Death by E-mail Overload

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ABSTRACT: Through the years, e-mail has grown out to become one of the main communication and information sources. The invention of e-mail enabled users to communicate fast, easy and at low cost with people from all over the world, enhancing productivity. Nowadays, e-mail is found to become a victim of its own success, as it is considered to be overused. Several downsides of e-mail are more and more becoming visible through the increasing availability and extensive use of e-mail-These downsides include feelings of stress, inefficiency and ineffectiveness, among others. Not surprisingly, some people experience an overwhelming feeling through e-mail becoming too much to handle. This phenomenon is referred to as e-mail overload. Where prior literature proposes potential factors causing e-mail overload, some effects of e-mail (overload) and some recommendations, there is a need for qualitative research. This is required to achieve an understanding of employee use of e-mail in the workplace, obtaining hands-on information. This research aims to identify the key factors contributing to e-mail overload, using previous literature and research combined with the conduction of qualitative research. More specific, a database from prior study conducted by Spoelstra (2007) is used to verify and identify key factors contributing to e-mail overload. Additionally, an indication of the symptoms related to feelings of e-mail overload and further recommendations are considered in this research, to enable diminishment of e-mail overload by providing suggestions for improvement. Eventually, several key factors are identified and recommendations are suggested.

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Keywords

E-mail, E-mail-overload, E-mail management, Organizational communication, Stress, Information Overload, Information systems.

1. INTRODUCTION

Since its invention, e-mail has grown out to become one of the main communication sources for internal and external communication, enhancing productivity (Ramsay & Renaud, 2012). E-mail was initially designed as a communication tool to speed up communication, replacing the traditional paper-based system (Jackson, Dawson and Wilson, 2002). The invention of e-mail enabled users to communicate fast, easy and at low cost with people all over the world. While the formal workplace was the initial domain of e-mail, it has been adopted in all communicational settings (Ramsay & Renaud, 2012) and has become an important communication channel in organizations. Within organisational life, it has been found that 28% of an average work week consists of reading and responding to E-mails (Chui et al., 2012). In fact, worldwide, more than 196 billion e-mails are estimated to be sent daily in 2015, of which more than 116 billion are business-related (Radicati Group, 2013). However, e-mail is found to be over-used, and can be said to have become a victim of its own success (Alberts, 2014). The growth of e-mail in the business world and it's easy usability has resulted in complications, such as the exclusive use of e-mail as a communication tool, despite other communication media being more appropriate (Ramsay & Renaud, 2012). Likewise, in an organizational setting, employees are found to be more attentive to incoming e-mails than they are to incoming calls (Bujang & Hussin, 2013). Besides, the increased use of e-mail has caught the attention of marketers, sending advertisement per e-mail, referred to as spam. Next to the increased volume of e-mail, increased access to internet and thereby to e-mail also plays a role in the growth of e-mail as a communication tool. The introduction of smartphones, tablets, portable computers and other technology has made it significantly easier to be connected to the internet (Grevet, Choi, Kumar and Gilbert, 2014). Furthermore, the availability of connection is continuously improving, enabling users to have more and better internet access, infringing users' down-time (Adam, 2002).

Various researchers acknowledge that downsides of e-mail exist, arguing that e-mail usage could generate negative effects such as a loss of control, burn-outs, stress and inefficiency (Reinke & Chamorro-Premuzic, 2014; Dabbish & Kraut, 2006; Mark, Voida, & Cardello, 2012; Barley, Meyerson & Grodal., 2011). Not surprisingly, some people experience an overwhelming feeling through e-mail becoming too much to handle. This phenomenon is referred to as e-mail overload, and is defined as the feeling of an individual being unable to find, cope with or process his/her e-mails effectively (Dabbish & Kraut, 2006; Sevinc & D'Ambra, 2010). With e-mail becoming a critical tool in daily life, people become more and more exposed to the feeling of this overload. Through the impact of e-mail on the health and well-being of employees, research in the area of e-mail overload is therefore significant.

Where prior literature indicates potential factors causing e-mail overload, effects and some recommendations on e-mail overload are provided to cope with this phenomenon, (Barley et al., 2011; Grevet et al., 2014; Gupta, Sharda & Greve, 2010; McMurtry, 2014; Ramsay & Renaud, 2012; Reinke & Chamorro-Premuzic, 2014; Soucek & Moser, 2010; Sumecki, Chipulu & Ojiako, 2011; Szóstek, 2010), there is a need for qualitative research to achieve an understanding of employee use of e-mail in the workplace (McMurtry, 2014). This research aims at identifying key factors causing e-mail overload, using

previous literature and research combined with the conduction of qualitative research. The focus will lay on work-related e-mail rather than private e-mail use, distinguishing between the usage in different settings. Additionally, an indication of the symptoms related to feelings of e-mail overload and further recommendations are described in this research, to enable diminishment of e-mail overload by providing suggestions for improvement. The research model is based on the suggestions of Dr. D.L. Moody, which can be found in a paper of W.J.T. Spoelstra (2007).

The research model shown in figure 1. describes all relevant elements which are dealt with in this research.
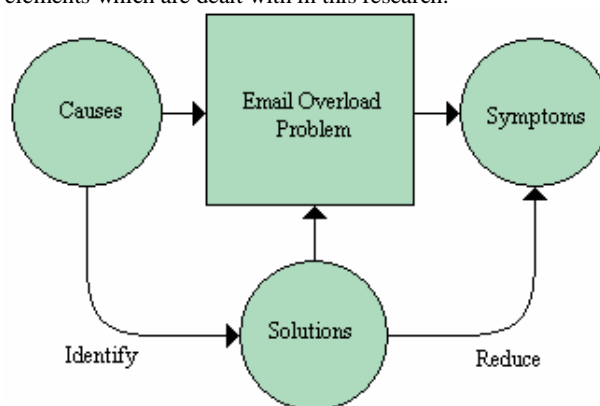

Figure 1. Research model (Moody, in Spoelstra, 2007)

Resulting in the following research question: ***What are the key factors contributing to e-mail overload?***

Several sub-questions are essential to be answered in order to acquire an answer to this research question:

What is e-mail overload?
What are the symptoms of e-mail overload?
What are factors causing e-mail overload?
What are the key recommendations to reduce E-mail overload?

This paper will start with an overview of existing literature and research, in the form of a literature review. This section will include definitions of the main variables dealt with in this research and an overview of related research. In order to find the key factors of E-mail overload, research will be conducted with knowledge-workers, general managers and account manager in an organization, in order to obtain hands-on information from people coping with e-mail (overload) every day. The interviews will be conducted in the form of real-life interviews, for the purpose of avoiding misinterpretation or miscommunication. The outcome of these interviews will be compared and combined with existing research, to create a complete view of factors influencing e-mail overload. A database provided by prior research conducted by Spoelstra (2007) is used as existing research to support the identification of the key factors contributing to overload.

2. RELATED LITERATURE

2.1. The phenomenon of e-mail overload

The term e-mail overload was first coined by Whittaker and Sidner in 1996, in a research consisting of employee interviews and inbox investigations. Various studies describe the phenomenon of e-mail overload (e.g. Sumecki et al., 2011; Whittaker & Sidner, 1996; Whittaker, Bellotti & Gwizdka, 2006). Whittaker and Sidner (1996) describe e-mail overload as overload which is related to an inbox that contains messages of different status types, such as to do's, to reads, undetermined status, and ongoing correspondence. Other definitions emphasize on volume when describing e-mail overload, relating to information overload (Dabbish & Kraut, 2006; Hogan & Fisher, 2006). Schultze and Vandebosch (1998) take into account the individual perception of overload, stating that in e-mail overload, the amount of e-mail received exceeds the individual's capacity to process the information. This finding indicates that perceptions of overload differ per person. Through these different interpretations, we can say that e-mail overload is:
- A feeling, based on an individual perception.
- The large amount of incoming and outgoing e-mails on a daily basis.
- The presence of different statuses of e-mails in the inbox.

2.2. Factors causing e-mail overload

Literature on e-mail overload proposes several factors triggering overload. These factors could broadly be summarized in five categories: (i) Volume-related factors, (ii) Content-related factors, (iii) Individual-related factors, (iv) Organization-related factors and (v) Technology-related factors. These categories will be discussed in the following sections.

2.2.1. Volume- related factors

The first, and perhaps most obvious factor is the volume of e-mail which is received and sent. The increased amount of messages which is sent back and forth every day causes inboxes to bulge, leaving employees to cope with it (Dabbish & Kraut, 2006; Jerejian, Reid, & Rees, 2013; Reinke & Chamorro-Premuzic, 2014; Sumecki et al., 2011). The high volume of messages received can be attributed to several bad practices that occur in e-mail management. The easy use of e-mail as a communication tool results in the more loosely sending of messages (Alberts, 2014), resulting in more time needed to process messages through reading, sorting, filing and responding (e.g. Bellotti, Duncheneaut, Howard, Smith and Grinter, 2005; Dawley & Anthony, 2003). The increased volume of e-mail is found to have negative effects on productivity. Continuous monitoring of incoming e-mail causes a switch away from the initial task to another, increasing work. (Bellotti et al., 2005; Manger, Wicklund, & Eikeland, 2003; Soucek & Moser, 2010; Thomas et al., 2006). When interruption occurs on a frequent basis, this will result in a disturbing effect on work (Jackson, Dawson, & Wilson, 2003). Several malpractices increasing e-mail volume are treated in this section.

To start with, the enthusiastic use of the 'CC' button results in message's exponential multiplication, resulting in a high volume of messages (Alberts, 2014; McMurty, 2014). There are various reasons for the loose use of the CC/BCC-button. To begin with, the act of blind copying allows senders to conceal contacts from other recipient's BCC field. Thereby, tertiary recipients can receive the message sent, not allowing other

recipients to notice this tertiary recipient is receiving the message. Through this unawareness, messages may be sent to these undisclosed recipients, causing double work and a larger stream of e-mails circulating in the company (Burgess et al., 2005). Another malpractice resulting in more e-mail is related to the forwarding of e-mails. Forwarding or loose use of the CC button occurs in order for the sender to not have to deal with the forwarded e-mails, moving workload to the receiver. This is referred to as buck-passing (Shipley & Schwalbe, 2007). Back-covering is based on the practice of forwarding e-mails as well. In the case of back-covering, e-mails are not forwarded to avoid workload, but rather to avoid sole responsibility. Therefore, it is more a defence mechanism, carried out with the purpose of protecting oneself (Ramsay & Renaud, 2012; Alberts, 2014). The CC- function is also used to inform receivers, without requiring them to take action. However, most receivers are not aware of this for-your-information-only status of messages, spending time reading or even taking action upon the e-mail, resulting in double work and a waste of time (Burgess et al., 2005). In a study by Burgess et al. (2005), on average, 41% of e-mails received are only for information purposes, indicating the use of e-mail as an informing tool. Furthermore, the act of inappropriate broadcasting is related to the misuse of the CC, reply-to-all or forwarding function. Through the improvement of e-mail in terms of usability, choosing addresses from the contact list is simple to use. Due to laziness, e-mail users tend to choose to send to all contacts rather than selecting appropriately. Next to laziness, the act of inappropriate broadcasting is applied for the purpose of knowledge sharing (Skovholt & Svennevig, 2006). Broadcasting is not always an ineffective practice. However, by dispersing responsibility, the chance of the problem being solved is only reduced.

Next to overuse of the CC- and forwarding function, the use of e-mail as an exclusive communication medium is another cause of jammed inboxes (Ramsay & Renaud, 2012). In the case of complex issues or communication with people in the same building, the use of e-mail is no longer efficient compared to other communication media such as face-to-face meetings or phone calls. In a prior study, 56% of employees underlined the use of e-mail in situations where other media would be more appropriate (Burgess et al., 2005). In addition to laziness, underlying causes of over-using e-mail as a communication tool relate to the relation between the sender and receiver. The avoidance of direct confrontation is one example why e-mail is used instead of other media (Ramsay & Renaud, 2012). Correspondingly, in socially unpleasant settings, employees tend to use e-mail as a communication medium (Burgess et al., 2005). Spam-mail is another volume-increasing factor and is defined as irrelevant or unwelcome messages sent over the internet, in most cases sent in bulk, for the purpose of advertisement mostly. Most e-mail users are not aware of the significance of the spam problem, because the effects are not clearly visible to individuals (Bujang & Hussin, 2013). Spam-filters solve for a large part of this unwanted messages already. However, anti-spam technology is not 100% accurate (Bujang & Hussin, 2013; Grevet et al., 2014), implying it still ends up in inboxes, increasing volumes. These e-mails can be considered non-business-critical, resulting in a waste of time and energy when attending spam. Moreover, the problems caused by spam include reduced productivity and a fast filling of storage space (Bujang & Hussin, 2013). Consequently, spam is identified as a potential threat to the reliability of e-mail as a valid and efficient communication system (Bujang & Hussin, 2013).

Lastly, formality e-mails might contribute to the received e-mail volume. The sending and receiving of formal e-mails as an act

of politeness e.g. 'thank you' and 'see you' account for a large part of e-mails which are non-business-critical, contributing to filling inboxes (Song, Halsey, Burress and Blanchard, 2007). These e-mails do not require any action to be taken upon, but cause an interruption of tasks through the need for attendance and removal.

2.2.2. Content-related factors

Next to the large volume of e-mails received, the content of the messages is a cause for the feeling of overload. When considering content-related factors for e-mail, the language used, the goal of the message, the use of attachments and the use of subject lines are aspects to consider. To start with, e-mail is a more informal form of communication compared to business letters. The quality of e-mail is often significantly lower than other more formal communication methods (Soucek & Moser, 2010). This lack of quality can result in difficulties of understanding, supporting miscommunication (Burges et al., 2005; Kimble & Abu Bakar, 2001). Due to the use of unclear language, difficulties in determining the importance of the message, the purpose of the message and the correct filing may arise. These difficulties result in more time needed to process e-mails, possibly causing the feeling of a loss of control. Moreover, whether an e-mail is actionable relates to whether an e-mail shows a clear expectation, as to whether and how it requires actions to be undertaken. A prior study shows that 54% of respondents were uncertain about the action to be undertaken after receiving a message (Burgess et al., 2005). It should, however, be noted that this lack of clarity can also be assigned to employee-related capabilities in terms of understanding and work experience. The failure to understand what action is expected results in delay of actions to be undertaken. Related to the ability to act upon messages, the expression of a clear time-frame within e-mails is essential. If not included, it cannot be assured that tasks will be completed in time (Burgesss et al., 2005), resulting in delayed work. Furthermore, when sharing information, attachments are an easy option for the sender to include documents and images. However, for the recipient, the inclusion of large attachments can be extremely time-consuming due to long opening/downloading times and the time required to attend, sort, file and sometimes print the attached documents (Alberts, 2014).

2.2.3. Individual- related factors

Through the notion that the feeling of overload is related to one's perception, it can be said that e-mail overload differs per person. In fact, the amount of e-mail received is not as important as the individual perception of volume by an individual (Dabbish & Kraut, 2006). The individual characteristics as well as the employee status are found to have an influence on the perception of e-mail overload, which are discussed in this section.

Regarding personal characteristics, low self-esteem is found to be linked to a feeling of no control over e-mails (Reinke & Chamorro-Premuzic, 2014). Consequently, incoming e-mails cause increased levels of stress (Hair, Renaud & Ramsay, 2007). This finding is supported by other research, which expresses the link between high self-esteem and the feeling of e-mail overload. People with high self-esteem are found to be less likely to perceive e-mail overload (Sevinc & D'Ambra, 2010). Furthermore, Hair and colleagues (2007) categorize e-mail users based on behaviour, differentiating between relaxed, driven and stressed e-mailers. Stressed e-mailers are more likely to obsessively check their e-mail. Possible causes for this obsessive behaviour are a lack of self-control and the tendency to protect oneself from judgement by others about their work-

performance (Hair et al., 2007). Relaxed e-mail users, on the other hand, were found to be more likely to ignore and delete e-mails without opening them. This behaviour might be interpreted as attempting to regain control of e-mails (Hair et al., 2007). However, this approach to regain control is based on postponing work, which will have to be attended to at some point. Lastly, worry is positively linked to the feeling of e-mail overload (Reinke & Chamorro-Premuzic, 2014). In the end, these individual characteristics are linked to sensitivity to stress in general. Through the increased probability to experience stress, individuals with these specific characteristics are more likely to experience feelings of overload than others. Next to personal characteristics, factors of employee status are proposed to contribute to overload. The role of an individual in the workplace is linked to the likeliness to experience feelings of e-mail overload. Among managers, feelings of e-mail overload are found to be the highest (Alberts, 2014). This relates to findings of Burgess et al. (2005), where higher positioned employees are found to receive more e-mail. This finding could be clarified by the act of back-covering by lower-status employees. Furthermore, a larger responsibility that comes along with a different job function may increase the incoming stream of information, also via e-mail.

2.2.4. Organization-related factors

Organizational factors are related to the importance of e-mail in a company, norms about availability of e-mail access, rules and guidelines and the organizational culture as a whole. Moreover, the type of business plays a role. Multinational companies are more likely to have e-mail contact with contacts from all over the world, living in different time zones. This spread causes e-mails to be received at unusual times, out of regular working-hours (Waller & Ragsdell, 2012). Consequently, employees may find themselves monitoring their inbox out of work-time, blurring the line between private- and work-time. E-mail volume depends on organizational characteristics such as size, function and procedures as well. Some employees are enabled to use e-mail in their off-hours. This increased access to e-mail may result in increased feelings of overload through the constant stream and connection (Grevet et al., 2014). Without setting boundaries to this availability, the spill of e-mail communication into time intended for family and oneself is one cause for feelings of overload (Barley et al., 2011). This finding is supported by Alberts (2014), noting that mobile technologies increase some managers' daily stress. On the other hand, many managers acknowledge that mobile technologies facilitate their work (Alberts, 2014). Related to this, in research from Dabbish & Kraut (2006), it became evident that the importance of e-mail communication to finish work is related to feelings of overload. The importance of e-mail to finish work is related to the time spend on managing e-mail. The more time spent handling e-mail, the more likely it is to experience a sense of overload (Barley, et al., 2011).

Next to organizational regulation of e-mail access, certain habits, perceptions and expectations are present in the organization. When it comes to communication, it may occur that colleagues have set expectations regarding responsiveness. This time-pressure contributes to e-mail overload and stress (Barley et al., 2011; Fenner & Renn, 2009). A study by Alberts (2014) confirms this finding, where managers express an increased pressure to perform through expectations. Whereas the environment can force a time-frame, the creation of a norm for responsiveness can also be created through one's own responding behaviour (Barley et al., 2011). Speaking in terms of organizational standards, an absence of standards and procedures within organizations is found in the field of digital

information management (Alberts, 2014). Through this lack of standards and procedures, difficulties with information systems arise such as what, how and when to file. For the sake of achieving a 'clean' inbox, some strategy in dealing with files should exist (Alberts, 2014).

Furthermore, a lack of response formalities and rules may result in unrealistic expectations regarding response among colleagues, causing ambiguity through unclear communication (Ramsay, Renaud and Hair, 2006). On the other hand, many procedures may increase the time needed to cope with one e-mail, enhancing feelings of overload. Moreover, a lack of user training is proposed in literature. Due to a lack of knowledge on e-mail as a communication system, employees find themselves not to operate on full efficiency (Alberts, 2014). User training could satisfy the need of employees in learning more about technologies, improving satisfaction and work performance (Alberts, 2014). Where there appears to be a lack of training at all, there is also a lack as in what is dealt with in user training (Burgess et al., 2005). Improvement of efficiency and work performance can also be achieved through the use of appropriate filing strategies. Through the use of inappropriate filing strategies, tracing back e-mails is a difficult task. The incapacity to file e-mails on a logical structure results in inefficiency, taking a lot of time to retrieve information. Directly linked to this is the decision whether to use or not use separate folders. The more time is spent on inefficient matters, the less time available to cope with the stream of incoming e-mails, resulting in a feeling of overload. In fact, research conducted by Whittaker and Sidner (1996) and Fisher, Brush, Gleave and Smith (2006) found that the archive has grown by a factor 10 in ten years. Other research supports this, finding that 53% of messages stay in the inbox as being archived (Grevet et al., 2014). Related to this finding, Whittaker and Sidner (1996) identified three distinct user strategies for processing e-mail based on two criteria: whether the participant uses folders to organize his/her e-mail and whether the participant cleans the inbox on a daily basis. When participants make use of folders and try to clean their inbox on a daily basis, they are considered *frequent filers*. *Spring cleaners* are participants who use folders and clean their inbox periodically. Lastly, participants that make no use of folders are categorized as *no filers* (Whittaker & Sidner, 1996). Although search engines support people in tracing back information, the poor use of subject lines and the combination of multiple topics in one e-mail make it a difficult task to file appropriately. These use of poorly formulated or empty subject lines significantly increase the difficulty of prioritizing and handling e-mail appropriately (Burgess et al., 2005). Additionally, the use of poor keywords makes it difficult to trace e-mails back (Xiang, 2009).

2.2.5. *Technology related factors*
Technological features of e-mail such as notifications can contribute to e-mail overload. Next to this, the use of e-mail as more than a communication tool, e.g. task manager, agenda, can contribute to the perception of overload through a lack of system capabilities. Also, the use of the agenda-function might create increased numbers of notifications through appointment invitations. To start with, through the large volume of e-mails sent and received daily, the storage space of inboxes are challenged. Limited storage space is related to increased feelings of stress (Alberts, 2014), through the constant need to clean the inbox. Next to limited storage space, technological issues within the e-mail system can contribute to feelings of e-mail overload. The use of e-mail as a sole communication tool has expanded to the ability to coordinate, plan, manage and administrate. Through this tremendous increase in possibilities

and the high pace of innovation, time and effort is incorporated in understanding and carrying out these tasks. These difficulties in mastering new systems result in a lower productivity, known as the 'Productivity Paradox' (Karr-Wisniewski & Lu, 2010, p.1061), of which a feeling of overload can be the result (Barley et al., 2011). A more specific technological difficulty which contributes to e-mail overload is the task-technology misfit (Alberts, 2014). Difficulties in this area occur when employees try to carry out their work with systems which do not possess the functions required for the job (Alberts, 2014; Barreau, 2008; Bondarenko, Janssen, & Driessen, 2010; Dabbish & Kraut, 2006; Karr-Wisniewski & Lu, 2010). The use of notifications is another technical option within e-mail systems. A notification of an incoming e-mail can consist of a pop-up or a notification sound, or both. It increases the awareness on incoming e-mails, consequently increasing disruption. Research by Burgess et al. (2005), supports this, with 49% of respondents feeling distracted by incoming e-mails. These frequent disruptions can have disturbing effects on work (Jackson et al., 2003).

2.3.Symptoms of e-mail overload
In order to identify the problem of e-mail overload, an understanding of the symptoms accompanying the problem is critical. These symptoms, experienced by people, become evident as a result of e-mail overload. Therefore, symptoms can serve as indicators to identify the presence of overload. Prior research focused on different areas. To begin with, Barley et al. (2011) found that e-mail overload caused exhaustion. Also, e-mail overload is strongly positively correlated to burnout and stress (Reinke & Chamorro-Premuzic, 2014; Sumecki et al., 2011). Supporting these findings, Thomas et al. (2006) state that e-mail-related stress occurs as a consequence of information overload combined with the perception that e-mail needs to be attended to immediately. The hours worked per day are positively correlated to the levels of stress experienced (Barley et al., 2011). This finding is supported by the finding that on days where no e-mails are sent and received, stress levels are lower and task focus is higher, enhancing productivity (Mark et al., 2012). Moreover, e-mail overload is found to lead to different types of insecurity, of which one is the fear to miss out on important information (Alberts, 2014). Moser, Preising, Göritz and Paul (2002) found evidence that increased e-mail overload increases psychosomatic problems, resulting in less job satisfaction. Additionally, e-mail overload relates to jammed inboxes, an inefficient workflow and deficient communication quality (Soucek & Moser, 2010. These jammed inboxes are a consequence of the factors discussed in section 2.2.. Other proposed consequences of large e-mail volume are failure to respond, less accurate or incorrect response, ignorance of information or even people quitting their job (Hiltz & Turoff, 1985; Sumecki et al., 2011). These, in turn, possibly result in the receiving of reminders. Reminders are e-mails received to remind one to respond, as a result of the noted failure to respond that might come along with e-mail overload. Therefore, reminders might be a symptom for overload as well.

2.4.Proposed solutions to reduce e-mail overload
To reduce feelings of overload, recommendations are provided to better cope with e-mail (overload) in daily life. A deviation in methods to influence behaviour can be made. Ramsay and Renaud (2012) distinguish between an education and a regulation approach. These approaches are two extremes, and a combination of these two approaches is found to be the most appropriate (Ramsay & Renaud, 2012). As mentioned within the individual-related factors section, the perception of each

individual on overload differs, and the way they see e-mail influences perceptions of e-mail overload (Powell, 2002). Accordingly, acknowledging that e-mail is a significant task for work can help in decreasing feelings of overload (Barley et al., 2011; Powell, 2002; Sumecki et al., 2011). This recognition allows the creation of work-flow management and scheduling, possibly resulting in better time-management (Soucek & Moser, 2010; Sumecki et al., 2011). A change in employees' e-mail checks in terms of duration may be achieved, increasing efficiency and decreasing the impact of interruptions (Jackson et al., 2001; Sumecki et al., 2011; Szóstek, 2011). Jackson et al. (2003) propose e-mail checks in timeframes of 45 minutes. However, it should be bared in mind that the management technique should fit the individual workflow. In some cases, it is proven that the frequent checking of e-mails reduces e-mail overload (Dabbish & Kraut, 2006). This is because recipients are exposed to e-mails requiring their immediate attention (Dabbish & Kraut, 2006; Jackson et al., 2001). Next to this, draining the inbox every 24 to 48 hours, demanding discipline but being worth the effort is a proposed strategy in reducing feelings of overload (Powell, 2002), avoiding accumulation of e-mails. This draining of the inbox is the act of removing all e-mails from inbox, moving them to appropriate folders or deleting them. Furthermore, having a clear method of filing incoming messages, based on e.g. date, topic supports information processes can reduce feelings of overload (Whittaker et al., 2007), making it easier to trace back messages and reduce volumes of e-mail in the inbox. Related to this, the presence of a strategy to review folders and subfolders in a way allowing to take action upon fast (Powell, 2002), is crucial to gain insight and structure, reducing feelings of overload.

A reduction of the volume of incoming mail is another way to reduce overload. The reduction of e-mail recipients to those who really need to receive reduces the amount of e-mails circulating in an organization (Powell, 2002). Next to this, when sensitive issues need to be discussed, the use of a richer communication medium is more appropriate (Powell, 2002; Burgess et al., 2005), reducing e-mail volume and avoiding endless contact and misunderstanding. Solutions for content-related factors causing overload are based on training interventions. Soucek and Moser (2010) propose an intervention training, improving media competencies, improving personal workflow and strengthening e-mail knowledge. This intervention led to reduced feelings of interruption and overload. This training in the field is recommended by other authors as well (Burgess et al., 2005; Lim & Teo, 2009). A correlation of 95% was found between e-mail being easy to read, straight to the point and using the right medium. Therefore, it can be said that if one of these points is not sufficient, the others are likely to be insufficient as well. This finding could be used to make e-mail training more effective and efficient (Burgess et al., 2005). Another aspect to be treated in training is clarity about time-frames, to assure tasks will be completed in time (Burgess et al., 2005). In order to avoid irrelevant and unclear communication, the creation of effective and to the point subject lines is crucial (Jackson et al., 2001; Jackson et al., 2006).

Next to this, the use of guidelines and rules within organizations are suggested for the purpose of solving problems in the field of e-mail overload (Evans & Wright, 2008; Soucek & Moser, 2010). A clear guideline on how to file and archive files makes it easier to file and trace back files (Whittaker et al., 2007), increasing effectiveness and efficiency. Also, proceeding a suitable policy on the availability of e-mail access could possibly reduce feelings of overload, as an increase in access to e-mail may result in increased impressions of e-mail overload through the constant stream and connection (Grevet et al., 2014). Likewise, the provision of clear rules about responsiveness could provide clarity and allow for scheduling, since unrealistic expectations about responsiveness contribute to feelings of overload (Barley et al., 2011; Derks & Bakker, 2010). Lastly, technical interventions relate to the use of algorithms and automatic filters for example (Sumecki, et al., 2011), simplifying the process of scanning and sorting incoming mail.

3. METHODOLOGY

In order to obtain hands on knowledge, qualitative research will be conducted with employees who are in daily contact with e-mail. Also, the participants are selected on their different job-statuses within the company. Two knowledge workers are interviewed, next to two account managers and two team managers. This selection is made to provide a research on diverse layers within an organization, possibly identifying differences in their perception of e-mail overload. The interviews are conducted in a large insurance company, established among others in Apeldoorn, The Netherlands. Besides the new research, a database from a prior study is used to verify and identify the key factors contributing to overload.

3.1. Participants

A total of six persons volunteered to participate in this research of which five are male and one is a female. The participants are aged between 39-56 years, with an average of 47. These participants are selected based on their daily contact with e-mail communication. Furthermore, the participants work in different layers and divisions of the company, possibly indicating different e-mail behaviour. Two knowledge workers, two team managers and two account managers will participate in this research. To start with, account managers spend most of their day at the client, without much time to access, view or respond to e-mail. On the other hand, knowledge workers receive e-mails and are able to visit their inbox through the entire day. Next to this, team managers are expected to receive more e-mail than the other two job categories, due to their leading function and responsibility. The names of the participants will not be mentioned for anonymity reasons. Demographic information of the participants is indicated in the table below.

Table 1: Participant information

	M/F	Age	Function	Dept.	Hours/ week
Participant 1	M	51	Knowledge worker	Private liability	36
Participant 2	M	56	Knowledge worker	Public liability	38
Participant 3	F	39	Team manager	Mobility	45
Participant 4	M	42	Team manager	Liability	40
Participant 5	M	44	Account manager	Multiple	45
Participant 6	M	48	Account manager	Multiple	50

All participants work with Microsoft Outlook as their e-mail communication system. Observations from the database are based on Microsoft Outlook as well. The database which is combined with planned research uses participants from the public sector, working at the ministry. Different functions

among these participants exist, distinguishing between knowledge workers, administrative workers and managers. Here, a total of 21 employees is interviewed, aged between 27 and 50, with an average of 35.9, where in this study the average is higher with a mean of 46,7. The working-weeks are on average higher in the new data obtained, with a mean of 42,3 compared to 39 hours on average in the database. The database consists of data obtained from 10 female and 11 male participants.

3.2.   Data collection
The method of data collection used is a one-on-one, face-to-face interview. Interviews are semi-structured, allowing for more flexibility in language used, clarifying and deletion of questions that do not appear to be relevant (Bates, Droste, Cuba, and Swingle, 2008), enabling to obtain follow-up information. The interview questions are composed based on related literature, intending to identify and verify findings from the theoretical background. Each interview is scheduled for one hour, leaving space for an informal introduction. It will not be possible to schedule all meetings at the desk due to possible distraction of other employees. The two account managers do not have a desk at the company, therefore, one of these interviews will be conducted at my own house and the other one will be conducted at the house of the participant. After a short introduction on the topic, several questions will be posed to identify the problem of e-mail overload, symptoms (if any), factors causing overload and possible solutions for the problem of e-mail overload. Furthermore, some observations in the inbox are completed to gain more insight in the participant's strategies. Outcomes of these observations will result in quantitative data, which can be used to verify-and contribute to the obtained qualitative data. The interviews will take place within the same week. All information obtained from the interviews will, during the interviews, be typed out in a Microsoft Word-sheet where the structured interview questions are present as well. During- and at the end of the interview, there is space for the participants to elaborate more in depth on issues or topics that they consider to be relevant.

This research applies very similar methods as research from Spoelstra (2007). Especially, questions in regard to key factors are similar. However, it should be noted that the interviews are not similar. In the same way as current research, Spoelstra used a qualitative method, interviewing participants within different job functions. Through new insights in literature, new questions regarding factors possibly contributing to overload are posed in current research. The intention of research by Spoelstra differs with the new research model in the sense that Spoelstra aimed at a more exploratory research, using propositions through a lack of literature on e-mail overload. His research on the public sector aims at identifying which factors could be related to e-mail overload. In current research, the aim is to identify the main factors contributing to e-mail overload. Between 2007 and 2015, a significant contribution on the topic of e-mail overload in terms of literature is achieved. Therefore, this research does not propose factors based on expectations. Rather, literature provides information on most of the factors possibly contributing to e-mail overload. Lastly, Spoelstra collected more observational variables, taking data from the inboxes of participants to indicate filing behaviour and e-mail volumes. In this research, some observational values are collected but the main focus is on the data obtained in qualitative research.

3.3.   Data analysis
Through the decision for qualitative research, and limited time-frame, six participants are chosen to interview. By conducting high-qualitative interviews, much information is observed. In order to provide a clear overview of the obtained data, the in Microsoft Word typed out interviews, are summarized in an Excel worksheet. This worksheet can be found in Appendix 8.1: Interview Results Overview. In order to come to some results, indicators of overload proposed in prior literature and the related database are used as key determinants for identification of overload, symptoms, factors and recommendations. Research of Spoelstra (2007) is used to verify and identify key-factors contributing to overload, supporting research. For all topics possible, both insights are provided. If not available, only the results of the current study are discussed.

4.   RESULTS
In this section, the results of the six conducted interviews will be portrayed. In order to provide a convenient view, the results are divided in 4 parts: diagnosis, symptoms, factors and recommendations. As previously indicated, the main focus will lay on the outcome of the factors influencing overload, and the related recommendations. Additional insights are provided through the diagnosis and symptoms section. A table providing all answers is included in Appendix 8.1.: Interview Results Overview. The results of Spoelstra's study on the public sector (2007) can be found in Appendix 8.2.: Database public sector.

4.1. Diagnosis
When asked whether E-mail has a positive or negative effect on their (work)life, four of the participants indicated e-mail to have a positive effect on their (work)lives. The main arguments for this positive effect are the ability to structure work, the reach, and speed with which communication occurs through e-mail. The other two participants where overall positive, but indicated that it can be negative in some occasions, e.g. when it becomes too much in terms of volume or when a certain reactiveness is expected. Five out of six participants acknowledge to have experienced the feeling of being ruled by their e-mail. The main reason for this feeling is the importance of e-mail in the organization, noted by three of the participants. The two account managers provide specific answers on this question. Participant 5 states that ''*I more and more experience this feeling, I can manage my e-mails at my own time, but so can others, causing e-mails to arrive at the craziest time of the day*'', stressing the feeling of dependency on others, causing the feeling of being ruled by e-mail. Next to this, participant 6 emphasizes the individual characteristics playing a role in this perception of being ruled, stating that ''*I find it difficult to let things go, I have to read all my e-mails, be on top of my mail*''. Likewise, the only participant (3) that indicates not to experience a feeling of being ruled by e-mail mentions she ''*does not let it influence me that much*'', indicating personal characteristics. This individual perception will be further discussed in section 4.3.. Variant responses are obtained regarding whether participants recognize the feeling of not being able to deal with the amount of e-mail received. Two participants indicate to be able to deal with the amount of e-mail received. However, participant 6 notes that this dealing with e-mail volume only succeeds due to his decision to work extra hours, allowing him to keep up. This statement is supported by participant 5, possibly indicating a relation with the job of being an account manager. A lack of time is mentioned by most participants, indicating inability to some extent to deal with the e-mail volume received. One participant

(3) indicates to experience the feeling of being unable to deal with e-mail volume often, due to many appointments, scheduling one day per week to keep up. Directly linked to this question, the question as to what extent e-mail overload is a problem in work is asked. Four participants indicate e-mail overload to be a problem to some extent in their work. The volume of e-mails received and a lack of time play a central role in this indication, causing stress through fear of missing deadlines. The other two participants do not consider it to be a problem. Also, participant six indicates that whereas it is not a problem (yet), e-mail is being over-used in the organization and could be used less, decreasing work-pressure. Experiencing stress with incoming e-mails is recognized by five participants. The main reason for this feeling of stress is the sender, which is displayed in the notification of the new e-mail received. This source of stress was indicated by all five participants. Next to this, the subject of the e-mail played a role, supported by three participants (4,5 and 6). All five participants recognizing this feeling of stress highlight that it is the expected content of the message that causes a feeling of stress, rather than the obtainment of the e-mail itself. Participant 3 does not experience any stress with incoming e-mails.

4.2. Symptoms

Trying to find out what e-mail overload really is, it is interesting to see what symptoms play a role in determining feelings of e-mail overload. The extent to which e-mail is a source of stress in work-live is a first possible indicator of feelings of overload. Three participants indicate e-mail to be a source of stress to some extent, implying that e-mail can be the last straw. Two participants mention that it is not necessarily e-mail as a system as a source of stress, but rather the content of the messages received. Next to this, participant three indicates to not experience any feelings of stress at all, due to her own mind-set. Participant four feels like it is more *''A constant alertness, because e-mail is always there''*, rather than a feeling of stress. The notion of this stress as a consequence of information overload and the perception that e-mail needs to be attended to immediately is supported in this research. Participants indicated feelings of stress when important e-mails arrived, requiring immediate attention. When not being able to keep up with e-mails, three out of six participants experienced feelings of guilt. Those who do not feel guilty indicate that it is rather a feeling of fidget (3), they do not experience guilt through managing e-mail selectively (4) and that their own personalities do not easily makes them feel guilty (5). These findings are consistent with literature (Barley et al., 2011). Next, deficient communication quality is proposed as a third symptom of overload (Soucek & Moser, 2010). Several participants indicated inefficiencies and less accurate responses when work-load increased significantly in the interview, supporting this finding.

Furthermore, the notion of jammed inboxes as a symptom of overload was proposed in literature (Soucek & Moser, 2010). Inbox sizes are found to differ significantly. Whereas four participants have an inbox size between 1 and 48, the remaining two participant have inboxes of 3150 and 2500 items. However, no clear link to overload is found yet. Most participants did not experience difficulties in retrieving e-mails. The availability of the Microsoft Office search function is the main reason for this. Besides, the use of folders appeared to facilitate the process of retrieving e-mails. The two participants acknowledging to have difficulties in retrieving e-mails indicate not to sort things so well and that larger storage space makes him lazy in removing useless e-mails from his inbox. Therefore, a link between inbox size and ease of retrieving inbox can be

made, indicating large inbox size as a potential symptom of overload. None of the participants found unread e-mails in his or her inbox a long time after receiving them, indicating a degree of control over their inboxes. This explains the low number of reminders received by the participants, indicating a range between nihil to barely receiving these reminders. Participant six received the most reminders, with three reminders per week which he indicates to be not often. These reminders are because of dependence of other people, waiting for other to finish their action before he can continue his work, sometimes causing reminders. He indicates this to be a main factor of stress because it is out of his own control, indicating feelings of overload.

In a concrete way, e-mail (overload) is found to influence work in terms of becoming less effective and efficient when volume and workload are (too) high (1,3). Next to this, all participants note that their work is obtained through e-mail, making it an essential system to function. Participant six notes that e-mail changes his plans for the day, showing priority e-mails can cause pressure on a daily routine. Besides the influence of e-mail on work, another question regarding how e-mail overload influences the mind was posed. Nearly all participants indicated e-mail's influence on their mind. Participant one indicates feelings of frustration, mainly through the content of the e-mails received. Unpleasant compositions and impatience trigger this sense of frustration mostly. Furthermore, (too) much pressure on expectations causes a resistance, due to a desire to decide and control by himself when and what is done (1). Participant two recognizes that e-mail can cause stress. This stress, in return, changes his mind-set, causing him to become sad, tired or frustrated. Mainly the exhaustion caused by the high pressure perceived is expressed. Participant three indicates that there is no influence on her mind. She mentions this occurs because she does not *let* it influence her that much. Participant four experiences an influence on his mind in the weekends and in vacations mostly. The reason for this are expectations regarding responsiveness, causing frustration because he experiences this as not normal. He phrases: *''Like they do not have anything 'better' to do in their weekends''*. Participant five indicates that the content of the messages influences his state of mind, causing him to be happy, sad, disappointed and so on. The final participant mentions that it does not influence him that much, rather to a small extent. Sometimes, he is fed up with the high volume or the content of e-mails received.

4.3. Factors

Trough literature, many factors are proposed that appear to contribute to feelings of overload to some extent. The outcomes of the research are discussed in the following sections. Results retrieved from prior research on e-mail overload in the public sector are included, when information is available.

4.3.1. Volume- related factors

To begin with, the CC-function is found to be over-used in the particular organization. Five out of six participants indicated this over-use. Participant four indicates not to experience over-use. Both the phenomenon of back-covering and the distribution of information are noted as the main reason for CC- overuse. This particular over-use is believed to contribute to some extent to feelings of overload. Five participants indicate contribution to overload to some extent. Participant one notes that it does not contribute. This is because he treats incoming CC-mails as informative mails, not requiring action, making them easy to deal with. Both participant three and four created a separate CC-inbox, helping them to filter their e-mails, which we will

discuss further in section 4.4.. Participant six notes that: *''In 40% of the incoming CC-mails, it is unnecessarily used. When saying unnecessary, I mean I do not have to do anything with these e-mails. (...) Overall, I feel like we are CC-ing too much to the entire world''.* The last sentence describes the act of inappropriate broadcasting, which is related to both the CC- and forwarding function. Next to this, 13 out of 21 respondents from the public sector database acknowledge the contribution of the CC to overload. No outstanding differences between job-roles are found regarding this perception. Four participants indicate over-use of the forwarding function, to different degrees. Participants three and five state that it happens a lot, too much, where participant six indicates that it is used too much, but not that much. Five of the participants mention the forwarding function is mainly serving information purposes. Next to this, back-covering (2,6) and laziness (6) are indicated as main underlying causes for this over-use. The act of buck-passing is not identified. Four of the participants acknowledge forwarding over-use to contribute to feelings of overload. Indications on the extent differ from a little (6) to reaching the same extent as the over-use of the CC-function (2,5), to reaching a larger extent as the CC-overuse (3). Directly related to the forwarding and the CC-function is the reply-to-all function. Only nine participants from the database answered questions as to whether the reply-to-all function contributes to perceptions of overload. All nine participants indicated contribution to overload of some extent. Four participants from current research indicate the over-use of this reply-to-all function. Information purposes are noted as the main reason for this over-use. However, the ease of replying to all is said to play a role too, next to back-covering. Overall, the reply-to-all function can be said to contribute to feelings of overload. It is indicated to contribute similar to the CC-function, where others indicate it to contribute to a small extent.

Moreover, the inappropriate use of e-mail as a communication tool is not found to contribute to feelings of e-mail overload. Four participants indicate over-use of e-mail in these terms. Mostly mentioned are situations of complex issues, urgencies and confrontations. E-mail is said to lack the nuance in some situations, next to the time saving achieved by the use of other media in these situations. None of the participants indicates clear contribution to overload regarding this inappropriate use. However, participant six notes that in 40% of the cases, communication could have been done differently, resulting in more efficiency and effectiveness. Likewise, data from the public sector study indicated that all participants experienced over-use to some degree. However, in this research, no question as to degree of overload caused is posed, lacking a clear indication. Underlying motivations are similar to current research, noting quality issues causing misunderstanding. Next to this, spam or commercial e-mails appear to be overall barely received. Good spam-filters are the explanation for this. Only one participant (6) indicates to receive 10 of these e-mails per day. He indicates the easy dealing with these e-mails *''I can delete them all in three minutes''*, however, indicating that spam contribute in terms of volume to overload. Similar results are found in the public sector study, where only one participant indicates some contribution.

Formality e-mails are the last category to be discussed. All participants indicated to receive these e-mails. The perception of receiving these e-mails differs largely. Some experience these e-mails as pleasant and a normal thing to do, where others experience them as pleasant when providing an extraordinary service, but to not appreciate these e-mails out of habit. Five out of six do not consider formality e-mails to contribute to feelings

of overload. Participant one indicates that *''If everyone would not send the e-mails I consider to be useless, I would have 20% e-mail less'',* pointing at the accumulation of useless e-mail. Overall, formality e-mails cannot be said to contribute to overload.

4.3.2. Content- related factors
Related to the content of e-mails, unclear expected actions and unclear language are experienced by the participants. The main issue lays within unclear actions rather than unclear language. Participant five indicates that the over-use of the CC-function is related to these issues, receiving e-mails he does not have anything to do with, not understanding context nor purpose. Both are found to contribute to feelings of overload to some extent, since it causes work to lay still, because actions have to be taken to clarify what is going on. From the other database, 14 of the participants indicated problems in unclear writing to contribute to overload. Here, no distinction between unclear language and unclear actions are made. No uncertainty about deadlines is experienced. Next to this, large attachments cause problems for two participants, in terms of time required to process these attachments through a series of actions to be undertaken. These participants indicate that it does contribute in terms of workload, and therefore to overload, but not that much. The unclear use of subject-lines does not appear to contribute, with two participants noting to receive it occasionally and none of the participants considering it a cause of overload. On the other hand, 10 out of 21 participants questioned in the public sector study recognize poor use of subject lines to contribute to overload to some extent. The problem related to poor subject lines is difficulty in prioritizing, noted by two participants.

4.3.3. Individual-related factors
As an effort to indicate personal characteristics, the question whether the participants feel obliged to respond to incoming e-mails immediately was asked. Participant six indicates a strong yes, mentioning to feel obliged to respond as soon as possible. Most of the participants indicate to feel obliged in certain occasions, depending on the sender and the urgency of the message. None felt obliged to respond immediately, but all felt that a response should not take too long. In literature, the employee status and job-role are said to play a role. Here, managers are expected to score highest in terms of overload. However, in our research, no clear indication of this deviation is present. Barley et al. (2011) state that the hours worked is positively related to the degree of overload experienced. Knowledge workers are found to work less hours (36 and 38 hours) than the account managers (45 and 50 hours). Also, the daily e-mail volume received differs among participants. Next to this, the workflow related to different job functions is suggested to play a role. An overview of the participants' workflows is provided in table 2: Participant workflow indications.

Table 2: Participant workflow indications.
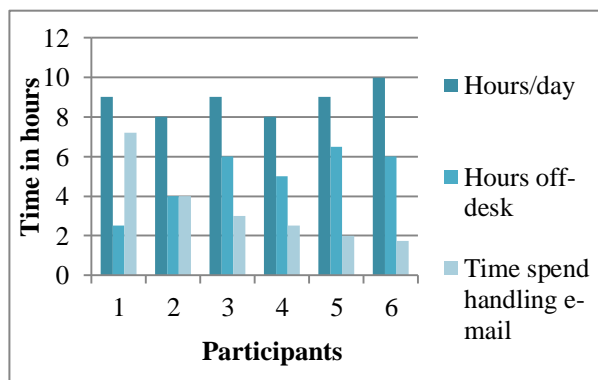
The amount of hours worked and the amount of hours spend at reading and responding to e-mail for each participant are acquired. A clear distinction between functions can be observed, as already pointed to in the participants section 3.1.. Here, knowledge workers are found to spend more time behind their desks, 7,5 and 4 hours respectively, consuming more time on coping with e-mail (80 and 50 percent of time) than do their account manager colleagues (22 and 17.5 percent of time), who are spending 2,5 and 4 hours behind their desks. Team managers fall in the middle category, spending 33 and 31 percent of time on e-mail management. Next to these quantitative results, qualitative results indicate that employees working only few hours per day behind the desk are more likely to work extra hours for them to keep up with e-mail. Therewith, both account managers and a team manager indicate that they could not fulfil their job without spending this extra time. This possibly indicates them to be more likely to experience feelings of overload. Related to this, one participant notes that *''you are paid more to be more available''*. This might be a reason for the acceptance of the indicated overwork.

4.3.4.   Organization- related factors

All participants have access to their work-mail outside working hours. Knowledge workers have access to their laptops where both management functions have additional access on work-phones. All participants express to have checks on their work-mail out of working hours, to different degrees. Both knowledge workers indicate to make use of this possibility only in very 'busy times', for their own peace of mind. Management function groups use this possibility significantly more, pointing at daily consulting of e-mail outside working hours. On the question whether this possibility contributes to feelings of overload, opinions differ. Knowledge workers, using the option only limited, indicate that it has a positive effect, allowing them to decrease feelings of overload. Next to this, the account managers and one team manager indicates mixed feelings. On one hand, it enhances control over daily workload, where on the other hand, one has to protect him/herself from feeling obliged to use it. Participant four argues that it definitely contributes to feelings of overload, consistent to literature (Barley et al., 2011). Three of the managers acknowledge to use their phones while driving to attend to e-mails. This is considered irresponsible driving behaviour, which is recognized by these managers. In the database, the topic of off-work access is not treated. For the insurance company, e-mail is found to be of major importance to finish the job. It determines a large part of work, for all job-functions. Also, it changes their plan for the day significantly, through the receiving of priority e-mails. This is supported by data from public sector employees. Here, all participants who answered the question about the extent to which e-mail changes their plan for the day acknowledge it certainly does, depending on urgency. Barley et al. (2011) suggest that the more important e-mail is in fulfilling the job, the more likely feelings of overload are to be present. This high importance of e-mail results in a question regarding their training in e-mail management. Three of the participants participated in such a training, indicating it was very comprehensive. However, one participant mentions he did not apply any of the tactics or strategies he learned for time reasons. Three participants indicate to be interested in following such a training, because they think there is still more to win for them in e-mail management. The lack of user training is clearly expressed by participant four stating he would implement a certain strategy, *''If I had just had more insights on how to do it''*. Observations of the database show three out of 21 participants participated in an e-mail related training. Seven of the participants that did not took part in such a training indicate

to be interested, for improvement of time management, functionality and learning how to write clear e-mails. Those who had no interested said it was 'not for them', indicating something personal as a underlying reason. Also, some participants indicated to handle their e-mail well, and therefore not to need such a training.

The particular organization does maintain certain rules and regulations for e-mail use. These include response times of 10 working-days and specific signatures. None of these are linked to a time-restriction in terms of access to e-mail or filing procedures, which according to literature might simplify e-mail management for employees. In terms of expectations about responsiveness, one participant mentions response is too slow, resulting in deadlines not to be made. Likewise, data from the database reveals that none of the 21 participants are aware of any guidelines for effective e-mail management. Here, presence of these guidelines is found to be useful, mainly to create awareness. Furthermore, different filing decisions are found to contribute to overload. All participants use folders to sort their e-mails. Two participants can be regarded as so-called frequent filers, with an inbox sizes of 1 and 39, daily cleaning their inbox. The other participants are considered to be spring cleaners, using folders but not cleaning their inbox daily, with inbox sizes varying between 38 and 3150 e-mails. Indications of cleaning frequency vary between 5 times per year to once a year, not all fully draining their inbox. Those who file frequently are expected to have different strategies than spring cleaners. As noted in section 4.2., participants with the largest inboxes, and 2500 respectively, are found to experience the most complications when retrieving e-mails (4,6). The employee status is found to play a role in perceptions of overload, as indicated in section 4.1. Different work-flows determine the amount of time spend on e-mail, causing those that work more hours off-desk to be more likely to keep up with e-mail out of working hours.

4.3.5.   Technology-related factors

To start with, the storage space in the organization was found to be sufficient. However, with the old system, the limited storage space was indicated to be a main cause of frustration and stress, causing feelings of overload. Besides the use of Microsoft Outlook for e-mail purposes, all participants use it for planning purposes as well, through the agenda function. Here, appointments are scheduled. All participants indicate this function to be positive, enabling them to switch within one system between different functions. This function is not found to contribute to feelings of overload, rather enabling participants to manage their work in a better way. During interviews, a bad connection to the server was observed, which is one indication of a technological incapability, causing annoyance. A lack of knowledge on this field becomes evident by some participants not being aware of certain possibilities, such as the creation of a separate CC-inbox. Awareness about the possibilities might improve efficiency and effectiveness, decreasing perceived overload. Likewise, public sector employees indicated a lack of knowledge, indicating not to know how to change notification settings, for example. Third, these notifications come along with incoming messages, and can be set as a pop-up, sound or both. All participants had the sound off, but the pop-up on while they had put it off. A reset of settings through the new e-mail system may have caused this return of the pop-up. Public sector employees were found to use the pop-up and sound notifications much more, with 12 participants using both sound and pop-up. The time-difference between both study might be a reason for this, allowing people to experiment more with e-mail settings. 20 out of 21

participants indicated it would be useful to turn off these notifications, corresponding to findings of current research. One participant indicating it to be not useful mentions he checks his e-mail whenever he wants, implying that notifications do not influence him in his e-mail checks.

4.4.   Strategies and Recommendations

Different participants have different strategies to cope with their e-mails. However, for all participants checking e-mail is the first thing they do in the morning. Regarding the speed of processing e-mails, knowledge workers process e-mails depending on the content of the incoming e-mail. The decision whether to process immediately or later is related to the urge and complexity of the incoming e-mail. Both manager groups spend less time behind their desk, forcing them to process e-mails between and after appointments. The recognition of e-mail as an important part of work allows for strategies in terms of scheduling (Soucek & Moser, 2010; Sumecki et al., 2011). Participant 6 indicated that making conscious decisions about when to process their e-mail in terms of their levels of focus and concentration would increase their efficiency and effectiveness. Some e-mails require more creativity and focus than others do, allowing for a deviation. However, avoidance of e-mail is not always found to be achievable due to incoming emergency-e-mails, demanding a fast response. This finding is consistent with literature (Dabbish & Kraut, 2006; Jackson et al., 2001). One interesting prioritizing strategy is that of participant five, who schedules e-mails that require a response or action in his agenda. Other participants indicated the role of memory to be important when prioritizing e-mails. Prioritization of e-mails plays an important role in the scheduling process. Within the organization, barely any tools are used to prioritize e-mails. Next to the above mentioned agenda deadlines, flags are used by the participants on an occasional level. The role of memory is shown to play a significant role in the process of prioritizing. However, some participants believe using prioritizing tools would benefit them in managing their e-mail. Others indicate it would not benefit them since they pursue their own strategies, e.g. agenda use, urgent immediate etcetera. Interestingly, participant six indicated to experience issues when e-mails that are related to multiple folders have to be filed. Regarding filing strategies, all participants use folders related to senders or subjects to sort their e-mail. All participants maintain a distinct folder system. A clear strategy of structure and insight through these (sub)folder systems are crucial in reducing feelings of overload (Powell, 2002). Another strategy, related to the reduction of volume, emerging from the interviews is the use of a separate CC-inbox, distinguishing CC from other incoming e-mail. This was found to create more clarity in the inbox. Furthermore, as mentioned in section 4.3., turning off the notification sound was perceived to be an effective strategy in reducing interruptions and perceptions of overload. On the proposition of using automatic sorting rules, some indicated the thought of it being useful, better organizing the mailbox and increasing efficiency. On the other hand, other participants indicated the importance of control in deciding what goes where. Within the organization, spam filters are already successfully used. Two of the participants use to-do or action folders, in a successful manner. Participant five, maintaining the agenda-strategy indicates his strategy has a similar concept, just replacing folders by agenda. Two other participants indicate it would be useful to use such folders. Participant four indicates to be interested in pursuing such a strategy, requiring more knowledge on how to do it. The final participant mentions he does not feel the need to use such a system, since he feels to keep up with e-mail quantity. Several participants proposed the limitation in terms of times when e-mails can be send/received.

Related to this, participant four indicated that not attending the e-mail significantly helps. This is because of the urge felt to deal with the e-mail after attendance.

5.   CONCLUSION

In this section, a reflection on the information and results provided in the previous sections will be conducted, in the form of a conclusion. Next to this, limitations of research and recommendations for further research are discussed.

5.1. Diagnosis

Research outcomes of this paper support the idea of e-mail overload as being determined by terms of volume and the individual perception of this feeling, as proposed in literature. The notion of different status types to describe overload is less supported, rather pointing at the content of the e-mails contributing to the notion of overload. As a result, e-mail overload can be described as

- A feeling, based on an individual perception
- A large volume of incoming (and outgoing) e-mails on a daily basis.
- The receiving of demanding e-mails in terms of content, requesting many or time-consuming actions.

The frequency with which overload is experienced differs per individual and is further discussed in the following sections. Overall participants believed e-mail had a positive effect on their lives. Sometimes, especially when workload increases, the feeling of being ruled by e-mail can be experienced. Again, as already implied in the definition, overload differs per participant through the notion of an individual perception.

5.2.   Symptoms

By identifying several symptoms which are found to be related to overload, actions can be undertaken to reduce overload. First, stress, as a main psychological symptom in literature, is a supported symptom in this research. Three participants clearly indicated to experience stress through e-mails in presence of overload. The team managers do not recognize e-mail to be a source of stress at all. This may be related to their job function, possibly demanding a low level of stress- sensitivity. Next to stress, a feeling of fatigue and guilt are indicated to be key symptoms for overload. For guilt, dependency on others is indicated as a main reason for not being able to keep up. This guilt is related to the content and sender of the message, therefore being an indicator of overload through the new definition (5.1.). Next to this, when overload is experienced, clear symptoms are that of inefficiency and ineffectiveness at work, which is consistent with findings in literature (Mark et al., 2012). In terms of psychological symptoms, frustration, stress and exhaustion are the most frequently mentioned symptoms, being consistent with prior research (Barley et al., 2011; Reinke & Chamorro-Premuzic, 2014; Sumecki et al., 2011; Thomas et al., 2006). Only participant three indicates to not experience psychological symptoms. This might indicate that woman are less influenced by e-mail as a communication source. However, there is no clear evidence of this suggestion yet. Reminders are rarely received, with 3 reminders per week indicating the largest amount. They are not indicated to be related to occasions of overload. Rather, reminders are suggested to be a symptom of dependency on others and unclear time frames. The retrieval of e-mails was found to be easy for most of the participants. However, participant four clearly indicates to experience difficulties in retrieving e-mails. This could be linked to his strategy for e-mail processing, combined with his large size of inbox (3150). Participant six, inbox size

2500, indicates to experience no problems with retrieving e-mails, possibly indicating the difference in (more) efficient e-mail management. Experiencing difficulties in retrieving e-mails may therefore be a symptom of overload.

5.3. Key-factors causing overload and proposed recommendations

Finally, the main research question can be answered. Several factors proposed in literature are found to contribute to feelings of overload in the particular organization. Combining information obtained from both current research and the available database, key factors contributing to feelings of e-mail overload are identified. To start with, the over-use of the CC/BCC-function is found to contribute to overload for a rather large extent. CC is said to be linked to the over-use of the reply-to-all function, increasing its importance as a key-factor causing feelings of overload. Furthermore, CC is found to be related to poor understandings of the action required and language used. Therefore, by reducing over-use of the CC-function, feelings of overload might be significantly reduced. This reduction can be achieved by a common understanding on how to use the CC-function, and might require organizational rules to be maintained. More specific, the CC-function should be used for information purposes only, not for those CC-ed to take action upon. For the remaining CC-mails received, the creation of a separate CC-inbox appears to create a more organized and clear inbox. An educational approach should be proceeded to reduce overload. Another factor found to contribute to feelings of overload is the overuse of the forwarding function. The overuse of the reply-to-all function appears to relate strongly to the CC and forwarding function. This might be one of the explanations for his contribution to feelings of overload. Through their interdependency, the use of a clear understanding on when, how and with whom to use these functions will decrease e-mail volume, time spend inefficiently and therefore decrease overload.

Next to this, the inappropriate use of e-mail as a communication tool is another key factor found to cause feelings of overload. The difficulty of the content and nuance of the setting play a major role. When nuance is needed, or complicated messages are transmitted, e-mail should not be used as communication medium. Rather, a richer medium should be attended. Again, by educating employees on when e-mail is or is not an efficient communication tool, volume and double work will decrease, improving efficiency and decreasing feelings of e-mail overload. In addition to this, the lack of clarity among language used and even more the ambiguity regarding expected action are found to cause feelings of overload. The link to inappropriate broadcasting is made, possibly reducing these factors of ambiguity through the educational approach prior mentioned. Furthermore, training can be provided to communicate in an unambiguous way. Participants indicated the clear formulation of deadlines, but many indicated receiving reminders before the deadline was reached. Achieving clarity among time frames is the main strategy to solve this problem. Training employees to communicate the right deadline should make the sending of reminders redundant.

Large attachments appear to be another key factor causing overload. By only sending attachments once, avoiding duplication of work, the impact can be limited. Additionally, the presence of individual factors was indicated multiple times by several participants and therefore cannot be neglected. However, it is extremely difficult to measure one's personality through interview questions, and through limitations to the research, not a clear view of personal characteristics is shown. Some participants indicated to feel more guilt than others, feeling more obliged to respond to e-mails directly and monitor e-mails on different frequencies. These findings are related to the content and context of the e-mails sent and the work-flow of one's job as well, hence making it difficult to determine a distinct characteristic to be present.

Also, the job-role is one key factor identified to relate to overload. The more hours, worked, the more e-mail is found to be received. Those who spend less time behind the desk are, for a lack of time, more likely to process e-mail out of working hours, working overtime in order to keep up with e-mail. Hence, workload is simply too much. The use of administrative employees that could support these low-time-behind-desk employees in their e-mail management might reduce e-mail overload. This is, of course, an organizational decision to make. In addition, the organization provides all participants access to work-mail outside working hours. This is perceived as good on one hand through increased control over e-mail, while on the other hand the risk of overuse is mentioned. Several participants proposed the idea of limiting the possibilities to send and/or receive e-mails after a certain time of the day. This organizational regulation approach would prohibit more stressed users from the feeling of e-mail ruling their life.

Moreover, e-mail is found to be of crucial importance within the organization. This recognition allows for scheduling and managing the work-flow. The use of agenda-planning or to-do- and action- folders is a structured manner of sorting and prioritizing e-mail. This creation of structure and insight through (sub) folder systems is crucial in reducing feelings of overload (Powell, 2002). As prior mentioned, a clean and organized inbox is related to a (more) easy retrieval of e-mails, and increased feelings of control. A draining of the inbox every 24/48 hours might be an appropriate strategy to apply here. Also, for prioritizing, rarely any tools are used. In order to elevate the mind, the use of prioritizing systems may allow one to become more organized and have a clearer memory. Besides, the lack of knowledge on how to prioritize and use Microsoft Outlook efficiently and effectively is another key factor, causing overload. A lack of training provided by the organization, especially with e-mail as such a crucial tool, causes poor e-mail management strategies. These poor e-mail strategies are related to inefficient use of time and ineffective workflows. By providing a training which is 'to-the-point', maintaining a hands-on approach, to all employees which are in daily contact with e-mail, efficiency and effectiveness should increase, reducing perceptions of overload. Of the organizational guidelines and procedures which are present, none is linked to a time-restriction in terms of access to e-mail or filing procedures, which according to literature might simplify e-mail management for employees. This indicates that there is still a lot to win for organizations on this field. Training employees how and which folders to use, how to deal with two subjects in one e-mail, how to write a subject line creates alignment of strategies, providing a grip to e-mail management. Moreover, all participants indicated that the notification pop-up or sound when receiving an e-mail are key factors causing overload. Therefore, using no notification at all is recommended to reduce interruptions, improving efficiency and effectiveness of the workflow, reducing overload. Finally, where spam was not found to be an obvious contributing factor to feelings of overload, the role of the spam-filter should not be underestimated. Without this spam-filter, e-mail volume received daily would be significantly higher.

5.4.　Main contributions to theory

Finally, the main contributions to theory can be proposed. First, the proposed definition of e-mail overload as the presence of different statuses of e-mails in the inbox is not acknowledged in this research. Here, the definition that arose from several interviews relates to the expected action that accompanies an incoming email. Therefore, we define e-mail overload as the receiving of demanding e-mails in terms of content, requesting many or time-consuming actions. The individual and volume related aspects are confirmed in research. Second, the impact of workflow on e-mail management, and thereby e-mail overload, has only received little attention in literature yet it presents a major problem. Appropriate strategies for each job role should be presented, taking workflow, workload and function into account. Third, being dependency on others appears to be a major factor contributing to feelings of overload, which is not mentioned explicitly in literature. Here, the loss of control triggers feelings of stress. This dependence on others is related to the receiving of reminders and feelings of guilt. Clear understandings of deadlines and communication may reduce bad experiences with this dependency.

5.5.　Practical recommendations

Many recommendations are provided in section 5.3. already. However, to be more specific, key points for the particular organization are proposed in this section. To start with, there should be training in e-mail management with a hands-on approach. With hands-on, the focus is on practical tips and tricks of e-mail management. Something that benefits all employees that deal with e-mail in the company. Here, I suggest that training is provided in groups that are communicating with each other to give space for discussion. This is the first step in achieving common understanding. Next to this, training in how to deal with e-mail in a more effective way can cope with multiple other factors contributing to e-mail overload. For example, some of the participants used a separate CC-inbox and found this very useful but only few participants knew how to create such a separate inbox. Next to these technical training, training on when and how to communicate could establish a shared way of e-mail communication. Clarity on how to formulate deadlines, when to use (B)CC/forwarding could reduce misunderstanding and safe time and energy. A second recommendation would be to take a closer look at the workflow of employees. Those who spend only little time behind their desk might need support, either in the form of an administrative worker, allowing for paid overwork or by reducing workload. The flow of work into time for oneself is a bad development, as employees' health and wellbeing should be an important point of the agenda. Consequently the establishment of organizational regulation to comprehend e-mail culture could benefit the organization. These organizational regulations should be an extension of the common understanding developed through training. For example, regulations could include standards for e-mail traffic, e.g. no e-mail received between 23.00-06.00. Such time boundaries allow for extra work if needed, but protects employees for e-mail overload to some extent.

5.6.　Limitations to research

Several limitations tot this research exist. First, not all questions posed in this research are used in prior research in the public sector. Therefore, more insights are provided on some factors than on others. Also, a sample of six participants from one organization may not allow generalization of the key-factors identified. The combination with prior research, creating a combined participant group of 27, from different organizations, may be more generalizable. However, with a difference of 8

years, database outcomes might be less valid to conclude upon. Next to this, organizational culture, specific work-flow and the nature of the task play might play a role in key-factors contributing to overload, implying differences per organization. Lastly, individual perceptions of overload are said to differ. Due to a limitation of research to diagnosis, symptoms and key factors of e-mail overload, no in depth-research is conducted on personality characteristics.

5.7.　Recommendations for further research

As proposed through the research, differences between men and woman in e-mailing and their perception of overload might differ. No clear research has been conducted on this field. Furthermore, indicated in the interviews, the influences of increased tele-communications on driving behaviour would be an interesting topic to pursue. Participants spending little time behind their desk indicated their car to serve as desk, resulting in dangerous situations. Lastly, qualitative research on the benefits of introducing a limited time-frame on e-mail sending/receiving could be conducted.

6.　ACKNOWLEDGEMENTS

7.　REFERENCES

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8. APPENDIX

In this section, the data obtained from interviews is provided in the form of a summary of results in a table (8.1) and the database from prior research is provided in section 8.2..

8.1. Interview results overview

Person:	Participant 1	Participant 2	Participant 3	Participant 4	Participant 5	Participant 6
Company:	Large insurance company	Large insurance company	Large insurance company	Large insurance company	Large insurance company	Large insurance company
Department:	Private liability	Public liability	Mobility	Liability		
Function description:	Acceptant liability insurances	Acceptant Liability insurances	Team Manager	Team Manager	Senior accountmanager	Senior accountmanager
Classification:	Knowledge Worker	Knowledge Worker	General Manager	General Manager	accountmanager	accountmanager
			Background variables			
Job role?	Acceptor Liability insurances private sector	Acceptor Liability insurances public sector	Team Manager Mobility insurances department	Team Manager Liability insurances department	N.A.	N.A.
On average, how many hours do you work per week?	36	38	45	40	45	50
Average time spent AWAY from the desk?	1.5	4	6	5	6.5	6
Age?	51	56	39	42	44	48
Gender	Male	Male	Female	Male	Male	Male
			Observational numbers			
Total Inbox size	1	48	38	3150	39	2500
Average number of emails received daily	25	30	45	35	30	50
Business critical emails	20	23	40	31	15	35
			Diagnosis and quantitative outcomes			
Do you think e-mail has a positive/ negative effect on your (work) life?	Both. Positive because my work comes in through e-mail and so far, that has worked well. It can be negative when too much comes in, it makes my work busy.	Positive, it makes my work more structured. It's an enriching medium.	A positive effect, I cannot imagine work without e-mail anymore.	A positive effect, ability to reach someone with 'short lines'. However, expectations about reactionspeed and the amount received make it sometimes less positive.	Positive effect on work life. If email is used in the **right** way, it can help you do the job (more) effectively and efficiently. Email is a way of work through which I am able to create- and respond to messages on my own.	Positive on work, if I had to give a number out of 10, it would be an 8.

Do you ever have the feeling like you are being ruled by e-mail?	Yes, to a certain extent. It determines the situation whether and what action I have to take.	Yes, workload is determined by E-mail. It is very important in my work.	No, but I dont let it influence me that easily. However, the volume of email received is high.	Yes, in worklife. Email is constantly present in work.	I more and more experience that feeling. I can manage my emails at my own time, but so can others, causing e-mails to arrive at the 'craziest' times of the day. The expected responsetime is becoming faster, increasing the pressure to fulfil expectations.	Yes, because I have the feeling that I will have to respond to a message within a certain time period. This feeling has to do with how I am, a perfectionist, I find it difficult to let things go, I have to read all e-mails, be on top of my mail. I learn over time how to cope with it but I still have a lot to learn. Timepressure and my job (function) play a role in this. I experience this feeling a lot.
Do you feel able to deal with the amount of email you receive?	Yes, I am able to deal with it. Just not per se the same day. It remains controlable, I read it and decide whether and what to do with it.	Sometimes I feel unable to deal with it. Especially in the busy period (Sep-Feb)	No, I feel unable, that happens a lot. I have a lot of appointments and therefore not much time to manage my email, only a few hours per day. 1 day a week I try to manage and keep up.	In general yes. But not always, sometimes there is just not enough time.	Sometimes I feel **unable** to cope with it. My job function plays a role in this. I spend a lot of time off-desk with clients, leaving me to manage my email between companies and in the evening (sometimes outside official working hours). Next to this, I am a perfectionist and I want to get my things done, find it hard to let go. I can cope with my email but only by making long(er) days. If I don't work this extra time, I am unable to do my job (right).	I feel able to deal with the amount of email, but not within the strict 40 hours. I am making extra hours, within the 40-hour workweek I would not be able to deal with them.
To what extent is email (overload) a problem in work? No problem --> Major problem	It is a problem when too much e-mail comes in to manage in a short-time. It would be nice if incoming emails could be treated at that same time, it is not always possible. That can cause stress to a certain degree.	It is a problem when I do not have time to manage my e-mail, but the email is very important. I might not have time to answer, causing stress.	It is certainly a problem. I am responsible for sending, reading and receiving many emails. The volume can sometimes cause problems	No problem, I manage it. Sometimes it is not 'fun' because it can be a lot (volume, workload)	It is a necessity in my job, I am feeling responsible for email. When volumes become too high, it can become a **problem,** because I cannot make my deadlines.	I do **not** experience it as a problem. I believe that e-mail is overused though. Emails could be less, decreasing (work) pressure.
Do you experience a feeling of stress when an email comes in?	Sometimes. The notification shows from **whom** the email comes, resulting in knowing it is a 'difficult' email, sometimes resulting in stress.	Sometimes, depending on the sender I see through notification and work-pressure.	No, not at all.	Yes, depending on the subject of the incoming email. Sometimes the sender also plays a role.	Yes, not because an email comes in but because of the **content**. It is mainly the topic causing stress through a notification. Sender also plays a role because topics are linked.	Yes, through the subject line or the sender, showing it is something important. Emails which are linked to something difficult or 'homework'. The sender is causing stress the most. Through a different mindset I try to reduce the feeling.
On average, how many hours do you spend managing your e-mail per day?	7.2 hours (80% of time)	4 hours (50%)	3 hours (33%)	2.5 hours (31%)	2 hours (22%)	1.75 hours (17.5%)
How many hours do you	9	8	9	8	9	10

work per working day?						
How much time do you daily spend off-desk?	1.5	4	6	5	6.5	6
			Symptoms			
To what extent is email a source of stress in your (work)life?	It influences stress at the moments that I cannot manage more workload. Especially a lot of priority e-mails that have to be managed result in stress.	In the busy period, the **source** of email is a stress determining factor. Subject and sender as mentioned before.	It is not a source of stress in my work because I don't let it get to me. If there is a true emergency, I expect my colleagues to call me.	I would not say it is a source of stress. It is more a constant alertness, because e-mail is always there.	E-mail as a communciation tool is not the underlying cause of stress. It is the content of the e-mail that can cause stress.	It is a source of stress, but to a low degree. A 4 out of 10 if expressed on a scale.
Do you receive reminders because you did not respond to someone?	Barely any, perhaps 2% of all messages results in a reminder.	Sometimes, in 2,5% of my emails.	Yes, I do, incidentially. I find it very annoying when I receive reminders before the deadline is reached. Also, sometimes I decide not to respond because I do not see the urge, this might cause reminders as well.	Barely, perhaps 5 reminders per month.	Barely, perhaps 1 per month. I am very on top of my email and I do not miss out on anything.	Not often, perhaps 3 times per week. Usually this occurs because I am dependent of other people for providing answers, information or taking action. If they do not do their job in time, I receive a reminder. This is a **main** factor of stress for me, because it is out of my own control. Definitely contributing to feelings of overload.
Do you have trouble finding back relevant e-mails?	No, I am very organized. Also, the search function works very well.	No, the search function is working very well. I search on name of the client or subject, because I remember that.	No, I work with several different folders in which I sort my e-mails. I search on names, which I remember with the specific e-mail.	Yes, because I did not sort my things well.	No, I work with several folders based on client names, for both received and send e-mails. When I lost this system through a transfer of one Outlook version to another, I realised how dependent I am on this system. There are still physical folders but they are more and more replaced by digital ones.	Yes, sometimes, because we have a different system now. Due to larger storage space, I tend to sort out less because it is not necessary anymore. However, mostly I can find things, by having several folders on clients and years.
Do you often find unread e-mails, long after receiving them?	No, because I read my e-mails everyday and them decide what to do with them. I always see what comes in, just does not mean I act upon it immediately.	No, I see and read all of them. It is a conscious decision to act upon it or not. In very busy periods I have the feeling that information passes me by though, with important files taking multiple days to read while e-mails continue to stream in.	No, never.	No, I always read them, I do not leave any email as unread. However, sometimes it might be better to do so, reminding me what still has to be done.	Never, in the worst case I receive a mail and I read it on Monday, but that does not mean I oversaw it.	Never, I read all my e-mails and when they are very important I give them an exclamation mark. Every end of the week I go through my inbox to make sure I have not missed anything.

Do you feel guilty when you are not able to keep up with your e-mail?	Yes, I find that very annoying. Especially when it is toward clients and there is a certain time pressure, I feel very bad for not being able to answer immediately. I try to answer immediately, but sometimes I am dependent on others for answering questions and providing information.	Yes, that happens regularly, especially in the 'busy times'. This feeling of guilt is related to stress. It is a bad feeling.	No, I do not feel guilty. But it is not a nice feeling. For me, it is more related to fidget.	No, I do not feel guilty, because I cope with it in a selective way. However, I do not like to keep people waiting. (Mentions annoyment about people sending reminders before the deadline)	No, I do not feel guilty. But that is my own mentality. I am very structured but I do not feel guilt when I cannot manage. I will send an email that it will take a bit longer.	Yes, but that is due to my personality. I want to keep up with my emails because it is the main communication tool, I don't like missing out on things.
How does e-mail (overload) influence your work?	Only in times of extreme business, I become less effective or efficient because I might forget things.	It causes stress sometimes	Through e-mail, I receive a large part of my work. It is essential. However, I do think that we could deal with e-mail more efficient in this organization.	It influences me a lot. From e-mail, I obtain a lot of the work I have to do. I work 'on' outlook.	It determines my plan for the day. If I receive a lot of priority e-mails, other things will have to wait, causing a certain pressure.	It influences my work positively. Things have become more easy and faster! E-mail also offers a channel through which you can distinguish yourself from another. Fast responses are appreciated by others, just as keeping up with mail.
How does e-mail (overload) influence your mind?	It causes frustration, which has mainly to do with the content of e-mails. Unpleasant compositions of emails or inpatience cause frustration the most. When I HAVE to do something, I feel like I get to decide that for myself, I do not like to be lived by another.	I can cope with it, because I learned how to do so. It does give me a certain degree of stress. And this stress, in turn, influences my mind, causing me to become frustrated or tired. I am not likely to feel frustrated but feeling this high pressure on me causes exhaustion.	Does not influence me that much. I try to get it off my shoulders, Everything that can be easily removed or dealth with, I will manage quickly.	It does influence my mind in the weekends or when there are specific important deadlines. It might cause frustration, through people expecting answers, like they do not have anything else to do on their 'weekends'. 'Doe even normaal man'.	The content of the messages does influence my state of mind. The content can make me happy, sad, dissapointed or frustrated, it is not so much e-mail in volumes or the system itself.	It does not influence me that much, but for a small extent. Sometimes I am fed up with the volume or content of emails.
			Factors			
Do you feel like your colleagues over-use the CC/ BCC function?	Yes, the CC function is very loosely used.	Sometimes, yes.	Yes.	No, because I stimulate them to use the CC-function for information purposes. I like to be informed. CC can be used as a political tool, letting one send it and CC-ing the other rather than the other way around.	Yes, the CC-culture is growing bigger and bigger.	Yes.

What do you think is the main reason of (over-)use?	Information purposes, I assume no action is undertaken from using the CC function.	I think it is partly for covering their own back and partially with information purposes. They CC in order to give the opportunity to respond, to not be 100% responsible for an action, involve others.	A matter of distributing responsibility.	Information and tactical purposes.	Passing on responsibility is the main reason of use. Also, CC is used for information purposes a lot. Especially the combination of informing and assuring one is not alone in a decision occurs a lot.	For back-covering purposes.
To what extent does over-use of the CC function contribute to feelings of overload?	None. For me, it is not a cause of overload since information e-mails are easy to cope with.	To a certain extent it contributes to overload.	It contributes to some extent, not for a large part. I created a separate CC-inbox which helps me to separate these emails from my other incoming e-mails.	In the end, it certainly contributes to overload. But that is my own 'trap' and I realize that. 'Waarom pompen we zoveel mailtjes rond zonder dat er direct actie voor moet worden ondernomen'? Through the use of a CC-inbox, I sometimes forget to view this separate inbox.	It certainly plays a role, for an important part. These information e-mails can increase work-pressure, because of the reading and thinking about whether or not action to take. Less CC should be possible.	In 40% of CC-mails, it is unnecessary used. Unnecessary is for me that I do not have to do anything with it. When FYI is written down, it is clear and okay. But overall, I feel like we are 'Ccing too much to the entire world'.
Do you feel like your colleagues over-use the forwarding function?	No, not over-using.	Yes.	Yes, a lot is being forwarded and replied to.	No	Yes, it occurs too much.	Not thát much.
What do you think is the main reason of (over-)use?	Sending information to the ones it was meant for.	For information purposes and passing on responsibility.	For information purposes mainly.	For information purposes mainly.	For information and creating certainty.	It is a combination of providing information, laziness and distributing responsibility.
To what extent does the over-use of the forwarding function contribute to feelings of overload?	Not at all.	It does contribute, to a similar extent as the CC-function.	It does contribute for sure, for a larger extent than the CC-function.	n.a.	It does contribute, to the same extent as the CC-function.	A little, not much.
Do you feel like your colleagues over-use the reply-to-all function?	Yes	Yes	Yes, a lot is being forwarded and replied to.	No	Yes, it occurs too much.	Not that much.
What do you think is the main reason of (over-)use?	Because of the ease of replying to all. It occurs a lot as a response to a CC-mail, causing it to accumulate.	For information purposes and passing on responsibility.	For information purposes mainly.	For information purposes mainly.	For information and creating certainty.	It is a combination of providing information, laziness and distributing responsibility.
To what extent does the over-use of the reply-to-all function contribute to feelings of overload?	To a certain extent.	It does contribute, to a similar extent as the CC-function.	Combined with the forwarding function, it contributes to a larger extent than the CC-function	n.a.	It does contribute, to the same extent as the CC-function.	A little, not much.

How much spam/junkmail/commercial emails do you receive daily?	Barely any, we have a good spam-filter. Perhaps 1 message per week.	Very incidentially, perhaps once per month. We have a great spam-filter.	No, not at all. Good spam-filter.	None, good spam-filter.	Not much because of the spam-filter. Perhaps 2 per month.	Yes, 10 e-mails per day. Eventhough I have a spam filter.
To what extent do spam/junk/commercial contribute to feelings of overload?	n.a.	n.a.	n.a.	n.a.	n.a.	It does contribute, but you learn how to deal with it fast, I can delete them all in 3 minutes
Do you receive formality e-mails such as thank you, see you etcetera?	2 per day. They are 'you did not really have to respond-emails'.	Yes, 1 per day. They do not contribute in any way. Sometimes it is nice when I did a great job.	Yes, 6 times per week.	Yes about 10 per week.	I do not receive many. 20% of the cases I handle sends me such an email. I also do it a lot myself when someone responded fast or did their job well.	Not many, perhaps 2 per day.
To what extent do thes formality emails contribute to feelings of overload?	It certainly does contribute to overload. If everyone would not send the e-mails I consider to be useless, I would have 20% email less. It is nice when special things are appreciated, it should not become a habit.	Not much, because I only receive one of these e-mails per day.	Not at all. I appreciate this type of e-mails, to me it is something normal to do.	They do not contribute. It is a part of the organizational culture. I do not mind receiving these e-mails since they can be removed from the inbox quickly.	It does not contribute. I experience it to be pleasant to receive these e-mails.	It does not contribute. I find it pleasant to receive such mails, and send them a lot myself too. It is the organizational culture more **not** to do it.
Do you have access to your work-mail outside work-hours?	Yes, if I wanted to	Yes	Yes	Yes	Yes	Yes
How do you have access?	Laptop	Laptop	Mobile Phone and Laptop	Mobile Phone and Laptop	Ipad, Mobile Phone and Laptop	Mobile Phone and Laptop.
Do you check your e-mail outside work-hours?	Yes, but only in periods of extreem workload. I only use it to create a sense of peace for myself, rather than coming at work on Monday and experiencing overload	Yes, in extreme busy periods. I do it for my own sense of rest.	Yes, mostly at my laptop. I use my phone for easy-to-handle and short messages.	I try to do my work as much as I can in normal working hours. However, sometimes I check my email, not every night but a couple of evenings a week and in the weekend at certain times of the day. I read, see if action is requiredm only if I can solve it with an easy and fast response, I do so. Alltogether, I send quite some time on it.	Yes, a lot on my phone (60%), but also on my Ipad (nearly 40%). Only for easy-response e-mails I will take action.	Yes, daily per phone.

To what extent does the ability to check your e-mail outside working hours contribute to feelings of overload?	It does not. I make the conscious decision to make use of it in extreme busy periods. It contributes in a positive way for me, allowing me to decrease overload.	It is stress decreasing in extreme busy periods. It allows me for more flexibility.	Not. I experience it as pleasant to have this option. However, you have to protect yourself from feeling oblidged to use it. I do not feel obligated.	It contributes, both to volume and to my perception of overload	A little, there are two sides. It helps me because I have the freedom to do what I want, when I want to do it. On the other hand, if I choose to work on it, I decide to work while I am supposed to be off-work. I learned that when you check, you will deal with your e-mails and act upon them. Do not look is an important lesson I learned!	It has two sides. On one hand it gives a feeling of rest because of the increased control you are given, on the other hand, one might work too much so no rest is obtained. It is not about the possibility but the way I act upon it.
Do you think that e-mail is used too much where other communication media would be more appropriate?	Yes, sometime the phone is more practical and can better be used to solve complex issues. It can save a lot of time.	No.	Yes, some situations are not appropriate to use e-mail as a communication tool. Difficult issues or extreme urgencies are an example. Also when confronting people, it is better to meet face-to-face or use the phone.	No, the e-mails I receive make sense. Also, people call easy with eachother so I do not think it happens too much.	Yes, e-mail is used in many cases in which I believe calling would have been better to create more nuances.	Yes, with complex issues it is better to have a 'real verbal' communication.Also for explaining or arranging things having direct contact is more appropriate. Urgency - issues can better be settled that way, without passing on one's agenda.
To what extent does the over-use of email where other communication media would be more appropriate contribute to feelings of overload?	Does not contribute.	n.a.	Does not contribute to overload, more that I find it important to do it in a different way.	n.a.	No, it does not feel that way.	It is not that bad. In 40% of the cases, it could have been done differently, causing more efficiency and effectiveness. I am not sending reminders anymore, instead, I call.
Do you receive e-mails that are unclear, in the action related or the language used?	Yes, mainly in what action is required. I receive these e-mails 3-4 times a week. I have to read them a few times, doubting, so it stays as pending in my inbox. I have to call or email for more information and clarity.	Yes, sometimes.	Yes, sometimes.	Yes, mainly in what action is expected.	Yes, in maximal 15% of the cases. Mostly it occurs in what action is expected. Mainly through CC or BCC e-mails which you are put in while you are not aware of the subject.	Yes, both for the same amount.
To what extent do e-mails which are unclear in their action contribute to feelings of overload?	For a part, it contributes, since it causes work to lay still. It annoys me.	It causes me to take more action, it contributes, compararble less than the CC-function.	It causes overload, if I have more time I will respond, if it is CC I let it go or I let someone else have a look at it.	It definitely contributes to my perception, I have to take many actions, causing frustration sometimes.	Not much, for a small part.	Not that much, it requires a follow-up action to figure out what the purpose of the e-mail is, but that does not cause stress for me. Mostly I call to get things clear.
Do you experience problems regarding unclear deadlines?	No, mostly it is mentioned clearly when it is expected.	That occurs, causing extra work.	No, deadlines are clear. Sometimes they are just too soon.	No.	Yes, that occurs as well. Deadlines are mostly formulated **but** after 2 days you receive an e-mail whether it is done yet, while the deadline has not been reached. More clarity would be good.	No.

To what extent to e-mails which are unclear in their language contribute to feelings of overload?	It does, for a limited part. Especially accountmanager reports, not understood e-mails.	Does not occur much, to the same extent as unclear actions.	Language is not that much of a problem.	Little, in general communication is very clear.	Does not happen that much. Perhaps 10% of these e-mails contains rather unclear language. Does not contribute.	Not that much, less than unclear expectations about actions.
Do you experience problems with e-mails having many/ large attachments?	Yes, I rather receive an email with no attachments, it takes time to open the attachment, sometimes I have to determine whether they should be printed and print them.	No, not anymore. Used to be a problem when storage space was very limited.	No, not anymore.	No, not anymore.	No, not anymore.	Yes, when an e-mail has many attachments, sometimes you are expected to will some of them out and use multiple documents at the same time. Using two screens makes this process easier.
To what extent to problems related to receiving large attachments contribute to feelings of overload?	They contribute, but less than unclear language and action.	n.a.	n.a.	n.a.	n.a.	Not much, the attachment itself does not contribute, it is more the related action that contributes.
How important is e-mail to finish your work?	It is very important. If e-mail did not exist, alternatives are needed.	It determines a large part of my work. Work arises through e-mail, I could not work without it. E-mail determines work, not all of it but for a big part.	Very important. It is the main medium for information sharing in my team. I work on different location so much information is shared (when I am not there, informing).	For a large part my work arises through e-mail. Also within my team, for information purposes it is very important.	Very important. Email is a communication and information channel next to other communication media. I could not work without, there would need to be a substitute.	Very important, for both internal and external communication. It serves for both information ánd communication purposes.
Have you ever participated in a training for more effective e-mail management?	No.	Yes, I had a training, but it was only for one hour.	No	Yes, I experienced it as very nice, comprehensive, I wanted to do something with what I learned but I never did.	Yes, I believe it was called 'GO-training'.	No.
Do you know if such a training is available?	I do not think so.	No idea.	Yes, one of my team-members did this training.	I do not think there is a standard training anymore. But I'm sure it is possible somehow.	I do not know.	I do not know. If there is one, it must be an external rather than an internal training.
Would you be interested in participating in such a training?	No, I think I am well organized.	Yes, because there is still a lot more to learn. I think I would profit from it.	I think that I know pretty much how to handle my e-mail, but it can always be better.	Yes, I would be interested.	No, I am not interested, I had this training just one year ago.	No, I do not think I need it. I do not experience stress, it is more about the volume rather than the way I manage my e-mail.
Are there official rules and regulations/ procedures for dealing with e-mails?	Yes, there is a 10 working-days policy for responding. For the rest there is only little regulation. Post-pieces have to get in the archive eventually.	Yes, 10 working-days policy for responding, 'vertrouwd communiceren', signature.	No, I do not think so. Only for 'signature'.	Yes, the intonation used in a message, the signature in the end of the e-mail, behavioural regulations.	Response-tems, when going on a holiday you have to turn on the out-of-office function. 'Vertrouwd communiceren'.	Yes, regarding the speed of respons, both for internal and external communication. Also the language used 'vertrouwd communiceren', standard signature. There also exists an informal organizational culture regarding responsiveness, people are too slow in responding to answers, causing deadlines not to be made.

Do you use your e-mail as a task manager? - Agenda?	Yes, we do. I do not use it daily but I am getting agenda-invitations daily.	Yes, the agenda is mainly used for others to schedule me in, it occurs daily.	Yes, that happens frequently.	Yes, every day. Mostly used for people to invite me to appointments. I enjoy the ability of this function. BUT:you have to be cautious that another does not fully schedule your agenda.	I schedule my e-mails in the outlook agenda for times when I will process them.	Yes, I live on that agenda. Client-meetings are all in there and are a main part of my job.
To what extent does the use of e-mail as a task manager regarding the agenda cause feelings of overload?	It does not contribute. I am the boss of my own agenda.	It does contribute, but to a small extent.	No, it does not contribute to feelings of overload. It is easy to process.	No, it does not contribute since short actions are needed to finish it.	No, it does not contribute. If it would not work well for me I would have to go back to a paper agenda. For me it works very well because by scheduling my e-mails I can block time that I am busy, to avoid being invited for a lot of things.	I am glad the function of an agenda exists. It gives opposite feelings to overload, because I can switch within one system between different tasks, it is functional.
Do you leave certain e-mails unread as a way of dividing what has to be done?	No, I create a folder with 'to-do' items. I do read these e-mails.	Yes, I use that a lot, working on colours (black when unread).	No.	No.	No.	I sometimes let e-mails unread as to do, but not longer than 24 hours.
Is checking your e-mail the first thing you do in the morning (at work)?	Yes	Yes	Yes	Yes, it is my way of starting the day.	Yes, first my phone and then e-mail.	Yes.
To what extent does e-mail change what you were planning to do for a day?	Very much. Emergency e-mails have priority and therefore change my plan for the day drastically.	It occurs a lot. Emergency cases especially change my plan for the day. It occurs often, especially in 'busy times'.	Email influences my plan for the day. I try to only check my inbox a few times a day. When emergency or actual topic-emails arrive, I tend to check more often and let it change my plan.	That occurs frequently, almost daily I experience that I set myself to do certain tasks for a day but emergency-emails having priority mixing up this plan.	Email changes my plans for a day to a large extent. It determines my plan for the day. If I receive a lot of priority e-mails, other things will have to wait, causing a certain pressure.	In 30-40% of the cases on a day, it influences my plan. E-mail forces me to schedule my day in a different way. Because I work too long I can keep up with my work, but I know that without making these hours, I cannot do my job right.
Is your e-mail programmed in such a way that you receive a notification of incoming e-mails? If yes, what is it?	The sound is off, that drives me crazy. I had the notification off, but somehow it is back now.	I have a pop-up. The sound is off.	I only see an envelope appearing on my phone. For the rest, all my notifications are off.	No, I do not have any.	On my phone I see an envelope and on my laptop I have a pop-up.	Yes, on my laptop I receive a pop-up and on my phone I get to see an envelope with a number behind it.
Do you think that turning this notification off will reduce feelings of overload?	Yes, it certainly does.	Feelings of overload are definitely reduced, I know that from my own experience.	Yes, for me it reduces feelings of overload.	Yes, I do experience it to be disrupting when I do have these notifications. It certainly helps.	I do think it will reduce feelings of overload.	Yes, I think so.

Do you process your e-mail when it comes in or at certain times? If yes, when?	It depends, depending on the type of e-mails that come in. When the e-mails are emergent or easy to solve, I process them immediately. Otherwise they go on the to-do list.	In general, I try to process everything as soon as possible. It depends on the complexity of the e-mail, when they are very complex I will have them waiting. I always see what comes in but I do not always immediately act upon it. Sometimes we have our agenda with e-mails in it, we also have to take care of those. The agenda-function keeps deadlines behind e-mails, I work my other e-mail around it.	Several times a day in between. I mainly process my e-mail at my home-work day. I try to do it every dat but that is not possible.	I process it when I see it. I read it, see what has to be done and determine whether I will do it now or later. In the end of the day I screen through my inbox again. I go through the stack a few times a day.	When e-mails come in, I schedule them in my agenda. Whenever I see them, I do something with them. (Either fast response of schedule them in).	Only at certain times, when I come home. Then, I try to do as much as I can. Or after client-visits. This is a conscious decision I make.
Do you feel obligated to respond directly on incoming messages?	No, not per se. It depends on the urgency of the message. I do feel obliged to respond within a few days, not immediately.	Sometimes, depending on the type of sender. But also on the person that sends it, both internal and external. Only with few persons I experience this.	No. Only if things are very important. (((so.. Yes) I like it when others respond fast so I also have to do consesions myself towards them.	Mostly yes. I live by the rule of the game that I should respond faster to my own team than to another. Those are my 'close' contacts.	That depends on the urgency, who sends it and the topic.	Yes, definitely to do it as fast as I can. I try to respond within 12 hours, except when I am on vacation. Mostly, people receive e-mails within 4 hours.
			Strategies and recommendations			
What strategies do you use to process your e-mail?	I use to-do folders to process my e-mail. If actions with important mails are finished, they either go into the archive or are thrown away. Informative e-mails go into a separate folder. Also, I created a waiting-for-response folder.	Unread e-mails are marked black whereas unread are marked white. Sometimes I leave my e-mail in my inbox for a long time without answering on purpose, which I then delete after some time. Information only e-mails go into a separate folder. Emails that require action are processed, then I leave them some time in my inbox or delete them. Important files go into the archive or saved on hard disk.	I have separate folders, based on topic. I move e-mails away from my inbox when they are completed. When they are still in my inbox, they still require action.	I do not have many strategies. I have a separate CC-inbox. Only when an action required to an email is fulfilled, the e-mail is filed in a folder.	I move my e-mails away to my agenda so I can schedule time to process them. When processed, they are filed in an appropriate folder. I like to keep my inbox clean.	I mainly scan my e-mails and prioritize in my mind. I make a decision whether to act immediately or to leave them because I need to think about them some more. Depending on the importance of the e-mails, they are filed in folders or deleted. In general, information is being saved and communication is removed. 50% of all emails that still require action I save in a separate folder or leave in my inbox. I like to have the information stored.

Do you think your productivity would improve if you would avoid e-mail contact at times of the day when you are most focused and creative?	Yes, I think it would increase my productivity, I experience many interruptions.	I think it is productive to use this time for e-mails , I think that in the morning, I have the most energy to process e-mails. It would increase productivity by being faster in processing my e-mails.	Yes, I already try to do that. However, it is not always achievable due to emergency e-mails, that will have to be processed when you see them.	Yes, but I would not avoid e-mail rather spend time on it on these times, because e-mail is a main part of my job. However, it depends on the incoming e-mails. It is not always possible.	Not specifically. That depends on the type of e-mails received. Sometimes it might be good to do your e-mails in this time specifically, because they require focus and creativity as well. Also, urgency can make this difficult to maintain.	I would rather use it to manage my e-mails at those times. To communicate with clients I need creativity and focus as well. If I manage my e-mails at less productive times of the day I risk making sloppy mistakes. If I would make more conscious decisions on **when** to manage my e-mails, it would increase my productivity.
Do you try to prioritize your e-mail? If yes, how?	I do not use any tools to prioritize.	Yes, some e-mails are set with a deadline and are displayed in the agenda. I use my memory to prioritize.	Yes, when it is very important I deal with it right away. Other e-mails that require action are placed in my to-do list.	Yes, I prioritize based on the sender. I do not use any toold but keep them in mind. Very incidentially, I use flags for important e-mails.	Client mails are first on the list, external clients are more important than internal clients.	Yes, by scanning and having the list in my head. When it is too much to handle, I write a list.
Do you think it would be beneficial to assign a priority (1,2,3) to each incoming e-mail, sorting them in priority order?	No, not whitin Microsoft Outlook.	Yes, I think it would be beneficial. However, in busy times there is not enough time to prioritize e-mails like that.	No, I have the ability to use flags and that is enough for me.	I think it would be useful, I do not use it at the moment. I could prioritize better.	For me it would not benefit. When emails are urgent, I deal with them immediately. If not, I prioritize them in my agenda.	Yes, I think it would benefit me by providing grips for managing my e-mail.
Do you think that assigning a 'respond to' or reminder date to incoming emails would be comprehensive?	No	Yes, I think it would make things more organized. This could improve the ease with which I manage my e-mails.	I think it would be, if e-mail had more technical possibilities.	It would be beneficial, to assure I do not forget!	Not in this way, for me, my agenda shows a reminder date through the planning and already provides a clear overview.	Yes, that would be better. Being clear and precise in your e-mail is important, then it would not be needed. Occasionally I schedule my e-mails in my agenda too, when they require many or time consuming action(s).
Do you use folders to sort your e-mail?	Yes	Yes	Yes	Yes	Yes	Yes
Did you ever experience difficulties in sorting or prioritizing due to unclear subject lines?	No	I receive some with unclear subject lines but it is not a real problem.	If the subject is very unclear, I change it and save it.	No, I read the entire message so I do not rely on the subject line for prioritizing or sorting.	No	No, but I experienced issues with people mentioning multiple subjects within the same e-mail.
Do you think that automatic sorting functions of e-mail would be beneficial for you? Or automatic sorting with a confirmation?	No, want to see it myself.	Yes, everything that looks cleaner and more organized reduces stress. 'Cleaning of the workplace'.	No, I do not feel a need for that.	I have a CC-inbox already. I am neutral, since on one hand it sorts it for you but on the other hand the message moves by without seeing it.	Yes, i think it would be more efficient since I have to undertake less actions.	No, because I like to see it for myself and decide what has to go in which folder. Control.
How frequent do you clean your inbox?	Every day	Once a year	Every 2,5 month	Once a year, but I never drain my inbox.	Because I work with my agenda and move items there, it cleans automatically. So daily.	5 times per year. But not draining my inbox.

Have you ever had a action or to folder? If yes, how successful was it?	Yes, I still have it. It is very successful for me.	No, but I think it would be helpful, helping me to work more structured and effective.	Yes, this is very succesful for me.	No, but it would be helpful, If I had more insights on how to do it.	No, but my to-do list is my agenda. So in some way I do, and it is successful.	No, never. I still think I can keep up with e-mail, in terms of quantity.

8.2. Database Public sector
From the entire database, only appropriate data which is used in this research is portrayed.

Person:	1	2	3	4	5	6	7	8	9	10
Company:	Ministry	Ministry	Ministry	Ministry	Ministry	Ministry	Ministry	Ministry	Ministry	Ministry
Department:	Beleid	Beleid	Beleid	Beleid	Beleid	Beleid	Beleid	Beleid	Beleid	Beleid
Function description:	Policy officer	Policy officer	Policy officer	Policy officer	Policy officer	Policy officer	Policy officer	Policy officer	Policy officer	Policy officer
Classification	P	P	P	P	P	P	P	P	P	P
Background Variables										
Job Role?	Policy officer	Policy officer	Policy officer	Policy officer	Policy officer	Policy officer	Policy officer	Policy officer	Policy officer	Policy officer
How long have you been doing this job (or similar jobs)[y]?	0,8	0,2	2,5	21	7	2	2	6	7	6
How many people report to you?	NA	NA								
On average, how many hours do you work/week?	46	40	40	40	38	35	43	28	40	40
Education level?	University	University	Univesity	University	University	University	University	University	University	University
Age?	28	37	27	54	34	31	34	33	50	31
Gender	Female	Female	Female	Female	Male	Female	Female	Female	Male	Male
Causes										
Do you think some people overuse the cc function? If so, why? Can you suggest how this could be reduced?	Yes, way too much. People want to be informed	No, not too much	Yes, irrelevant information. People want to inform me, also responsiblities	Yes, absolutly.	Yes. NA	No, don't troubles me.	Yes, culture that everybody wants to be informed, create awareness	Yes, culture that everybody wants to be informed, create awareness	Difficult to say, we need to be informed. Undoubtable I get a few too much	Yes, only send relevant information for me
To what extent is excessive copying (cc) behavior a cause of email overload for you?	It is a cause	Not. It's usefull	You see them and you can often click them away, not the biggest problem	A bit, you need to check what you need to do with it	No big contribution, see it, click it away	Not at all, never have the feeling of 'damn another email'	Not a big problem for me.	You have to check if it's for you, not a big source.	It contributes, but not very much.	It contributes, but not very much.
How many spam/junk mails do you receive per day? To what extent is this a cause of email overload for you?	5/ day, no overload (clear subject)	5-10/a day no overload, clear subject	Not at all, no source.	10/ day, throw them away, no problem	20 / day. Annoying but no overload	1-2 / day, no overload	Nothing, not infected yet.	1/ 2 months. Changed my email adres because of the spam.	10-20/ day. Contributes, also annoying peep / distracts	10-15/ day, clear title, no problem.

How many social (e.g. joke) emails do you receive per day? To what extent is this a cause of email overload?	Max 2/ week, no overload	Not often, do not contribute	Hardly, no overload.	Throw them away, no problem	Not once a week. No problem.	1/ month, no overload	1 / month, no overload	Nothing, seprated private email	2 / week, contributes in the sense that it takes time to throw away	1 / month, no overload
Do you think that some of your colleagues over-produce email messages? Can you suggest why?	Not too many, just certain people.	Commitees, informative emails.	Not too much, most of my collegues just walk in. No experience as overload	Sometimes. Only send work related info. More calling.	No.	Not that I noted it.	Yes, speed and easyness.	Yes, problems with awereness when to send	Undoubatable looking at the email free week. No time for transparant com.	Yes, different versions, give me the final one.
Do you think some of your colleagues sometimes use email when a phone call or face to face meeting would be more effective? Why do you think this is?	Not everybody. If it's urgent then go to someone.	Yes, in case of misunder-standings	Yes, in case of unavailability / urgency / misunderstandings	Yes, one of the biggest problems. Quality can be better when not emailing	Yes. Email is used to often, I determine urgency.	Often goes well, incidentically goes wrong.	Yes.	Yes.	Yes, misunderstandings, absence.	Yes, questions etc.
Do you sometimes use email when a phone call or face to face meeting would be more effective?	Yes. But at urgencies you can better call	Yes, in case of absence.	Yes	Yes, I'm not different then the others.	Yes, email is then easier (for me).	Yes, in case of absence.	Yes, but trying to limit it.	Yes, but trying to limit it.	Yes, you often note it afterwards from the response.	Yes, absence.
Do any of the following behaviours contribute to email overload:	NA	NA								
Blind replying (not including original email in reply)	NA	NA	No, that's a matter of mainting your own structure	Has to be readable then, np so far.	Difficult for the one in the cc, not for me.	Doesn't happen often. Could be annoying	Yes annoying, have to search back then	Don't think so, I don't receive those	Doesn't happen often, chain messages are more annoying	Doesn't happen often, could be annoying.
Poorly chosen subject lines (e.g. replying to last email even if it was on a different topic)	NA	NA	Yes, possible.	Problem, but not the biggest.	Often not a problem, only long emails	Could be better, but not a big problem.	No, does not matter much.	Yes, unrecognizeable	Yes, no subject is worse.	Yes, helps for setting priorities
Emails written in an unclear way (causing back and forth email traffic for clarification)	NA	NA	Yes, dicussions.	Yes, discussions.	No, difference between email and letter	Annoying, happens now and then.	Yes of course.	Yes, or too long, is also a problem	Worse is asking a q. to 3 people at the same time. Shift in coordination	Ineffective for priorities + extra email
Overuse of Reply to All function	NA	NA	NA	NA	NA	NA	Yes, I just delete them.	Definitely	NA	Sometimes functional, now not a problem.
Requesting read receipts	NA	Yes, same as out of office assistant	NA	NA	NA	NA	Sometimes troubling, but not too often.	Don't get those, doubles your inbox.	No, never troubles me, hardly used.	Yes, Very annoying.

Excessive use of attachments: using attachments when information could be fully included or summarised in the body of email	NA	NA	Attachement is usefull, but also requires cap.	No, very usefull. Summary in body.	Summary is usefull, expecially at long emails	Summary is usefull, expecially at long emails	I prefer attachements, no overload	No, attachements are often the documents	No, often usefull depends on the sender.	Summary is needed to show me what is relevant.
Have you ever received any training on how to manage your email effectively? Or how to use email software? Would it be usefull?	No, but thinking about it. Personal eff. Course	No, but would like to do one.	No, could be usefull e.g. time mangement.	No, I can find out things myself.	No, not for me, does for others.	Yes, CIEP training. Basic principles are usefull.	No, don't feel a need to either.	No, maybe for functionality	No, did do eff. Com. Helped also for the email. Specific for the email is not usefull	No, I don't miss it.
Are you aware of any company guidelines for the effective use of email?Do you think having such guidelines would be helpful?	Not aware of it it.	Not aware of it.	Not aware of it. Probably not usefull.	No. Could be usefull.	No. Yes, to create awareness	No, could help if availabillity is good.	No, could be usefull to create awareness, not necessary on paper	No, could be usefull to create awareness.	No, could be usefull.	No, could be usefull.
Do you check your email first thing in the morning?	Yes.	Yes.	Yes.	Yes.	Yes.	Yes.	Yes.	Yes.	Yes.	Yes.
To what extent does email dictate/change what you planned to do during the day?	Very much, emergency cases	Yes, depends on deadlines	Pretty strong, shift in work depending on urgency	Often, can be email as phone.	Yes shifts in planning, e.g. urgency.	Could change depending on political urgency. 1-2/ month	Not every day, but can change	Yes, can change.	Same as for other assignments.	Yes, can change, not email, but organization.
Do you have your email set up so you get notified whenever you receive a new message? (sound, icon in notification area, preview) If not, how often do you check for new emails?	Sound + Icon	Sounds for sure. Evenlop most likely	Sound + evenlop, don't know how to turn off. Curiousity check	Only envelop, sound if off.	Sound + evenlop, don't know how to turn off.	Sound + envelop, always check then.	Only the sound, no icon.	No sound, yes for the icon.	Sound + icon, don't know how to get the sound out.	Sound + icon.
Do you process emails as they are received or only process them at particular times of day (batch processing)? If so, when?	During the whole day	During the whole day.	Continiously.	Continiously, checking at notifcation. Processing urgent.	Reading when notified, processing urgent	Depending on workload I do it straight away or later	Depends on the time available, during the whole day.	During the whole day.	Depends on the time available, during the whole day. Urgent directly	Depends on time available + urgency
Do you feel compelled to respond to messages that are not time-critical just to clear your inbox?	Yes	No, I do open them and respond to urgent ones	Only when that is asked.	Yes, but not in all situations.	No.	No	No.	No.	Too much, should do it less.	No, it's a mess anywhys.
How much time do you spend away from your desk in an average day?	50% 4 out of 8	50%	1 1/2 out of 8	2 out of 8	50%	Very limited. 10%	1-2 hours	2 out of 8	1 1/2 hours out of 8	50%

Can you touch type?	NA	NA	No.	Yes.	Yes.	Yes.	Yes.	No.	More or less, need the spelling check badly	Yes, more or less.
Can you think of any other things that contribute to email overload in your work? (catchall question)	NA	NA	Email as a source of proof.	No, its just the amount and that you can't do your job then.	After holidays that email is spread out in the inbox, CT	voorschrijden d inzicht' sent by email. More work related.	No.	Communicate more by phone, create awereness	Informative emails, e.g. what is on the intranet. Newsletters are usefull.	Better means to get the priority in. Sender responsibility

Person:	11	12	13	14	15	16	17	18	19	20	21
Company:	Ministry	Ministry	Ministry	Ministry	Ministry	Ministry	Ministry	Ministry	Ministry	Ministry	Ministry
Department:	Ondersteuni ng	Ondersteuni ng	Ondersteuning	Beleid	Ondersteuning	Ondersteuni ng	Beleid	Beleid	Ondersteunin g	Ondersteuning	Ondersteuning
Function description:	Managing assistant.	Senior Advisor	Senior advisor	Secretary	Senior adm.	Department head	Project Director	Department head	Head of department	Head of department	Teamleader documental information supply
Classification	A	A	A	A	A	Man	Man	Man	Man	Man	Man
Background Variables											
Job Role?	Managing assistant.	Senior Advisor	Senior advisor	Secretary	Senior adm.	Head department	Project Director	Head of department	Head of department	Head of department	Teamleader documental information supply
How long have you been doing this job (or similar jobs)[y]?	10 years.	3 years	4-5 years	12 y	14 years	12 years	7 years	5 months	8 years	3 +1 = 4 years	3 months + 17 years.
How many people report to you?		NA	NA			NA	30-50	12	14	10	22-23
On average, how many hours do you work each week?	36	32	32+	18	40	40-42	36	40	40-50	40-50	40-50
Education level?	MAO	University	HBO	HBO	MBO	HBO	University	University	University	University	HBO
Age?	34	38	44	41	42	45	46	35	42	40	50
Gender	Female	Male	Male	Female	Male	Male	Male	Male	Male	Female	Male
Causes											
Do you think some people overuse the cc function? If so, why? Can you suggest how this could be reduced?	Yes. As proof / people want to be informed. Awareness	Yes, some.	Yes, culture	In mijn job role, not. I do notice from the email-less week that is got better.	Yes, people want to inform eachother. Awareness	Yes, could be less	Yes, some. NA.	Yes. NA	Often it is functional. Culture.	No, I ask them to cc me.	Yes, too much and too unstructured. Remove the cc function.

Question											
To what extent is excessive copying (cc) behavior a cause of email overload for you?	The inbox is faster full + it takes extra time.	It is a cause, but affects others more then me	By the culture we receiver more then is needed.	Not a problem.	We got a low email limit, we got a archive function, so exessive cc'ing is a problem.	Infuence of 5-10%	Depends on, if they put in what is relevant for you and what is not. Could be less. NP	Busy with refining adjust'g cc behaviour. 1/3 of not needed email	Not.	Not.	It's a problem.
How many spam/junk mails do you receive per day? To what extent is this a cause of email overload for you?	1-2/ day. No problem.	1/ week, no overload	5/day, no overload	5-15 Separate folder, no problem	30 / day. Not know if this is a big problem.	1 /month no overload	No amount, but no overload.	20-25/ day, does not contribute	Almost nothing, no problem.	Almost nothing, no problem.	20-30/ day. No contribution.
How many social (e.g. joke) emails do you receive per day? To what extent is this a cause of email overload?	2-3/ month, no problem.	Sometimes does not contribute	1-2/week no overload	3-4/ week, no problem	2/ day max. Chains could be a problem.	3/ month no overload	3 / week max, no overload	I Don't do that, no overload.	2/3 day, no problem	1-2 / week, no problem.	Not, no problem.
Do you think that some of your colleagues over-produce email messages? Can you suggest why?	Yes, e.g. hardcopy + email.	Not really.	Neutral, can imagine yes, more transparant responsibilties	No.	Yes, like I said exessive cc'ing, not always clear why they send to me.	Yes. E.g. politeness and misunderstandings	Yes, undoubtable. Email as communication device, but also amount + content	No, we discussed that within our department	1-2 maybe, but in general not.	Limited here, worse on other departments.	Yes, it's easy to do.
Do you think some of your colleagues sometimes use email when a phone call or face to face meeting would be more effective? Why do you think this is?	Yes.	Yes, in case of escalations	Yes, max 5-10%	Does happen, but not extreme.	Yes, we also discussed this. Proof + mutiple people at once	Yes, sometimes more effective to call	Yes, per definition. Problem solving is easier f2f.	Sometimes, but not very often. Much of it is under control	Yes, those 1-2.	Yes.	Yes.
Do you sometimes use email when a phone call or face to face meeting would be more effective?	No, I dare to say that I'm very direct and never did that.	Yes, in case of absence.	Yes, misunderstandings	Does happen, but not extreme.	Yes, I'm no phone man.	Yes, trying to be sharp.	Yes, when the other is not available, or groups.	NA	Yes, often close to deadlines, email is too heavy then. (better to talk)	Yes.	No, I used to do that, but we discussed this. Solved that issue.
Do any of the following behaviours contribute to email overload:		NA	NA			NA					
Blind replying (not including original email in reply)	No.	NA	NA	No, not really.	Yes, expecially since I have to forward.	NA	No. Could be difficult but then I throw it away	Doesn't happen often.	No, sender will have to think about what he sends.	Problematic when it happens.	Yes, cause you don't know the q.

Poorly chosen subject lines (e.g. replying to last email even if it was on a different topic)	Yes, could be an aspect.	NA	NA	Does not matter for me, even not with no subjects.	Yes, also no subject or too long.	NA	Not chosen is more difficult.	Could be better, but not a big problem.	No problem for me.	I don't enter subjects myself, no problem.	Yes, for setting priorities.
Emails written in an unclear way (causing back and forth email traffic for clarification)	Yes.	NA	NA	Could lead to an overload, happens as well.	Yes, discussion.	NA	Yes, per definition.	Annoying, happens now and then.	Yes, takes time.	Yes, dicussion.	Yes.
Overuse of Reply to All function	Yes. Not for me though.	NA	NA	Could lead to an overload, not sure if that happens.	Yes, email leads it own life afterwards.	NA	NA	NA	Yes, but doesn't bother me much.	Yes, happens.	Yes, people want to know eachothers responses.
Requesting read receipts	Yes, rediculous.	Find it usefull.	NA	Could contribute, but find it usefull.	It's usefull, but not in groups. Yes / no.	NA	Turned off.	NA	Yes, wrong culture element.	No problem here.	No problem here.
Excessive use of attachments: using attachments when information could be fully included or summarised in the body of email	Yes, extra capacity. Summary is not needed for me.	NA	NA	No overload.	Attachement needs to be opened = extra time. So yes.	NA	Yes, then I can choose, based on the email, to open the attachment.	Does not contribute to email overload.	No.	No problem here.	Yes. Summary is not always used well, could be better.
Have you ever received any training on how to manage your email effectively? Or how to use email software? Would it be usefull?	No, usefull	No. Are present but didn't do them.	No.	No, I have to do one. To write clear emails.	Yes, when we just got windows. Not usefull, it's personal.	Yes, CIEP training. www.impulsus.com	No, No. Other way around, learn how to commnicate then learn the email.	No. No, for people maybe, but not for me. Just like time mang.	No, could be usefull. Don't miss it.	No, no cause I don't have a problem.	No, no, don't know if it helps.
Are you aware of any company guidelines for the effective use of email? Do you think having such guidelines would be helpful?	No, could be usefull. If you do it then put it on paper yes.	Ethical yes, effective no.	Not aware of it.	No, could be usefull to create awareness.	No, would be interested in seeing this.	Not available.	No, yes will help, but it's more awareness.	No, no, make it open for discussion, not guidelines	No, could be usefull.	No. NA	No, yes we are with 3000 people, someone has got a good idea.
Do you check your email first thing in the morning?	Yes.	Yes. Continious checking	Yes.	Yes.	Yes.	Yes	Yes.	No, takes long to boot the PC	Yes.	Yes.	Yes.

To what extent does email dictate/change what you planned to do during the day?	Sometimes a lot, I control 2 inboxes.	Yes, but not too strong.	Happens, urgent goes first	Not.	NA	Same as for the phone, change in priorities.	Mostly it does not change the day.	Can change, but not mess up. Important not in the mail.	I try to stop that, but e.g. minister questions yes.	Yes, politic related.	It happens, but also by phone. In general I continue my schedule.
Do you have your email set up so you get notified whenever you receive a new message? (sound, icon in notification area, preview) If not, how often do you check for new emails?	Sound + icon.	Yes, special sound (tatataaa) + probably icon	Depends on if sound is on. Evelope is usefull, sound not	Sound (turned off) + icon.	Only sound.	Yes, but sound it off at the moment.	No I check when I want. Sound is off envelop is on	Sound + envelop. Not responding to sound	Sound + icon.	Sound + icon. Sound is very annoying.	No sound, yes for the icon.
Do you process emails as they are received or only process them at particular times of day (batch processing)? If so, when?	Trying to stick to my hours, but checking when I hear the sound. Process them straight away	Continious, Friday is a special day	When received.	During the whole day.	When I receive them.	Trying to do 3x a day, but curiousity	Processing during the day, end of the day it is cleared.	No, just a suitable moments.	Free moments, checking more often when expecting something.	Processing them when I receive them.	When I want to check, progress the easy / urgent then. Rest later.
Do you feel compelled to respond to messages that are not time-critical just to clear your inbox?	No, but I do always respond.	Yes, depends of.	No.	No.	Yes, to clean things up due to the limit.	No.	No, not at all. Sometimes I also don't respond.	No.	Depends on te email.	Yes. You forget them when you file them.	No.
How much time do you spend away from your desk in an average day?	1 1/2 out of 8	50%	50% 4 out of 8	1/2 out of 4	2 hours a day.	40%	70%	75%	1/3. 3 hours a day.	50%	60%
Can you touch type?	Yes.	NA	NA	Yes.	Yes.	NA	No.	No.	No.	Yes.	Yes.
Can you think of any other things that contribute to email overload in your work? (catchall question)	No.	NA	NA	On intranet published information goes by email as well, its too extensive.	No.	NA	Walk more around instead of mailing.	No just difficulties with everybody wanting to be informed	Don't want versions, just the final thing.	No.	Yes, abbonees to which I subscribed keep sending me emails.