The Problem of Email Overload
A Private Sector Case Study
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ABSTRACT
The amount of email people have to deal with is overwhelming. People tend to work extra hours in order to keep up with their email, and some are even getting ill because of all the stress this overload generates. This paper describes the causes and symptoms of email overload, the strategies people use to deal with it and possible solutions towards the problem. These are given with the help of a case study at a biotechnological company.

Keywords
Email, email overload, information overload, filing, email handling, email strategies, prioritizing email, backlog, stress, cc syndrome, pressure to respond, attention deficit disorder,

1. INTRODUCTION
Since the introduction of e-mail a lot is changed in the way we communicate. In most of the offices nowadays email is used more often than sending letters or picking up the phone. Because of the ease of this communication tool, people are inclined to send lots of it to whoever they want to. The resulting bulky e-mail boxes are a concern for most users. Other people, however, seem to have fewer problems in handling all these messages. How do they do it?

1.1 Purpose of this Research
"E-mail overload occurs when the number of e-mails being sent and received becomes too difficult to manage, overwhelming the user.” [Ing03]

Many people feel overwhelmed by the amount of email they receive and feel powerless to do anything about it. [Ing03] Even though this is a problem which affects billions of people around the world, so far it has received little attention from researchers. As a result, very little is known about the extent of the problem and the measures which can be taken in order to solve, or at least reduce, the problem. This paper is a first attempt to fill this gap in knowledge.

1.2 Problem Relevance
A couple of years ago, the editor of the MIS Quarterly wrote an article wherein he complaints about the lack of research done on the subject e-mail overload. [Web04] Although there are several signs that e-mail overload exists [Ing03][Ada02][Daw03], very little is known about it.

Other in-depth research was done by Thomas. His research states that not the bulk of e-mail causes the e-mail overload problem, but the content of the messages itself. The study state that unstable requests, pressures to respond, and the delegation of tasks and shifting interactants cause e-mail overload to occur. [Tom06]

However, this research is done at only one organization, and focuses only on the managerial role of program managers. E-mail systems are however contextually bound [Zac95]. This makes it logical to assume that more factors are involved when coping with e-mail overload. This paper will therefore check some of these propositions within another company and try to give a broader view of email overload.

The work by Whittaker and Sidner[WS96] state that three filing strategies exist: no filers, spring cleaners and frequent filers. However, this gives an indication how often a person files rather than giving a way in how to deal with in- and outgoing email in an effective way. Therefore, this paper will examine some strategies in order to find some ways to deal with the problem.

2. RESEARCH
2.1 Research Questions
In order to conduct this research, four research questions are formulated. These are given below:

• How does email overload affect people’s work and their general well-being?
• What are the causes of the e-mail overload problem?
• Which strategies do people use when handling email?
• Which solutions to the e-mail overload problem can be given?

In order to overcome email overload, the causes of the problem have to be identified. When these causes are known, solutions can be thought of. Next, we can apply these solutions to reduce or even eliminate the effects of email overload. A visual representation is given in Figure 1.

![Figure 1 Research objectives](image-url)
2.2 Research Design

2.2.1 Research Based on Two Case Studies
In order to answer all the research questions, two different company’s were approached: one private and one public organization. In order to compare the results of both cases, the same research model is used at both organizations.

This paper is based on the interviews and observations at the private company. The results of the public organization is given in the bachelor paper of W.J.T. Spoelstra (to be published). The comparison of both cases will be done in the near future.

2.2.2 Research Model
The global research design is given in Figure 2. Like mentioned before, this research is based on two case studies. Different propositions are given within the research design. These propositions are tested with the help of different sources.

The main source of data is given by conducting in-depth interviews. After these interviews, the email programs of the interviewees were observed to gather additional information like the volume of messages filed. In order to observe the behaviors of the participants, the interviewees were asked to show how they file their email.

Six in-depth interviews were given, spread by three group types:
- Administrative Workers
- Knowledge Workers
- Managers

3. THE PROBLEM
This section describes the symptoms or effects which indicate if the person suffers from email overload. Next, the causes of this suffering are identified.

3.1 The Symptoms

3.1.1 Email Backlog
An email backlog arises when a person hasn’t dealt with his email for some period of time, thereby creating a pile of unread and unanswered email in his inbox. For example, when coming back from holiday, a person has to spend a couple of days getting up with all his email he received during his absence.

Some people tend to have a continuously backlog whereby the number of unread messages in the inbox stays high. This backlog indicates that the person can’t keep up with the speed of the incoming messages. As an example, one interviewee had over 5000 unread messages in his inbox. He had to give up dealing with all his messages.

3.1.2 Low Responsiveness
If it takes a long time before getting a reply on your email, or you don’t even get a reply, the person on the other side has a low responsiveness. This can be measured by looking at the average turnaround time of the user and the frequency of getting reminders.

As a reaction, one interviewee explained that sometimes deadlines were being missed because he didn’t respond to his emails fast enough. Next to this problem, other people tend to get irritated when they don’t get a respond to their messages. This can cause some personal conflicts in the workplace.

3.1.3 Email Stress
In order to tell whether a person is able to deal with his email in the right way, the personal wellbeing is taken into account.

As a reaction, one interviewee explained that sometimes deadlines were being missed because he didn’t respond to his emails fast enough. Next to this problem, other people tend to get irritated when they don’t get a respond to their messages. This can cause some personal conflicts in the workplace.

3.1.4 Email Guilt
Four out of the six interviewees feel somehow guilty when they can’t keep up with the number of email they receive. This indicates that these people feel a pressure to respond, whereas the believe is there that they may harm the sender of the message if they don’t respond in time.

3.1.5 Large and Disorganized Inbox
A large and disorganized inbox makes it difficult finding relevant email. The person looses all track of which email still has to be answered and which tasks still has to be done.

One interviewee had such a big inbox(6610 messages) that he rarely responded to any of the incoming messages. Flagging the incoming email became ineffective, whereas over hundred email were flagged in the inbox without filing them afterwards.

3.1.6 Private Life
Several interviewees are working at home in order to keep up with all the email. This is represented in Figure 3. The administrative workers did not have email access at home, so they had to deal with their email at work.

3.2 The Causes

3.2.1 Sender Behavior

3.2.1.1 CC Syndrome
With carbon copy (cc) it is possible to send copies of the email to a number of people at the same time. Originally, the intention of this function is that only the persons in the address bar have to reply. The addressees in the cc bar were not required to respond to the message. Unfortunately, it seems that some people miss this knowledge, and are not always certain whether or not they are required to reply to the message.
Some interviewees mentioned that they were cc-ed just in case it could be useful for them to know. When the sender sends his message to a lot of people in the cc bar, he can claim that all the addressees should have known that something went wrong. Hereby some kind of shared responsibility is created.

Being at multiple email lists can also be considered as a problem. Most of the messages from these lists are to general, and the content of these messages is not necessary relevant for the receiver. However, the receiver doesn’t know that beforehand and has to at least scan the message for relevant content. Some of these messages appear to be company announcements regarding e.g. the hiring of new employees. If the content of the message is already mentioned in the subject header, the message can be dealt with as spam and doesn’t necessary create a problem.

3.2.1.2 Spam
Although spam is considered a cause of overload, it appeared to have less influence on the interviewees than suggested (one person thought he received spam once a day, the rest even less). None of the participant marked spam as any source of email overload.

In general, emails which contain spam are easily identified. Therefore, it takes a very small amount of time to delete the message. In this way, spam doesn’t contribute to the email overload problem.

3.2.1.3 Social Emails
The amount of social email on the work floor seems to be very limited, whereas the person with the highest rate receives only three social emails on an average day. Similar to spam, social emails don’t contribute to the email overload problem in this case. When people do receive social emails like jokes, they mostly don’t read them and deal with it very quickly.

What does contribute to email overload, is the combination of a personal message and a professional message in one message. For example, one interviewee mentioned that a business associate begun her email with some small talk about her personal life. Halfway in the message, she switched to the actual question about the product.

In this way, the receiver has to read through the entire message in order to find the question. If these would have been separate messages, she could have chosen to only deal with the question and read the social email on a later time.

3.2.1.4 Overproduction
Overproduction of email occur when people send email when other communication tools like the telephone would be more effective. Four out of six believe some of their colleagues overproduce email. This overproduction exist especially on complicated questions, whereby a telephone conversation would be much more effective in order to fully understand each other.

Surprisingly, none of the participants think they overproduce email themselves.

3.2.1.5 Multiple Subjects
Some senders tend to combine more subjects into one email. The first problem is the filing of the email. When a message contains more subjects, filing them in the right category could be a pretty difficult job. Retrieving these emails in the future could become a problem.

The second problem arises when multiple people are addressed. When one of the subjects of the email is important for a receiver, it doesn’t mean the other subjects are of equal importance. This has the effect that the person has to read through irrelevant information. Next, he gets replies from people about a subject he isn’t interested in. Also, it could be unclear which questions he has or wants to answer, creating extra work.

3.2.1.6 Badly Chosen Subject Titles
It occurs now and than that people forget to give an email a subject header. Bad chosen subject titles are also not an exception. This causes the receiver several problems. First, he has to scan the message in order to get a feeling of the importance of it. Also, he may find difficulties in prioritizing his email in order to effectively deal with his backlog. The next problem arises when the receiver wants to file his email. When he doesn’t file his email fast enough, he may forget what the subject of the email is and has to rescan the message. After the email is filed, another problem arises when the receiver tries to retrieve this message. Again, it would take extra time to find the right message.

3.2.1.7 Exclamation Mark
When an email is of high importance, the sender can assign the exclamation mark to the message. The goal of this functionality is to gain attention from the receiver, so he will deal with the message sooner.

Some people overuse this function, and in some cases people just always send an exclamation mark with the message. Some interviewees explained they do indeed pay extra attention to messages with this mark. They believe that on a common basis, the exclamation mark is used when the message is of great importance for the sender whereas it may be a small issue for the receiver. Therefore, the exclamation mark can hinder the prioritizing of mail by the receiver and contributes to the way the receiver can successfully handle his email.

3.2.2 Recipient Behavior
3.2.2.1 Lack of Training
From all the interviews, only one person mentioned he had some kind of email training in the past. However, the training was very short, and the content of it was already forgotten by the person in question.

All of the interviewees, however, seem to be enthusiastic about having a training in order to learn how to cope with email. It was surprising to see that every single person had their own strategy in how to deal with email. Some key features of Outlook were not even known by the users. For example the usage of flagging email and assigning due dates to emails appeared to be new to some people. With a good training in how to work with the email program, people should be able to deal with email in a better way.

One person put it like this: “We get training for about everything, except for the only thing we do: emailing.”

3.2.2.2 Lack of Company Guidelines
Another problem is the lack of guidelines distributed by the company. Without these guidelines people tend to make up their own strategies. It was remarkable to notice that even on the same department, everybody had different strategies handling their email. The employees should get at least some guidelines to make sure the wheel doesn’t have to be invented time and time again.
One person mentioned he did have some guidelines at his former work, and these worked out pretty well. When colleagues use the same method in organizing email, it would also make it for instance easier to share emails on a shared workplace.

3.2.2.3 Pressure to Respond
This phenomena is also referred to as the email obsessive-compulsive disorder by Weber[Web04]. Hereby, people feel they must respond to email and do this as fast as possible. When it isn’t possible to keep up with all the incoming messages, a sense of guilt arises.

Four out of six people feel compelled to respond to messages immediately. Three of them also felt guilty when they weren’t able to keep up with their incoming messages. So, some evidence exist that OCD does occur on the work floor and does influence the persons state of mind.

3.2.2.4 Attention Deficit Disorder
According to Weber[Web04], ADD occurs when people configure their email program to sound an alarm when a new message arrives. The task they are currently working on is easily forgotten in order to give at least a look at the incoming message.

Next to this sound notification, the program can be setup so that a nice pop-up appears when a new message arrives. In some email programs, the receiver even has to confirm whether he wants to read the message.

Only the knowledge workers appear to use the sound notification. These knowledge workers are both in a job function whereby people’s life may be at stake when messages are overlooked.

Of these two people, only one indicates to feel a pressure to respond to incoming messages immediately.

Although all the interviewees have some kind of notification when a new message arrives, only half of them feel compelled to respond to messages immediately. This implies that the notification by itself doesn’t necessary cause a pressure to respond.

3.2.2.5 Computer/Network Speed
Several people mentioned a slow network connection or a slow computer as a source for their problems.

When messages pile up in the inbox, the time to find a message with the search function of the email program will become longer. Therefore it is necessary to have a good filing system in order to find relevant email within a reasonable amount of time.

3.2.2.6 Bad Filing
With bad filing, both inefficient as ineffective filing is meant. If the person isn’t able to file his email in a structured way, it becomes more and more difficult to find email in the chaos. Next, tasks derived from emails are forgotten and emails are left unanswered.

3.2.2.7 Slow Processing of Email
Some other causes of email overload can be allocated to slow processing of email by the receiver because of being unable to write a message within a short period of time. For example persons who can’t touch-type, have dyslexia or have RSI can have great difficulties in order to cope with all the email.

3.2.2.8 Time Spent Handling Email
Obviously, it becomes easier to deal with email when the available time increases. Spending too much time on email could mean that the person’s strategy is not effective enough. Therefore, the time spent on email should be considered a cause of email overload. The time spent on email by each group type is given in Figure 4. Whereas knowledge workers and managers spent less of their working time handling email, they are compelled to deal with messages in their private time (as seen in Figure 3).

![Figure 4 Time spent on email as percentage of work time](image)

3.2.3 Volume of Messages
The volume of message is a direct cause of the email overload problem. When a great amount of new messages arrive each day, it becomes difficult to deal with all of them. Next, having to sent a lot of messages can also create overload.

The number of in- and outgoing messages of the different group types are given in Figure 5. Note that administrative workers tend to sent more messages then they receive. Knowledge workers sent approximately the same amount of email as they receive. Managers in contrary, receive much more email than they sent themselves.

![Figure 5 In- & outgoing email](image)

4. STRATEGIES
This section describes the current strategies each interviewee use in order to deal with his email. However, it is very doubtful whether these strategies are the most effective ones. Unfortunately, the description of the strategy of interviewee number six was lost in the process.

The symptoms, derived from sector 3.1, are shown in Table 1. These can be used in order to qualify the effectiveness of the strategy.
### 4.1 Administrative Workers

#### 4.1.1 Interviewee Number One

Incoming messages are prioritized by looking at the subject, sender and whether or not the message contains an exclamation mark. Important mails are flagged with only the red flag. When the email should be answered on a later date, the message is flagged and both the due date and the reminder date are set. When finished with the incoming email, it is immediately filed: first by product, then by subject. Sent messages are filed on a regular basis.

#### 4.1.2 Interviewee Number Two

This person scans all incoming email and then starts dealing with the most important ones first. Important mails are flagged with only the red flag. The respond by and follow up functions are used for incoming messages. Important emails are printed and land up at the desk waiting to be answered. A written note on the computer screen summarizes all these printed messages to keep track of which messages still have to be dealt with. All messages from the inbox are daily filed, and the sent items are weekly filed. When a new reply arrives, all the messages of the trail are deleted whereas the new reply contains all of these messages.

### 4.2 Knowledge Workers

#### 4.2.1 Interviewee Number Three

With the strategy this person uses, no more than approximately ten messages are located in the inbox. The strategy is visual represented in Figure 6. When a new message arrives, it is dealt with as soon as possible. When the person is not able to complete his respond, he moves the message to a draft folder. When the reply is finished, the original message is filed. The reply is now located in the sent items box. This folder is cleaned up approximately once a week. At that moment, the person checks if he already got a reply from his sent message. If not, a reminder is sent. When the person did receive a message or the sent message doesn’t require an answer, the message from the sent items folder is filed the same way as the other messages. The messages are filed first by product, then by study etcetera.

![Figure 6 Strategy number three](image)

### 4.3 Managers

#### 4.3.1 Interviewee Number Five

This person uses email as an additional tool whether than as the main communication tool. The entire inbox is copied regularly to his second inbox folder in order to deal with the supplied network space. About half the incoming email is read, whereby the important emails are flagged with the red flag. When dealing with email, the inbox is sorted in a way that the flagged items appear on the top of the screen. Only the important email is filed. Any other emails are filed by employees who are responsible for the subject.

#### 5. SUGESTED SOLUTIONS

This section contains some possible solution to the problem, derived from different sources. Some solutions are given by the strategies people tend to use in order to deal with their email. Other solutions form a part of the current literature which exists on this subject. The remaining part consists of solutions inspired by studying the participants and the causes of email overload. Note that these are suggested solutions and are not necessary useful for all email users.

### 5.1 Sender Behavior

#### 5.1.1 Contact Receivers Beforehand

One person mentioned that it is difficult to email with unfamiliar people. When she phoned the person beforehand, some mutual understanding was created. As a consequence, the replies to each message came much faster, with the right information attached.

When sending an important or large email, it seems useful to inform the receiver beforehand. This way, the receiver can plan to answer the email in his agenda.

#### 5.1.2 Add ‘Reply Before Date’ to Message

Many emails are sent without a clear timeframe in which the email should be answered by. When dealing with small questions, this doesn’t lead to a big problem whereas these are mostly answered pretty fast. However, with bigger questions it could create some overload at the receiver’s site. He is not sure how urgent answering the message is compared to other tasks.

Adding a reply before date to the email, creates profits for both sides. The sender approximately knows when he can expect an answer, and the receiver can plan answering the message.

#### 5.1.3 Reduce cc-lists

Try to minimize the people you send the email to. Don’t expect feedback from people who are on the cc-bar. If you do expect them to do so, put them in the address bar. If only a small part of the email is relevant to the people on the cc-list, try to send...
separate emails (see also 5.1.5). Hereby the people who are affected by the number of cc’s are spared.

5.1.4 Clear Subject Header
As mentioned before, a clear subject header is of great importance for the receiver. Not only does it help with filing and recovering the email, it also helps in prioritizing the incoming messages. Especially this prioritizing could be of an advantage for the sender, whereas it could help the receiver decide that he wants to reply to the email as fast as possible.

5.1.5 One Subject per Message
Do not try to send one email dealing with different subjects, especially not within an email addressed to a number of people. When the receiver is uncertain about how to deal with one subject, he won’t send a reply before he can answer all the questions in the email. Next, the receiver finds difficulties filing the email and deciding who to reply to.

5.1.6 Reduce Number of Email
When it looks more effective or efficient to use another communication tool instead, then use it. Complicated questions are often difficult to answer via email, so an appointment or telephone conversation should be arranged.

5.1.7 Separate Social Content From Professional
When writing an email, people sometimes tend to mention personal related matters. This makes it difficult for the receiver to scan the message for the content he needs. Therefore, it helps the receiver to separate the social content from the professional content. You can start with the professional part and end up with the social part. Another, better solution is to send two messages instead.

5.1.8 Reduce the Use of ‘Reply to All’
A lot of people are often on the cc bar of the email. When the addressees submits a ‘thank you’ message to the original message, he often sends this reply to all the people on the cc bar. This creates a tremendous amount of email to all people on this list. Reducing the use of the ‘reply to all’ function should decrease the overload at the receiver’s side.

5.1.9 Exclamation Mark
Only use the exclamation mark when you feel it is of high importance for the receiver. Don’t overuse this function, because people will stop prioritizing your email.

5.2 Recipient Behavior

5.2.1 Filing

5.2.1.1 File Sent as Well as Received Items
It appeared that all the interviewees file sent as well as received messages. The frequency of filing sent items is relatively low in comparison with the filing of received messages. Because of this low frequency, it becomes a much bigger task to file all these email. Therefore, more effort should be taken to file at least the important sent messages.

5.2.1.2 File Immediately
When finished with an incoming email, it seems to work best to file the message immediately. In this case, the size of the inbox stays small and less messages are overlooked. It helps keeping the overview.

5.2.1.3 Clean Up Folders Frequently
It appeared that a lot of people have folders which are far too big (>100 messages) or far too small (<3 messages). This makes it more difficult to find the right messages. A suggestion would be to frequently clean up the folders i.e. split big folders in multiple subfolders and delete failed folders. Next, put folders in an archive folder when the newest message in the folder is outdated (e.g. more than 1 year old).
When a trail of messages exist in the folder, only the latest should be kept whereas this message contains all the other messages.

5.2.1.4 Separate Personal Map
Some people have their personal email accounts in their email program at work. Because all the email of both the professional as personal account arrive at the inbox, some kind of separation of email is required. It is therefore advisable to set up the email program in a way that all mail addressed to the personal account is delivered in a separate folder.

5.2.2 Delegation
Some people had colleagues answering their email when they were away from the office for a longtime. This appeared to be unsatisfactory whereas the person who has to answer the message often has too little background information. At the company in question, delegation was often not possible because of confidential issues. Additionally, it could work to hire someone to clean up the inbox and all the folders.

5.2.3 Turning Off the Notification
For people who feel a high pressure to respond and suffer from the attention deficit disorder, it might be quite useful to change the settings of the email program when dealing with a task which asks for a certain level of concentration. Turning off the sound alarm is particularly a help when the mind should be focused on something else. For some jobs at the company this isn’t a solution whereas every email could be of high importance and should therefore be noticed as soon as possible.

5.2.4 Time Frame
One proposition of the research was to find out whether or not it would help to avoid dealing with email at times of the day when the concentration and creativity are highest. This case study shows it isn’t a solution for the participants, whereas it is often necessary to be at the highest concentration level when dealing with an important email. Next, most of the work consist of reacting to new difficulties raised by incoming messages. When such a new message arrives, it can change the planning for the rest of the day.

5.2.5 Calendar Use
Several people indicated that it helps to schedule mail in the calendar when they suspect that answering the message could take some time. Also, an appointed time frame of the day can be scheduled in order to clean up the mailbox.
As an extra feature, the calendar should be used to assign messages to meetings. In this way, it is easier to find all the relevant data before starting the meeting.

5.2.6 Out of Office Reply
When being out of office for some period, one should automatically sent an out of office notification. Let the sender know when you return, and who to contact if it is an urgent question. Mention that the emails won’t be read, unless he resends his message with an adapted subject header. Ask to start the subject header with e.g. [reply needed] or [read this].
Coming back at the office, the backlog should be very limited. All the messages from that period without the adapted header don’t have to be read. Now, it should be easier to determine which messages are important enough to give a fast reply to.
With the help of the message rule function of Outlook, it is easy to split all the email from that period in three folders. One with messages which don’t contain the adaptive header, one which contains the messages with the ‘please reply’ header and the last folder containing all the messages with the ‘read this’ header.

In this way, the user can ignore all the messages in the first folder, reply to all the messages in the second folder and scan the content of the messages in the third folder.

5.2.7 Flagging
In order to keep track of which messages still ask for a reply, it is useful to flag these messages. When flagging, also a ‘due date’ can be assigned. Hereby, a notification will be given when the date has passed. The people who don’t use the flag function, seem to be the ones who are the most stressed about their email (see Table 2). Therefore, this research shows that flagging is very much advisable.

In this way, flagging could help people to let go of the message until the due date is there and the message should be dealt with.

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<th>Table 2 Flag use and stress</th>
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<tr>
<td>Email stress</td>
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5.3 Company Resources

5.3.1 Training
This case study shows that there is a lack of training concerning the usage of email. All employees have to find their own ways to deal with the email, which does not turn out to work that well in several cases. Therefore, it is suggested that at least some basic training is given in how to organize your mail.

5.3.2 Guidelines
Company guidelines could help in several ways to improve the email traffic within and outside the company. These guidelines can contain information about how the subject headers should be defined. Also, it is quite useful that certain company’s give instructions in how the folders should be categorized. When doing this, it becomes easier to find email, and sharing of emails becomes much easier.

5.3.3 Limited Network Space
The company at which this case study was held, had a limited space for each account to store their in- and outgoing email. Although this is a source for lots of complaints from the employees, it can actually be considered part of the solution of the email overload problem. When people can store a reduced number of email in their inbox, they are forced to clean up their mailboxes every now and then. In this way, emails are more often dealt with, and are filed in a more regular basis.

One person seemed to cope with this with a smart trick. He copied his total inbox to a private folder which he called his real inbox, thereby bypassing the storage limit. As a consequence, this person appeared to be the worst mailer looking at the number of unread and unanswered email.

This limited inbox strategy could be a risk when many emails with large attachments are sent or the person in question is on a long-term leave. Therefore, the system should have some flexibility.

5.4 Technological Solutions

5.4.1 Prioritization
Two third of the interviewees use the flag function of outlook to prioritize important email. However, all of them only use the red flag while several different colored flags are available. The participants indicate that assigning different colors to prioritize the messages is not useful whereas the meaning of each color is easily forgotten. Half of the interviewees believe that the use of prioritization numbers does help to organize the level of importance of each message. Using priority numbers as an addition to the current flag-method can be of help for people who find difficulties in prioritizing their email.

5.4.2 Conversational Threading
Conversational threading, as in how it’s done by Gmail, is a feature five of our interviewees like to see in their own email program. However, the way it is implemented right now isn’t completely satisfactory because the total number of email doesn’t decrease. It would be much more effective if all the old messages of the conversational trail are removed from the inbox. The size of the inbox will decrease as a result, while all the messages are still present in the program.

5.4.3 Voice Input
Four out of six people believe having a voice input device would speed up their email response. Especially the person who suffers from RSI and the person who is dyslexic seem to be very interested in a good voice speech program to help processing email.

5.4.4 Respond Date
When sending a message, it is very useful for both the sender as the receiver to address at which day the message should be answered by. The email program should have an extra field were by this due date can be set. In this way, the email program of the receiver could automatically put the email message in the calendar in order to reply on time. Because all incoming messages have to be visible by the user, the email should enter the inbox equally to all other emails.

5.4.5 Adding Own Subject Header
In order to file messages effectively, it turns out to be quite useful to be able to give an incoming message your own subject header. When you receive a message with an unclear or even empty subject header, you should address your own title. Changing these headers should be made easier in current email programs.

5.4.6 Message Rules/Automatic Filing
The current versions of Outlook have the function to automatically redirect incoming messages to predefined folders, depending on e.g. the subject line and the sender. Because messages are immediately redirected to the folders, they aren’t visible in the inbox for the user. As a result, messages are often overlooked and keep being unread.

To solve this problem, it could be a solution to apply this message rules once the user is finished dealing with the message. In practice, this could mean an extra button which can be pressed when done with the message. The message can now be automatically filed with the help of the message rules.

This same function can be used when sending a message, whereas these should be filed as well.

5.4.7 Different Notifications
One third of the interviewees use the sound notification of Outlook. When this alarm goes off, you know a new message
arrives. However, the alarm does not tell you if it is a spam or an important message you have been waiting for. A solution to this problem could be that the user can assign a different sound notification when a message of a certain person, subject or a message with an exclamation mark arrives.

In this way, it is easier for the user to determine whether it is useful to look at the inbox. Additionally, all different sound notifications should be turned on or off, thereby limiting the number of notifications.

5.4.8 Keep Track of Unanswered Messages

The study shows that some people tend to lose track of which messages they have had already a reply from and which they have not. An extra function in the email-program could help tracking messages which still has to be answered. Hereby you can think of putting the messages including their due date in the agenda. When the receiver hasn’t received a reply on this date, a notification can be given.

6. CONCLUSION

This paper has described some causes and effects of email overload, the strategies people use to deal with it and possible solutions towards the problem. These solutions can be handy for people who suffer from certain symptoms of email overload. For example, voice input can be a good solution for people who are slow in processing their email.

Companies should take their responsibilities by giving training to their people in order to cope with email as a whole. Email programs should be improved on particularly the file and agenda functions. Several changes have to be made on both the sender and the recipient behavior to be able to use email effectively and efficiently.

When all these adjustments are made, email can become fun again.

7. FUTURE RESEARCH

This paper is a first attempt in investigating how to deal with the email overload problem. The outcomes of this research still have to be compared with the parallel study at the public organization. Next, more strategies people use should be investigated and more quantitative data should be gathered. Some suggested solutions still have to find their way in practice. Also, more different group types can be addressed in order to get a complete picture. Hopefully, this paper gives some new ideas for upcoming research.

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