a result of the users’ needs. Because e-mail has become an obvious working tool today nobody asks the employees if e-mail is fulfilling a need for electronic communication. It is possible that the need for electronic communication has changed since 1995 when the introduction of e-mail started in most organizations. Palme also discussed the importance of the value of a communication system, which is dependent on how large the critical mass is (Markus 1990), as have been discussed in 3.2.5.

The critical mass theory gives an explanation for the diffusion of interactive media and thereby e-mail. If one characteristic of an interactive medium is its widespread use, it is impossible to prevent individuals from enjoying it (Markus 1987). Another characteristic has to do with the reciprocal interdependence between users that interactive media entail. Today we have indeed reached a critical mass of e-mail users, but there is also a debate about whether we have reached beyond the critical use of e-mail. Markus explained why interactive media get such a widespread use by stating that we cannot choose not to use it and this creates interdependence between the users. I will add that there are also interdependencies between the users and their computers and networks.

Volvo Cars Corporation established that e-mail has become a problem and decided to restrict the use of e-mail by formulating nine directives to help all employees to achieve a more positive work situation and also to increase productivity (See also Brady 2006). In the empirical study of this thesis I found that e-mail is an important working tool but also that it is associated with different kinds of problems. If e-mail tends to reduce face-to-face communication and isolate the individual, the volume of information can overwhelm the individual and thereby narrow his outlook and the speed of transmission could create unnecessary feelings of urgency. On account of this, e-mail use might be far from satisfying the user’s need of a communication tool in organizational contexts.

All it takes to read and send e-mail is to have access to a computer, a network and to touch a button. There are no physical signs of a heavy workload
like piles of papers, physical filing cabinets or crammed bookshelves. Nowadays it is impossible to know if someone is too busy or not. If you are walking around in an office you will probably find many employees sitting in front of their computer screens reading and writing e-mail. Some days the e-mail server is out of order and you will instead find people walking around talking face-to-face. If you ask someone that belongs to the younger generation how they would perform their tasks if they did not have access to e-mail the answer is often a very skeptical: “That’s impossible”. People that are used to e-mail cannot even think that it is possible to work without it and this is probably in accordance with reality today. One respondent in Study 3 reflected about the need for electronic communication:

I always use e-mail. Being without e-mail we would quickly be forced to find an alternative (and probably something similar to e-mail) which means to be able to have fast digital information exchange. Because I have had access to e-mail during my entire working life it is hard to imagine how organizations worked before e-mail came (but I guess that they worked slowly and that lots of faxes were sent).

Consequently we cannot decide visually whether a co-worker has a heavy workload or not, but in general we (all e-mail users) have usually come to the conclusion that e-mail is important for achieving different tasks and also to keep both our task related and socially related communications going. Earlier in this chapter I divided e-mail overload into two categories: (1) Expectations overload and (2) information overload. These categorizations emanate partly from the empirical findings in this thesis, and partly from the theoretical framework presented earlier. Both expectation and information overload have two sides. The first side has to do with how we manage outgoing e-mail, because this will affect other users, while the other side has to do with how we manage incoming e-mails. We are only one user who is sending or receiving e-mails within a larger group. Without this critical mass (Markus 1990) of e-mail users, e-mail would not be the first choice for a communication medium. What we think, do or do not will affect the e-mail climate and strengthen or weaken the good or bad aspects of e-mail use. In other words, we are not e-mail users working in a vacuum but an important part of a large group of people.

Ducheneaut and Bellotti (2001) found that e-mail is used for a wide range of tasks and has become not only an application but also a habitat. Becoming a habitat e-mail is used to manage a variety of tasks, more than what e-mail was originally meant to support. This has resulted in an overuse of e-mail today (Jansson 2005) and Hallowell (1999) thought that overuse of e-mail as a cause of misunderstanding leads to an impersonal and less humane environment.
E-mail has obviously created a dependence on well functioning computers and networks as well as personal access to a computer. Some respondents in Study 2 and 3 used the word “dependent” but the Swedish word for “dependent” means both dependent on and addicted to. A fixed boundary between dependence and addiction may be hard to establish but it is probably a matter of personal attitudes. Another problem is some people’s inner need to check incoming e-mail several times a day, interrupting other work tasks.

Overdependence on e-mail use was identified in both Study 2 and 3. E-mail has become one of the most important working tools according to the participants in the focus groups. Earlier the telephone had been the most important working tool but nowadays it was optional because it required more time to get the information needed to achieve a certain task. Some participants in the focus groups in Study 2 found that e-mail controlled work most when the workload was high, and that sometimes when they lacked energy to prioritize it was convenient to let incoming e-mail control what was to be done. This might be compared with Russel et al’s (2007) findings that e-mail interruptions are welcome when someone is bored.

A couple of respondents in Study 3 declared clearly that they were dependent on the computer (and e-mail) but mostly the respondents used another way of experiencing some kind of dependence. To establish firm limits between overdependence, dependence and expectations overload is not possible since it depends on the way the user looks upon e-mail and its role in the organization. For example a need to be constantly updated, something that sixteen respondents mentioned, has probably more to do with dependence than overdependence on e-mail, and can be a cause of expectations overload coming both from people in the user’s surrounding and/or from an inner need of having control over his working conditions. Three respondents also mentioned that e-mail traffic had a tendency to take control over the individuals. That one was supposed always to be accessible was a call by five respondents. Whether this is a manifestation of overdependence or dependence is hard to know.

Accessibility has thus strikingly increased and “This accessibility makes working life spin faster today than it did earlier”, somebody said, “and one thinks that one has to be involved in everything which may be harmful because one lacks time to reflect and achieve a balance”. One reason that one always is accessible may have to do with having control, somebody reflected, and those who are not driven by a feeling of control can maybe handle e-mail in a more relaxed way. “If you do not check your e-mail everyday it may be compared to losing your diary”, was another reflection. Ten respondents commented that always being accessible means splitting one’s time, and therefore one’s focus may get lost. This discussion might be compared to Hair et al’s (2007) findings.
that depending on orientation, relaxed, driven or stressed, towards email the individuals' feelings of stress will vary, and also to Thomas et al's (2006) findings that there are an assumption from the senders' side that the recipients always are online.

5.3.3 Sender's and recipient's action

Earlier this thesis brought up the fact that email overload to a high degree depends on peer misuse of email according to Dawley and William (2003). The thesis then commented that even if email overload to a high degree is a matter of peer misuse, everyone is a peer in relation to somebody else, and therefore it is important not to transfer the problems to the environment, entirely. Analyzing the material in Study 2 and 3 one can see that most respondents made reflections from the recipients' point of view mainly because incoming emails are outside the recipients' control unlike those that are sent. Also the advice in Study 4 mainly focused on the senders' action. This supports Dawley and William's opinion that email overload to a large extent depends on peer misuse and it indicates that it is easier to consider any email problems as caused by somebody else. But when studying email overload it is important to focus both on the senders' as well as the recipients' attitudes to email use. Maybe it is possible to say that feelings of stress are mainly a problem from the recipients' point of view, because nobody else than the individual email user can decide whether email is going to be a cause of stress or not.

Dabish et al (2005) assumed that recipients' message actions depended on message characteristics such as importance, relationship to sender, content, etc., and that it may be predicted. Some people, according to Dabish et al, rated incoming email as more important on average than others. The respondents looked upon messages with fewer recipients to be more important and were more likely to respond to them. Earlier communication with the sender and an existing working relationship also increased the importance of the message but did not necessarily generate a reply maybe because this kind of message may have become routine. Dabish et al found that the respondent's identity explains most of the variance in where the messages end up but when it came to reply action they found that the perceived importance of the message was only one of the influencing factors determining whether the recipient acted by sending a reply.

It is more or less impossible to predict the action of the recipients because the recipients have their own priorities according to Dabish et al. A stressful work environment might also make prioritizing a problem. Burgoon et al (1994) drew attention to the fact that the recipient, like the sender, has an active role in all communication processes and that the recipient plays a vital role in
deciding whether to pay the sender and the message attention or not, and that attention and perception are key concepts whenever discussing work related matters where information distribution is an important part. One respondent in the Pre-study said: “The degree of urgency is determined by who the sender is and if I need something in return”.

Each member of the organization must choose the information that they attend to, not to be overwhelmed by too much information. This may cause a problem while the individuals need to keep up to date on a broad range of issues – sometimes conflicting – and this will sometimes give raise to a discrepancy between the subjective need for information and the available information. Another gap, common in many organizations, is when those responsible for the top-down flow of information try to inform, but the information does not “reach” the recipients. Reasons for why information does not reach the recipients are not due to technological shortcomings but are in most cases a matter of the recipients' perceptions of information overload.

Depending on the individuals' need for flexibility in time and space, integration between work and leisure time might be a cause of stress. This potential problem might be a reality because of the widespread access to broadband in more or less every household in Sweden today. The widespread access to broadband is of course not the reason why people tend to mix work time and leisure time, but a fast connection to Internet facilitates internal and external needs to keep control of the e-mail flow.

The limitations between work and leisure time have a tendency to be loosened and will probably become even more accentuated in the future, one respondent in the Pre-study said. This has become a reality as confirmed in Study 2 and 3. It is also common to check e-mail inboxes from home when on leave of absence to prevent a feeling of stress when coming back to work. One respondent in Study 3 stated: “When coming back from vacation the volume of e-mail is large, this is stressful both depending on the volume but also because it is easy to miss important information.” Another respondent commented: “If I have been at home for one day, I hardly dare open the e-mail the day after because I know that I will be busy answering incoming messages for half of the rest of the day.” A third respondent thought that: “When you are sick you know that the pile of e-mail is growing and this is something of a burden when you need something positive instead.”

One reason that it is hard not to check e-mail before coming to work might be that e-mail has become such an important working tool. Because it is an important working tool, one knows that if something important has happened one will find out about it in ones’ e-mail, and therefore it will relieve some of the feelings of stress to check in advance and thereby become more informed the
first day after an absence. Overdependence on e-mail has been discussed earlier and this is probably also one reason that e-mail has become such an important working tool.

Another explanation is that e-mail users communicate through a computer and it does not matter where this communication artifact physically is placed. Reading and writing e-mail is a solitary action independent of if one is sitting in the office or at home, and because it is a solitary action it is easy to perform from home. In many cases working from home might be easier because one gets more time to think without interruptions, and this may be another reason why people tend to take care of incoming e-mail when absent from work. Some respondents in Study 3 asked for an increased understanding of the need of time to think and reflect, and this need is maybe one reason why the limit between work and leisure time is becoming more and more blurred.

Twenty-three respondents in Study 3 and the participants in the focus groups mentioned the problem of e-mail building up during absences. Pearlson and Saunders (2006) saw potential problems because of increased stress from the inability to separate work life from home life. This problem was not a potential problem but a reality, at least for some respondents, in the empirical material in this study. Although e-mail will build up during absences there are alternative explanation why being absent has become a problem for many employees. Today’s organizations try to run very lean so there is seldom a back up for anyone for anything, whether someone is sick or on vacation. It is not only e-mail that backs up but just about everything else each person is responsible for.

Work has become more of a solitary activity because one is in general spending more and more time in front of the computer. It is interesting to consider that computers have made us both more flexible and more sedentary (sitting still, lack of physical activity). Whether we have became more flexible or not are of course a matter of how we carried out work tasks before computers became a natural working tool, but are of course also a matter of attitudes towards the use of computers and e-mail to accomplish work tasks. One respondent reflected: “Earlier I was able to perform my tasks everywhere, now I have to spend more time at the computer.” Another respondent stated: “I have much more sedentary work nowadays, less of management-by-walking around.”

Other important conclusions are that personal contact has decreased according to 22 respondents in Study 3, and that some respondents are more sedentary today than earlier (9 respondents). If personal contact decreases what will then happen, one respondent in Study 3 asked. Do computers increase or decrease interpersonal contact in the long run, is another question raised. To only communicate through e-mail with colleagues sitting next door is probably
not a good idea in the long run, although it helps us solve routine tasks without demanding too much attention from the recipient. Sitting too much in front of the computers might also have negative physical effects if we are not aware of our need for physical activity and good physical working conditions.

People more and more use e-mail to communicate instead of coming by and talk, was one reflection in Study 3. One respondent commented: “I’m sitting more in front of the computer answering e-mails than I am present in the operational work area.” Another respondent asked what will happen if we stop talking to each other and one answer may be found in the following quotation: “At my former job we stopped talking to each other, we sent e-mail instead. That was the beginning of a bad atmosphere. You cannot imagine all the gossip that was flowing around.” Some respondents in Study 3 commented that they had lost and miss the personal contact that adds zest during workdays. Somebody asked if computers increase or decrease interpersonal communication, observing the development in her department where people choose to send e-mails to colleagues sitting next door. “You send e-mail instead of talking to people in person and this makes things become impersonal.” One respondent summarized her point of view about how e-mail has affected work: “Information is more accessible to more people. At the same time, we don’t talk to each other as much as we need to get a functioning communication. We have lost the fine signals in the atmosphere that body language presents in face-to-face communication.”

On the other hand, e-mail offers flexibility in time and space and it is possible to have both an informal and formal contact with people we otherwise would not be able to stay in touch with. Sending e-mail to a colleague sitting next door could however be a good idea because it requires less attention from the recipient, since he might attend to the message when he thinks it is most appropriate. It is vital to understand when e-mail might help us achieve our goals and always sending e-mail or never sending e-mail will probably lead to poor personal information management, likewise answering all incoming e-mail or none.

Spending two hours or more a day on e-mail, like the managers in Bircall’s study did, might be compared to the time spent earlier, before e-mail became the medium of choice, on the telephone. The question, though, is if e-mail is a more efficient communication tool or at least as effective as the telephone. Of course, in personal communication we get more information and not only through body language, etc., but also because in a personal meeting (or on the telephone) other issues will come up because a conversation between two people usually leads to associations that in turn lead to other matters. E-mail is usually more direct, we answer the questions asked and that is it.
5.3.4 Organizational control and privacy

Privacy is one of the most discussed ethical and social issues in information and computer technology (See for example Duane & Finnegan 2007). However, I have no intention to discuss this issue more than briefly in this thesis.

E-mail sent from an organization's e-mail server is usually regarded as coming from some employee. It is rather obvious, from my point of view, that it important to realize that it is possible to monitor all e-mail sent from and received by a work e-mail address. Berghel (1997:14) looked upon this question with great concern since it is a “[…] challenge to find a balance between an organization's need to control its workforce and the individual's right to privacy.” According to Berghel this is not a technological challenge but it may have serious social costs, and he asked what makes e-mail different from other communication means that makes it possible to intrude on individuals' right to privacy. Berghel stated that the reason is that e-mail is more persistent than telephone and that an e-mail account is like a desk drawer. Privacy is one basic keystone for the protection of the individual's freedom and autonomy and it is important that personal information is not distributed to other parties without permission. On the other hand, the individual's right must be related to the corporation's rights to its information property. Spinello (1996) discussed e-mail privacy as a very controversial issue. E-mail is easy to use and an employee may send lots of message that are all archived, and therefore obtainable by anyone who has the authority and technical knowledge to do so. The question raised here is: Are these messages organizational property or private? The question is not easy to answer and the debate offers arguments for both alternatives.

Monitoring employees' e-mail is a form of control that has to be both restricted and explicit to prevent problems. Volvo Cars directives do not forbid personal use of e-mail but restrict it by stating: “Principles for personal and private use: The services are provided for personal, not private use. […] Private use is when the services are used for non-work-related matters. The private use of these services must be kept to a minimum.” Svenska Spel does also restrict the personal use of company e-mail by proclaiming:

**E-mail – via Internet and internal**

The e-mail system is the property of Svenska Spel and all message copies that are created, sent, received or stored on the system are the property of the company. Svenska Spel has the right to unlimited access even to “private” messages, however only when there are special motivations (i.e. if suspicions about offence to this policy exist). To protect individual integrity this will be done under controlled forms and after approval from both
the personnel manager and the safety manager. When a message is sent through the Internet, be aware that Svenska Spel is the sender. Messages that might be experienced as insulting or abusing are not to be sent, either internally or externally.

There is another form of control described by Brigham and Corbett (1997). One respondent in Brigham and Corbett's survey said that invisible monitoring was facilitated by e-mail. The e-mail system made his job a lot easier because it is possible to check if the recipient has received and opened a message. If the recipient has not, one can contact him or her and ask why. The respondent also stated that it is impossible to ignore e-mail anymore. On the other hand there were other views saying that the respondents may feel less in control of their work, feeling monitored, intruded on and inundated with e-mail messages. Brigham and Corbett (1997:33) concluded that e-mail is not solely a medium for communication but also an agent of organizational power. E-mail offers a technological frame that "shapes their values and conceptions of social reality."

5.4 Summary of Chapter 5

E-mail miscommunication was defined in the beginning of this chapter as: "Everything that prevents or makes it difficult for us, as actors in the organization, to create and regulate our common social reality to achieve desirable goals". I also stated that miscommunication in organizations' e-mail use will have negative effects on working conditions. After having gone through several examples of possible negative aspects in e-mail communication it is reasonable to assume that if these examples are a reality in an organization they will not only have an effect on working conditions but also on productivity.

The list of what could be defined as organizational miscommunication is rather extensive and it is possible to categorize it one step further. Categorization might be done on the basis of seriousness, considering consequences or how frequent certain types of negative aspects are. Another categorization would be based on the motives of the communicating actors i.e. if miscommunication is intentional or unintentional. Some of the causes of miscommunication has nothing to do with the content of the message, or the senders' or recipients' actions but is something that is embedded in the features of e-mail, and also in the general information flow in today's work life.

The special features of e-mail are the reason why e-mail has become the medium of choice in numerous organizations. The most important reason for the success of e-mail as a working tool is probably that e-mail makes asynchronous communication possible, it is easy to use both practically and when it comes to the use of an informal "oral" language and that it seems to be without
high costs. The problem is that the same features that make e-mail an efficient communication tools also, sometimes, cause problems in organizations.

Old communication norms are not always suitable when using a new medium, but people tend to adapt to new ways of communicating rather fast, but it is vital to use e-mail from a winner's perceptive. As e-mail user it is important to realize that there are an asymmetrical balance in e-mail communication between sender and recipient. E-mail satisfies both organizational and individual needs of a communicating tool although it is not without problem like it is hard to foresee the recipients reaction, that work life and home life has a tendency to be mixed up, and that e-mail overload seems to be a problem at least to some groups of employees.
6 Conclusions and recommendations

This last chapter will contribute to the discussion about how to behave and think in order to use e-mail in an optimal way and thereby fulfill the purpose of this thesis. If we accept that e-mail is both a powerful working tool and something that might cause miscommunication it is vital to act, as organizations and individuals in organizations, so that e-mail becomes more of an effective working tool. This thesis has proceeded from the understanding that our individual perceptions of reality is a social construct, and with this in mind e-mail will not influence our working conditions negatively unless we, as members of different organizations, let it do so. Or as Rogerson (2004) stated: “Information and communication technology is really about people not technology. It is a social construct. How people behave in developing and using the technology makes the difference in realizing a society that is good for us all.”

To give a complete list of countermeasures against possible organizational e-mail miscommunication is more or less impossible, since causes of e-mail miscommunication arise from different areas of human and organizational behavior, situation and contexts. Ideally, a systematic methodology to prevent or reduce e-mail miscommunication would help but because of the variety of causes of e-mail miscommunication it is far beyond this work to recommend such a methodology. That organizational communication is a very important issue is without doubt. Weick (1995) had a far-reaching view of the purpose of organizational communication because he stated that if communication ceases the organization would disappear. One reason for organizational malfunction might consequently be a result of confused, irrelevant or inappropriate communication.

However, some countermeasures to address negative aspects of e-mail miscommunication will be found in this concluding chapter, ranging from gen-
eral suggestions to very specific advice. While working on this thesis lots of contradictions in organizational e-mail usage were found, since there are variations in earlier research findings and also a variety of views among the respondents in this work's empirical part. It is of course rather obvious that a medium for communication that is regarded as a killer application (Weber 2004) or even a serial-killer application (Ducheneaut & Bellotti 2001) has a major impact on the user and it would be very strange if all users came to same conclusion about what is good and what is bad in e-mail communication.

I have highlighted several aspects of e-mail that may cause miscommunication, but I am also convinced that organizational e-mail use is also important in many ways. One problem is that it is easy to look at e-mail from our own point of view and forget that we are never alone in electronic communication. Someone will be reading what we have written, and this person will try to make sense of our message. Depending on a wide range of reasons our messages will be interpreted more or less according to our intentions.

I am convinced that we do need something like e-mail to be able to communicate while conducting our work everywhere without being in the same physical environment all the time. Because users' view of e-mail use is not a matter of black or white but more of a grey zone, in the next parts I will discuss some of the core findings of this study why organizational e-mail use might have some possible negative outcomes in organizations.

6.1 Organizational e-mail use and communication competence

Today there are several means to create successful organizational communications, but organizations tend to rely on e-mail to a large extent because of its special features discussed earlier. If organizational e-mail communication is supposed to integrate, organize and help members in organizations it is necessary to take the special features of e-mail into consideration to avoid the kinds of miscommunication that have been discussed in this work. Furthermore if it is communication that constitutes the organization it is important to use e-mail in a way that moves the organization in the right and desirable direction. This could be done either by increased knowledge, both about communications in general as well as about the e-mail software used, among members in the organization and/or by defined explicit e-mail rules that cover the most important e-mail issues.

In the empirical study of this thesis six organizations' e-mail communications were the main objects and a number of problems have been accounted for. Only one organization had explicit rules for e-mail use and another had a short
policy explaining which medium is supposed to be used for which target group. On the other hand explicit rules have a tendency of being read once and afterwards being forgotten.

Human communication is a complex matter but also something that we are all familiar with, as we have communicated since we were born. This combination of complexity and familiarity is a challenge when studying communication competence in e-mail communication. I assume that miscommunication ought to be the result of insufficient communication competence. It is also important to realize that communication competence changes over time because we will alter, more or less, our perceptions, attitudes, beliefs and motivation in any communicative act (Berghel 1997). Communication processes in a sense-making perspective accentuate the fact that we as humans need to understand what is going on in our surroundings.

If we do not understand what is happening there will be a gap that we try to fill in with more information. One problem in organizational information flows is that there is abundant access to information, but this will not secure our need of sensemaking, probably because the available information may be the wrong kind of information. Another problem in electronic communication was discussed by Kock (2005), who considered that in the absence of information-giving stimuli we have a tendency to fill in what is missing and sometimes this will lead to a higher proportion of misinterpretations and communication ambiguity. Berghel (1997) stated that there is an uncertainty in all communication contexts about the effect of a message, because the sender is usually rather unaware of the multiple outcomes that a message might have on those who receive it. Because of this uncertainty the outcomes may be both desirable and undesirable. Reducing this uncertainty will create an increased communication competence both on the individual and the organizational level. Scott (1977) found that it is important to be aware of our own intentions while communicating because this helps us understand our own and others' behavior.

To be aware of other people we need visual cues and in virtual communications, like e-mail, these signals are limited which might be part of the explanation why e-mail can be a medium for miscommunication. When communicating in workplaces we have a need for information as well as for functional and emotional relationships (Panko & Kinney 1995). Since the sender is usually unaware of the multiple outcomes that a message might have on those who receive them, and since neither the sender nor the recipient has any visual cues to guide them in e-mail communication it is important for both of them to realize what they are trying to achieve and for them to be aware of the limitations of e-mail.
To be seen as having communication competence is something that we all strive for, and to be a competent communicator we need to understand the balance between effectiveness and appropriateness. It is hard to find explicit recommendations in the scholarly literature although the need for communication competence is acknowledged. One feature of e-mail is that it is easy to be very direct, to send a very restricted message. E-mail’s directness can be used to give less room for misunderstanding, but Dainton and Zelley (2005) stated that being too direct might cause other problems because there are different ideas about directness in different cultural contexts and among different individuals. Dainton and Zelley give one recommendation and that is, if one wants to achieve one's own goal it is necessary to take others' goals into consideration. Communicative competence has furthermore to do with adequate behavior in a certain context or process, and not the actual outcome (Spitzberg & Dillard 2001). Although there are few scholarly findings about how to increase communication competence, Trenholm and Jensen (2004) found that an effective communicator needs a set of five competencies (See 3.4.8). To be able to communicate effective messages we need all five competences, but incompetence in communication is very common and our relationships with others are full of errors according to Spitzberg (1994).

Is it possible to use e-mail in organizations to increase communication competence? I think this is possible, and the empirical findings in this thesis point to the fact that it is both necessary and also requested. E-mail is an important working tool and therefore it is desirable to use it in a manner that makes it an even more efficient communication tool.

### 6.1.1 E-mail an important working tool but not always used efficiently

In general, I think that most people consider e-mail communication as an asset, but that we also realize that we do not always use e-mail in the most efficient way to achieve organizational goals and a satisfying work environment. We are also, in general, well aware that new media have changed the way we communicate, but our understanding of how these changes have influenced efficiency and work environments is not always clear.

One phenomenon that seems to cause problems in e-mail communication is the expectation of continuous communication. Because e-mail makes it possible to inform and communicate constantly, managers fulfill this expectation and employees may receive much more information than they actually need. Or they might receive irrelevant information as has been shown in the empirical part of this thesis. Sometimes there is also an expectation overload from subordinates' side of getting more information than they really need.
Not only managers will contribute to increased information distribution and increased communication attempts (Burgoon et al 1994), but also everyone that has something that they think is interesting for somebody else. The capability to inform and communicate via e-mail without limitations does not always help us perform our tasks. Sometimes the opposite is true since we suffer from information overload that makes it harder to perform our work tasks effectively.

In order to do something about unrealistic expectations by both senders and recipients about information flows we need an open discussion about desirable levels of information and communication. We also need to decide what kind of information that is supposed to be sent through e-mail, and also use other media when e-mail is not appropriate, for example an intranet where exhaustive information might end up requiring fewer e-mail resources. In Chapter 3 I presented different theories about media choice and the lesson that can be learnt from that account is that depending on what kind of tasks that are going to be solved, and under what conditions (relational, situational and contextual), there is seldom a single, best choice of medium.

One of the problems mentioned in Study 2 and 3 was the occurrence of irrelevant information. The recipient always makes the decision whether information is relevant or not. If a recipient thinks that something is irrelevant the easiest solution is to ignore it hoping that this is the correct decision. The most severe problem is that e-mail allows us to use it whenever and for whatever we think is useful, in the eyes of us as senders. Deciding whether a message is important might be one factor that can generate feelings of overload, because regardless of what action is chosen, there might be increased feelings of stress. Sometimes it is frustrating to try to both achieve personal goals in interaction and at the same time fulfill the social expectations in a certain situation.

Another problem is that attention is a scarce resource in our information rich environment. We have a tremendous capacity to attend to information but while we live in a very information rich environment it is not the amount of available information that is the problem but the ability to attend to information that helps us perform our work tasks. It is important to be aware of the necessity for members of the organization to choose the information that they pay attention to, so as not to be overwhelmed by too much information.

The possibility of fast speed in e-mail and the volume of messages may create both information overload and expectations overload. It is vital to realize that we cannot demand a fast reply, even if such a fast reply is technically possible, because it is the recipient who decides whether he or she has the time to meet the sender's expectations of a fast response. One of the problems with e-mail and response frequencies is that we have different ideas about what is im-

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important. It is for some reason easy to ignore e-mail. One reason is the earlier mentioned perceived ephemerality of e-mail (Sproull & Kiesler 1991) because all it takes to read or send a message is to touch a button. Another problem, mentioned earlier, is that some e-mail users might feel an expectation of giving fast feedback although they are too busy to do so. This expectation overload, independently of if it is in accordance with the sender's actual wishes or just a feeling of insufficiency, might cause stress.

E-mail makes it also possible to send messages back and forth without any delay giving and receiving feedforward and feedback. The function of feedforward is, as has been discussed earlier, to tell the recipient what kind of action to the e-mail the sender is expecting and why, in other words, the intention of the sender. It is a way of limiting possible interpretations and hopefully makes the communication more effective. It is rare that we use this possibility of replying quickly to e-mail; mainly because it is the possibility to communicate asynchronously that we appreciate the most. Complaints about not getting a fast reply or not even a reply at all are abundant. I think that it is rather common that if we do not act immediately, we tend not to act at all. In Study 2 and 3 the expectations of giving a fast reply was a frequent mentioned problem. I cannot tell from the results of the survey, if this expectation of giving a fast reply also resulted in giving a fast reply, but that it was an issue that caused stress and controlled work was affirmed. I think that one of the problems with expectation overload about giving feedback is that we sometimes do not know what is expected from us, maybe this could be called “information underload”.

Olaniran (2002) who discussed misunderstandings in CMC (and thereby e-mail) stated that it is the asynchronous character together with slow feedback processes that could be the problem. If feedback and feedforward are that important in all human communication and we primarily use a medium for organizational communication that makes it possible to send messages in a fast rhythm, it is not strange that we sometimes get frustrated since we usually use e-mail for asynchronous communication. It seems also that we have accepted that we are not using this feature because there is a tendency not to use e-mail if it is an urgent issue that has to be taken care of immediately. If we know that colleagues are sitting in front of their computers we sometimes send a quick note asking something and usually we get an answer, fast. Personal, but work related e-mails, tend to be answered faster than task related ones mainly because they are addressed only to the recipient and not a group (Dabish et al 2005). Information sharing and processing, and communication may be more efficient if we use feedforward and feedback more frequently. I think that e-mail could be placed rather high on Daft and Lengel's (1984; see also Dennis & Valacich 1999) media hierarchy if we only took all e-mail features into consid-
eration because they defined feedback as one of the most important features in a rich communication medium.

**6.1.2 Is e-mail the Boss?**

The headline above “Is e-mail the Boss?” might be considered somewhat provocative. However, e-mail has become the medium of choice in many organizations, if not all organizations, and of course this has consequences. E-mail makes it possible to keep track of what is happening when the e-mail user is out of the office, and as has been discussed earlier, many e-mail users prefer to reduce feelings of stress by reading and acting on e-mail when at home or on travel. Checking e-mail from home might also be a sign that work in general is an important part of our lives, and that we as human beings are curious. The important question is if this behavior is in our favor or not?

Expectations overload is problematic because it emanates implicitly both from others and ourselves. I think that to a large extent we do not discuss these feelings of expectations and therefore they are not easy to cope with. Openly voicing thoughts about e-mail expectations can give e-mail users a better balanced view of their own and their surroundings' ideas about what is reasonable and unreasonable.

One way to reduce expectations overload is to have explicit rules on what is acceptable. For example Volvo Cars (2006) stated in their E-mail directive that “E-mails must not contain a demand to reply or carry out an action within a single working day” and “Urgent requests need to be backed up by the use of other tools.” These directives manage expectations by telling the sender that e-mail should not always be the first choice because other media may be more suitable when the request is urgent.

Another aspect, if e-mail controls work, is of course the degree of information overload in the organization. Too many incoming e-mails, too much information in e-mail and a full or growing inbox was considered a problem in the empirical study. Regardless of if incoming e-mails demand action or not they need to be attended to. That the numbers of e-mails determine the number of decisions that have to be taken is in most cases rather obvious.

One question that might reveal if e-mail is the boss is one of the questions in the web survey: “How long do you need on average each day to manage your e-mail, i.e. to determine what is important or unimportant, what can wait, what can be deleted and so on?” The respondents' answers were estimates, mainly because managing e-mail is usually something that is going on during the entire workday. Looking at the respondents' estimates I realized that e-mail users do not think of e-mail use as something that is divided in different parts. Depending on the users' habits, whether the e-mail program is running the
whole day or is something that is activated when needed, e-mail will control
more or less of the workday.

Because e-mail has become the first choice in organizational settings, e-
mail must have fulfilled a need for communication that we did not have the
means to satisfy earlier. Nearly all of the respondents in this thesis realized that
it would make work very difficult not to have access to e-mail. E-mail has be-
come such an important channel for information that it is necessary to keep
one's eye on incoming e-mail independently of working or being out of the of-

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ffice. The reason for being out of the office does not have to be work related.
Checking e-mail from home was something that was done to a rather high de-
gree to avoid the stress created by the build-up of e-mail during absences.

If e-mail is such an important working tool why do we have to ask if our
messages will be read and answered, or whether they will be lost in the recipi-
cnt's in-box, postponed, or ignored entirely? Why do we sometimes feel that we
are overwhelmed by incoming e-mail? Why do we accept that inboxes are
crowded and unsorted? Why do we keep everything we get and send? Why do
we not take the time to fully understand how the e-mail program works? E-mail
is perceived as important but most users do not take the time it takes to under-
stand how to get the best out of it. Halling (2007) said that all staff at Volvo
Cars gets 5 hours of training in intra organizational e-mail directives and in the
use of e-mail programs at a cost of 37 millions SEK in the hope that this will
lead to a better work environment and higher productivity. This investment,
made by Volvo Cars, is a sign not only of the perceived importance but also of
the actual importance of e-mail as a working tool.

6.1.3 E-mail competence

To discuss e-mail competence in generic terms is not without complications
since, as I have emphasized several times in this thesis, there are more factors
than e-mail's special features or capabilities that influence its users as is shown
in Figure 8. Different organizations have of course varying communication
policies and organizational culture covering what is appropriate to write and
how to act when using e-mail. Personal relational factors are also important
because it matters who is communicating what, to whom and why. Depending
on work tasks, workload and physical circumstances e-mail use will be more or
less appropriate. Professional groups inside the organization have their own
ideas and values about how and what to communicate. Each organization has a
close network of which it is a part, as for example as vendors, buyers or com-
petitors and this will also influence ideas about communication. This network
in its turn is a part of more extensive environment and so on.
Figure 8: E-mail's effect on organizations is dependent on a number of factors.

Based on the literature review and empirical study in this thesis some conclusions about e-mail and competence were drawn which might help us become more skilled users.

**Pros and cons of different media**

Every communication medium has its own pros and cons. Depending on the task different media will contribute more or less to solve it. To be able to choose the "best" medium the users have to know how different media differ from each other, and also be able to define what kind of communication that is important for a certain task. To attain this skill a combination of knowledge, reflection and trial and error is necessary.

**E-mail features and capabilities**

Inherent in every e-mail system there are a number of features or capabilities that can be used to advantage or disadvantage. A deeper understanding of how to benefit from these features will increase e-mail competence. It is important to get and take the time to learn about the technical features in the prevailing e-
mail software used in order to use e-mail more effectively. The more each user knows about the organization's e-mail software, the better organizational e-mail utilization.

**Organizational values and beliefs**

As actors in organizations we are part of a specific organizational culture that is part of the culture in a line of business, but we are also influenced by our professional culture and the culture on a national level (Schein 2004). Organizational culture is manifested in a particular set of basic assumptions, values and norms and artifacts that have been developed by a group of people in order to attain internal integration and external adaptation. These values and beliefs guide our organizational behavior. To respect these basic assumptions, values and beliefs are important also in e-mail communication. One problem is that the fundamentals of an organizational culture usually are not explicit, and that informal influence also has an impact on what is considered appropriate. However, organizational culture will influence our communication regardless of if we use electronic means to communicate or not, and this is probably one reason why people in different organizations have different opinions about how to use e-mail in organizational settings.

**Relational aspects**

In the beginning of this part I wrote that relational aspects could be discussed on different levels, personal, position, and relationship between different organizational units. It is important to be able to identify what kind of relationships you as a user have in order to produce “correct” e-mail messages. To be too personal or too impersonal might have the same negative impact on the communication process because it might cause confusion. In all communication processes we use to adapt to what kind of relationship we have with our communicating partner, and this is also a matter of course when it comes to e-mail communication.

**Situational factors**

Depending on the situation e-mail might be a good choice. If something is very urgent or sensitive it is usually a good idea to try to tell the other person personally. If many people need to be involved e-mail will help to reach them instantaneously, but if the information needs a lot of clarifications e-mail might cause more problems than it solves. In other words, it is important to reflect on what kind of consequences that might be the result of a taken communication action in order to achieve the underlying intentions to be a competent e-mail user.
Experiences of expectation and information overload

All e-mail users might experience expectations overload but this has nothing to do with inherent e-mail features. E-mail makes it possible to be constantly online and updated, it is possible to give fast feedback, and to check e-mail inboxes from home but e-mail does not force the user to do so. Feelings of expectations overload need to be discussed in organizations in order to decide whether it is reasonable to let e-mail control work. E-mail is an aid and not a technological device that has the power to overwhelm its users with unreasonable expectations.

Information overload is also associated with e-mail. Information overload is a common problem in many organizations, and also in our society today, regardless of the use of e-mail, although one of the features of e-mail that generates information overload is the ease of sending information. As members in an organization it is important to identify sources of information overload and also to realize that all users are responsible if e-mail is to be used as an effective communication tool.

Best practice of e-mail

In Chapter 4 (4.5) some recommendations about the best practice of e-mail have been listed. To become a competent e-mail user there are a number of things to keep in mind in order to avoid misunderstandings and unclear messages, to increase readability, to get attention, to facilitate search processes and to decrease information overload.

6.2 Guidelines to address organizational e-mail miscommunication

This thesis focuses on organizational e-mail miscommunication, its prevalence and causes, but to a large degree also shows that theories from different research areas could help us understand why e-mail miscommunication occurs.

Miscommunication might occur on several levels; individual, group, or organizational. The guidelines in this part are addressing e-mail miscommunication organized on two levels: organizational and individual. The guidelines for the organizational level are supposed to be used by the managers, whereas the guidelines for individuals are useful for all users.

6.2.1 Organizational level

1: Is e-mail a problem?

E-mail is a very common communication tool in current work life, and whether it is a problem in a certain organization is impossible to know without asking.
The key to deal with this issue is to gather knowledge about the e-mail culture in a specific organization. No formal investigation has to be made. Just take the time and ask people, they will tell.

2: **What kinds of problems are there on a user level?**
If there are e-mail communication problems in the organization the next step is to get the staff involved in solving them. This is not an issue that can be directed but something that must be part of building consensus because it is the users who create the problems.

3: **What kinds of problems are there on an organizational level?**
When the staff has identified the main problems, try to find to what extent these have repercussions at the organizational level. Also prepare some kind of social and financial outcomes analysis.

4: **What are we going to do about it?**
Some issues might be regulated and others not. Formal policies or directives have a tendency to be forgotten, if they not are deeply rooted in the needs of the users. If formal policies or directives are not the right way to solve the problems an open debate about e-mail usage will probably change the way people use e-mail. If there is a common desire for e-mail restrictions it could be a good idea to identify some restrictions, otherwise this is not necessary.

5: **What is e-mail supposed to be used for?**
Try to decide on an organizational level what e-mail is supposed to be used for and also when e-mail has more advantages than disadvantages.

6: **Have efficient spam-filters**
Do not let the organization get overwhelmed with spam. It is vital to have functioning spam-filters in order to decrease the amount of incoming e-mail.

7: **Keep an eye on development**
Remember that e-mail has only been used for a rather short period of time. Maybe e-mail use will change for the better – or for the worse. Probably it is possible to see if the development takes a wrong turn. Do not stop asking and observing.

6.2.2 **Individual level**

1: **Is e-mail the Boss?**
If e-mail controls your work too much and therefore has become the Boss, stop awhile and try to find out why and discuss this with your real “boss”.
Remember that it is not the computer that ties you to it, it is you that tie you to the computer. Even if you are dependent on a computer to perform your work tasks, it may not be to anybody’s benefit that you spend all day in front of it.

2: Try other means of communication
Do not make e-mail your only choice for communication. Try to make a phone call or take a walk meeting face-to-face once in awhile. Probably you will get faster and more useful feedback.

3: Restrict your use of e-mail
Although e-mail is just a medium for communication among others, it is still important to realize that e-mail encourages certain behavior. Be aware of what you write, what you write about and also in what mood you are in when writing and responding to e-mail.

Do not forward e-mail without permission from the original sender unless it is a very uncontroversial message. Try to restrict use of CC.

4: Why are you sending e-mail?
Ask yourself if the recipient needs the information you intend to send. Make your intentions clear so that the recipient knows what kind of response is expected. Also give a time limit in order to identify if it is urgent, do not just mark a certain e-mail as urgent. E-mail is regarded as being without context, therefore it is important to give some information about the situation and the context in order to help the recipient to understand the background.

5: If feedback does not appear
To get the feedback you need to perform your task you must realize that you are the centre of your needs and your digital universe, but so is your recipient in his or her mind.

Sending a request to several recipients hoping to get a task done is usually not a good idea because nobody will feel obligated to do anything. It is a better to address it to only one person to get something done, because we tend to read personal e-mail with more interest than those addressed to several recipients.

If you do not get the feedback you need through e-mail, try another way of getting it.

6: You do not have to respond to all e-mails
You do not have to respond to all e-mails, not even read all, at least not if you do not have the time to do so. But, if you recognize that a received e-mail is important, send a note promising to come back soon – and do so.
7: Do not let e-mail interrupt work

Unless you are employed to answer e-mail, do not let e-mail interrupt your work more than necessary. Too many interruptions make it hard to perform long-term tasks or tasks that demand high levels of concentration or innovative thinking.

8: E-mail and feelings in a working context are a bad combination

E-mail is easy and fast to use and therefore we sometimes send e-mails that hurt people or we get hurt ourselves. It is important not to try to respond to negative feelings, and it might also be a good idea to tell (but not by e-mail) people that we find certain e-mails hurtful.

9: Is e-mail an archive?

You do not have to save all e-mails that you get or send. Be aware though, that some e-mail correspondence might have legal consequences. Use another filing system for business e-mail.

10: Do not read e-mail when not working

E-mail has given us a perfect tool to keep an eye on what is happening when we are on leave. Try not to check your inbox when on leave if it is not absolutely necessary because you will not get the rest and relaxation you need.

6.3 Looking back on the research process

It has been a long and winding road from the original wonder to the fulfilling of the purpose of this thesis. The research questions, methods for data collection and theoretical framework have changed several times during the research process but after each new orientation some puzzle pieces have been kept. All these pieces have now been put together and a pattern can be distinguished. In the following paragraphs I will try to look back and evaluate some of the steps in the research process.

The original wonder was the result of noticing that e-mail has changed work conditions. Researching an area where I am also an actor was a challenge and mostly I find e-mail very useful. However, I could identify that e-mail was considered a problem for some people, and in some organizations. I found a serious interest from those I discussed my ideas about e-mail use, and also several indications in both managerial as well as scientific articles that the use of e-mail in organizations ought to be the subject for further research. I focused on the possible negative aspects in e-mail use because I thought that the positive aspects were rather obvious.
In the data collection phase I tried different ways to get a picture of the negative sides of e-mail use. Some of these were less successful than others. For example, in the beginning I joined a couple of communities and also used different mailing list to get the members' opinions about inappropriate use of e-mail. One problem was that these requests yielded a lot of opinions that needed to be followed up in order to constitute an empirical contribution, and I found myself short of time. I also thought that the organizations that were part of Study 3 would have some kind of abuse list that would offer substantial examples, which was not the case. I started looking for examples of inappropriate e-mail messages but ended up discussing possible negative aspects of e-mail use in general because I found that it was not only inappropriate contents that was the problem.

When approaching the organizations involved a more quantitative data collection method would probably have given a more correct picture of the occurrence of the negative aspects in e-mail use, but without knowing what kind of negative aspects people perceived it is hard to ask the right questions. Besides this, the numbers of professions in the empirical part is limited to administrative personnel, managers and teachers, and this has probably influenced the result. On the other hand, these groups have something in common, and that is that they all have a role as coordinators. As coordinators in organizations they are in the middle of an extensive information flow and therefore these groups are interesting to study.

CMC is a multi-disciplinary field and it is therefore possible to choose among a wide range of theories. I proceeded from the traditional theories emanating from Sproull and Kiesler's (1991) discussions about e-mails effects on social systems, tried to catch the state of the art, and then decided that e-mail use mostly is a matter of communication whereas different theories of communication was focused. The area of communication theories offers a diversity of ways to study e-mail communication and maybe I tried to catch them all with the result that the analysis from communication theory view becomes somewhat shallow.

A qualitative analysis is something that goes on all the time through the whole research process, from the moment that the original wonder is formulated into the research question until the last sentence in the concluding chapter. Although this is the case I tried in Chapter 5 to concentrate the rich theoretical and empirical findings under a number of headlines focusing important areas when reflecting about possible negative outcomes of organization e-mail use. This concentration meant that some interesting findings had to be left out, but it was my ambition to explain the most important findings.
In this chapter, the last one, I have discussed the major findings and also suggest a number of guidelines in order to influence possible negative outcomes of e-mail and thereby I am of the opinion that I have fulfilled the purpose of this thesis.

6.4 Suggestions for further research

Throughout this thesis I have drawn attention to both the advantages and disadvantages of e-mail use in an organizational context. In the last two chapters I have analyzed and concluded both the theoretical findings as well as the practical findings in this work. Since it is evident that there are some negative outcomes in e-mail use these negative outcomes ought to be further investigated. Based on the result of this thesis a number of research areas are of interest.

In the beginning of this thesis I discussed two different imperatives; the technological and the communicative. The technological imperative, i.e. that the technology controls us, is challenged by its opponents that state that we use the technology but is not controlled by it. Analyzing the respondents' answers in the empirical parts of this thesis reveal, however, that the technological imperative is sometimes part of the respondents' way of looking at e-mail as a working tool. It would be interesting to analyze to what extent users in general feel that e-mail controls them with a starting point from how they choose to answer questions about e-mail use. A text-analysis would probably give some interesting results. And if the answers reveal that e-mail is regarded as something with its own power to control the user, why is that the case?

A quantitative study about the prevalence of the reasons for e-mail having negative outcomes in organizations would supplement this study. This could be done either as a full-scale study in one organization or as a study approaching certain specified groups in several organizations.

I have mentioned the organizational culture as one important influencing factor on e-mail use. How is organizational culture influencing e-mail use and negative outcomes? Do different organizational cultures suppress or promote certain e-mail behavior? Furthermore: If it is established that the organizational culture influences organizational e-mail behavior negatively, would it then be possible to change the underlying organizational values in order to decrease the negative outcomes?
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Appendix 1 – Interview questions Pre-study

What is your main occupation or position?
How old are you?
What is your sex?

1. How is information distributed inside your organization?
2. According to your view; how is e-mail used in the organization (internal/external/top-down/bottom-up/group or individual level/work related or not etc.)
3a. Is there a formal e-mail policy in the organization?
b. If not, are there informal rules that direct the use of e-mail?
c. What are these informal or formal rules directing?
4. How do you want to describe the internal e-mail culture in the organization? Do you think you get too much or too little e-mail? Do you get personal e-mail or do you get many messages that do not interest you? How about the use of language in e-mail communication? How about abbreviations?
5. Is spam a problem?
If YES: Has spam influenced the use of e-mail and if so in what way?
If NO: What have you (your organization) done to take care of incoming spam?
6. Do you think of viruses etc as a problem and if so how does it affect e-mail use?
7. How important is e-mail as a working tool for you? Are there other means of electronic communication that are more important according to you?
8. How many e-mails do you receive every day if you do not count spam (if spam is an organizational problem) How many of these are personal messages (one-to-one) and how many are group mails (one-to-many)?
9. How many e-mails do you send every day? How many of these are addressed to one person and how many are addressed to many?
10. From whom do you get e-mail? To whom do you send e-mail?
11. What is the content of the e-mail messages you get and those you send?
12. Do you think that there are specific situations when e-mail is suitable or unsuitable to use? Do you have examples of some messages that you do not want to have via e-mail? Why do you think that it is so?
13. Do you have examples of e-mails that you have received or sent that have caused problems or when you have got an unexpected reaction to a sent e-mail?
14. Do you have an example of cooperation through a long series of connected messages that have caused problems or caused unexpected reactions?
15. How will you describe the consequences in those examples? What did happen?
16. What was the reason for the negative reactions? Could they have been avoided?
17. Have you changed the way you use e-mail for the last 5 years? Have others changed their way?
18. How important is electronic communication from an organizational perspective? How do you look at the future of electronic communication?
Appendix 2 – Question web survey Study 2 and 3

(The question numbers do not agree with the numbers in Chapter 4: Entering the field.)

What is your main occupation or position?
Who is your employer or in which industry do you work?
My place of work is in the following county/state:
How old are you?
What is your sex?

1. How many e-mails do you receive on average per day? How many of those are spam?
2. How many e-mails do you send each day?
3. How long have you been an active e-mail user?
4. How long do you need on average each day to manage your e-mail, i.e. to determine what is important/unimportant, what can wait, what can be deleted and so on?
5. What do you use e-mail for in your work?
6. Do you think e-mail controls your work? If it controls it, in which way and what consequences does it have?
7. Do you think e-mail creates feelings of stress and if so what factors create the stress?
8. When do you think e-mail is helpful in your work?
9. Do you sometimes consider e-mail a problem? Try and describe when and why if you do.
10. Have you sent an e-mail that you regretted? Why did you regret it?
11. Have you received e-mail that upset you and if so in which way?
12. If you look back in time how do you think e-mail has affected work?
13. Do you have any other opinions that you want to share?

Here you can write your e-mail address if you do not mind if I contact you with further questions:
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