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Comparison of email browsers and their search capabilities

Bachelor's Thesis (6 EAP)

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Introduction

The way people interact with each other has changed drastically during last few decades. Daily face to face communication has decreased due to a chance to catch anyone anywhere on a phone or through electronic communication over different media devices like MSN messenger or Skype. Writing and sending regular mail is losing its purpose and disappearing, it has come down to being an old and traditional medium for sending postcards for Christmas and other celebrations. Whether it is communication in workplace or everyday private life most people have switched from regular mail to email. That kind of change in our way of communication is brought to us by our own comfortable and fast pace lives. Sending and communicating over emails has become so popular that without email account it is hard to cope in our society. Even my 75 year old grandma was compelled to create an email account and learn to use it. In work environment sending emails has become almost irreplaceable medium. It is usual that in a day one might have to read and answer to anywhere between ten to fifty emails which means that in one year the number of emails received is from 2000 to 10 000. As a college student I can find over 11000 emails from my mailbox and 10 000 of them I received in last three years. In 2010 I received little bit over 3400 emails and sent out 1500.

The Institute of Computer Science in University of Tartu is involved in research of social networks and how to orienteer in email accounts with such capacity [1, 2]. The goal of my work is to compare and test the existing email clients search capabilities, qualities and ease of use. In the first section I will explain the differences of popular email forwarding protocols and how these effect users email browsing. Since there are hundreds of different email browsers, I have selected six most popular ones. In the second and third section I will give a short review of these email clients and compare their search capabilities and how fast and easy it is to use them because in working environment it is important that finding a certain letter or document from tens of thousands of other emails is fast and easy. In the fourth section I will put the different email clients to a test, to see which of these give us most accurate answers. With my work I hope to clarify if today's search capabilities are sufficient and efficient to work with such capacities and to find out which email clients/browsers handle that the best.

1. **What kind of protocol to use: IMAP or POP**

Before starting to compare different email browsers I had to understand the difference between email forwarding protocols like IMAP and POP. These two protocols influence a lot how the searches are carried out, how the browser communicates with the mail server and how it downloads emails from there. In my experience it influences significantly program work, search speed and ease of use. Most of today's email browsers support both protocols.

POP – (Post Office Protocol) is very easy and straightforward approach. As soon as user logs in with his email browser, then all new emails are downloaded to his computer. By default the emails are deleted from that server but it is simple to modify it from the settings so that a copy of the letter would also stay on the server [3, 4]. I've been using POP for years and find its simplicity and speed a great plus. The only time I had problems using it was when I started reading my email through different devices for example besides laptop also phone or public computers. The problem is that POP only has one way communication with the email server. So marking emails read or deleting them doesn't change their letter status on the email server and logging in with another device will downloads all the emails again, since in the server they are tagged as unread. It usually creates annoying extra work and loses time. At the same time when using only one device to read emails then POP is very effective and fast way to send and receive emails.

IMAP – (Internet Message Access Protocol) is more complicated protocol than POP. With IMAP the communication between email browser and email server goes both ways, which means that if after changing something in local browser, changes are also applied in server [3]. The weakness of using IMAP is that it's slower than POP, because in addition to downloading emails when connecting with server it also automatically synchronizes local mailbox with the server. On positive side this means that it's possible to download all old emails from the server to local browser and that makes it easy to change email clients using this protocol. On the other hand with too big mailbox it could take days to download all the email and finally get it synchronized and it also takes a lot of room [3, 5]. That's why as a rule (standard configuration) emails are not stored locally in the computer and initially only email headers are downloaded from the server. Therefore reading emails usually requires Internet connection and searching is slower since the request is made to the server not to a local mailbox [5]. When I started using IMAP it was really frustrating when I thought I had downloaded all the emails and still often found myself unable to access them since only the headers were downloaded. It is possible to avoid this situation by modifying the browser so that all the emails would be downloaded and local copies of them created, when logging in. That also speeds up the search, because it's possible to do it on the local copy of the mailbox. Big advantage is that if using different email browsers or devices then all browsers have the same info, they are up to date and finding unread or important emails is easy and fast. Although it takes a little more time to load emails, IMAP is still more comfortable and effective protocol for people who use more than one platform to read their emails.

## 2. Comparable email browsers and their differences

In this section I will compare the most popular email clients, give a quick overview and description of them and the biggest differences and advantages they have compared to each other.

When looking for most popular email clients I ran into two websites that show statistics of studies made in last couple of years to determine the most popular email clients.

Here's an outtake of the Campaign Monitor results in August 2009 (Figure 1.) [6] and in June 2011 (Figure 2.) [7].

According to this study sn 2009 almost half of the people (40 %) were using Microsoft Outlook. Second and third most popular were Yahoo! Mail and Hotmail with almost equal parts, 16% and 15% accordingly. On the forth place was Apple Mail with 8%. Rest of the email clients like iOS devices (iPhone/iPad), Gmail, AOL Mail, Lotus notes 6, Thunderbird 2 all had under 6% of users from the people that participated in the study.

Figure 1. [6]
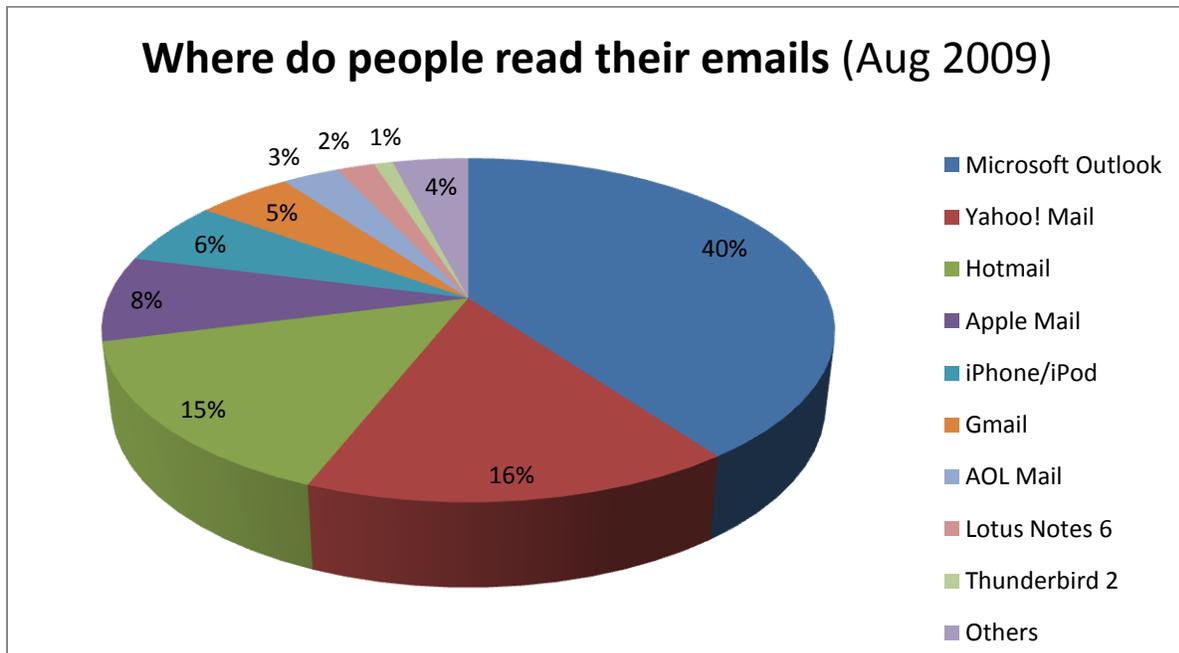
The same study made in 2011 revealed the following results. Outlook was still most popular with only 27,62% of users. Seconf most popular email clients were iOS devices (iPhones, iPads) with 16,01% of users. After that were Hotmail (12,14%), Apple Mail (11,13%), Yahoo! Mail (9,54%) and Gmail (7,02%). Rest of the email clients were used by 2% or less people that participated in the study.

Figure 2. [7]
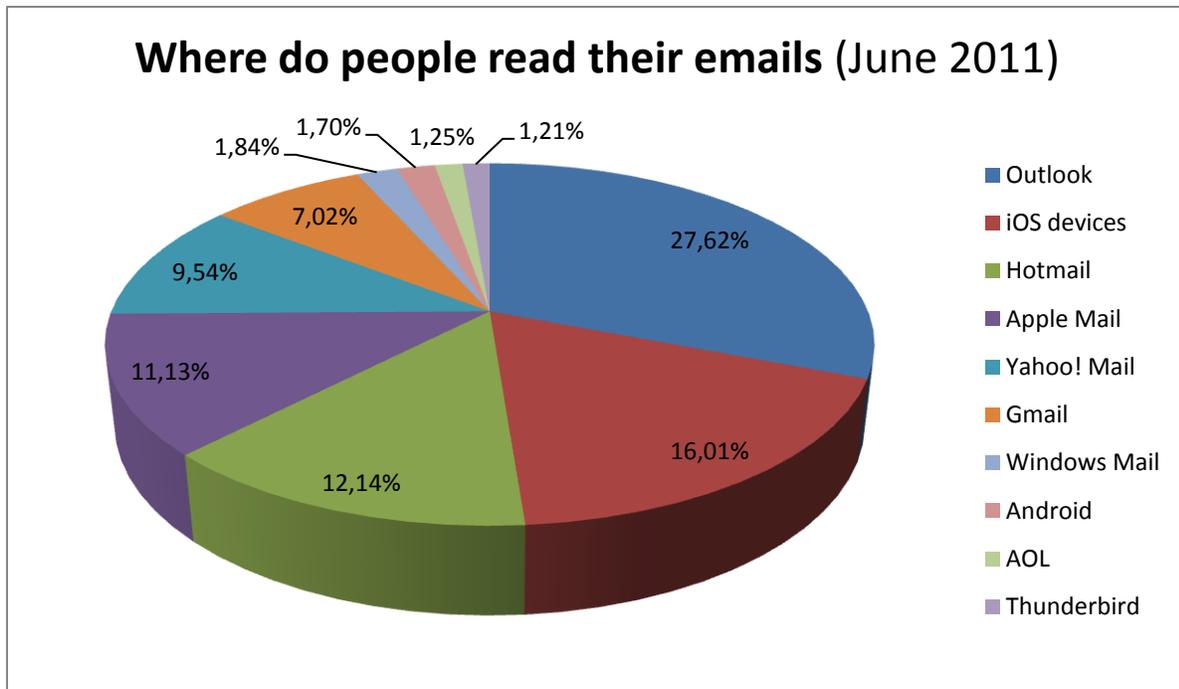
As it is shown on the Figure 2. Microsoft Outlook has lost almost 13% of market share over last two years and iOS Devices like iPhones, iPads have increased their market share about 10 %. All other changes have been minor. Yahoo has lost some percentages to Apple mail and Gmail.

These statistics are gathered from more than 300 million email client users and it was done by Campaign Manager [6]. These statistics were gathered by sending an email with an image and as soon as the email was opened and the image was downloaded, it gave feedback to the company as far as which email client was used to open that particular email. Although this gives us a nice overview of most popular email clients and is very entertaining, the technique used is a little questionable. Because some email clients don't download external images as a default and only 48 % of recipients see images automatically and that really puts these numbers to question.

Figure 3. [8] (Default image blocking settings in popular email clients,
where ✖ - "no", ✓ - "yes", ⓘ - additional options[8])

Desktop clients	Images displayed by default	Images disp. for trusted senders	Renders ALT Text
Outlook 2007	✖	✓	ⓘ
Outlook 2003	✖	✓	✓
Outlook for Mac 2011	✖	✓	✓
Outlook Express	✓	✖	✓
Windows Live Hotmail	✖	✓	✓
Apple Mail	✓	✖	✖
Thunderbird	✖	✓	✓
AOL Desktop	✖	✓	✖
Lotus Notes	✓	✓	✓
Webmail clients	Images displayed by default	Images disp. for trusted senders	Renders ALT Text
Hotmail	✖	✓	✖
Yahoo! Mail Beta	✖	ⓘ	✓
Gmail	✖	✓	✖
AOL Webmail	✖	✓	✓
Mobile clients	Images displayed by default	Images disp. for trusted senders	Renders ALT Text
iPhone/iPad	✓	✓	✓
Android default	✖	✖	✓
Android Gmail	✖	ⓘ	✖
Windows Mobile 7	✖	✖	✖
Blackberry OS6	✖	✖	✓

2.1 Microsoft Outlook 2007

Outlook is a personal information manager and it is standalone software, but often comes as a part of Microsoft Office. Outlook is mainly used as an email browser but in addition it also can be used as a calendar, contacts and activity manager; as a notebook, diary or a web browser [10]. One of Microsoft Outlook's most appealing qualities is that it is possible to use shared email accounts, calendars, to do lists and it is easy to share public files, which is one of the reasons, why Outlook is popular in big corporations [11]. I liked Outlook, because it was compatible with my web based Google Calendar and it was easy to synchronize that with my iPhone. At the same time I don't need all of its functionality and just as an email browser it is too multiplex. Microsoft is marketing Outlook as the user's life control center.

Figure 4. (Microsoft Outlook 2007 main wiew)
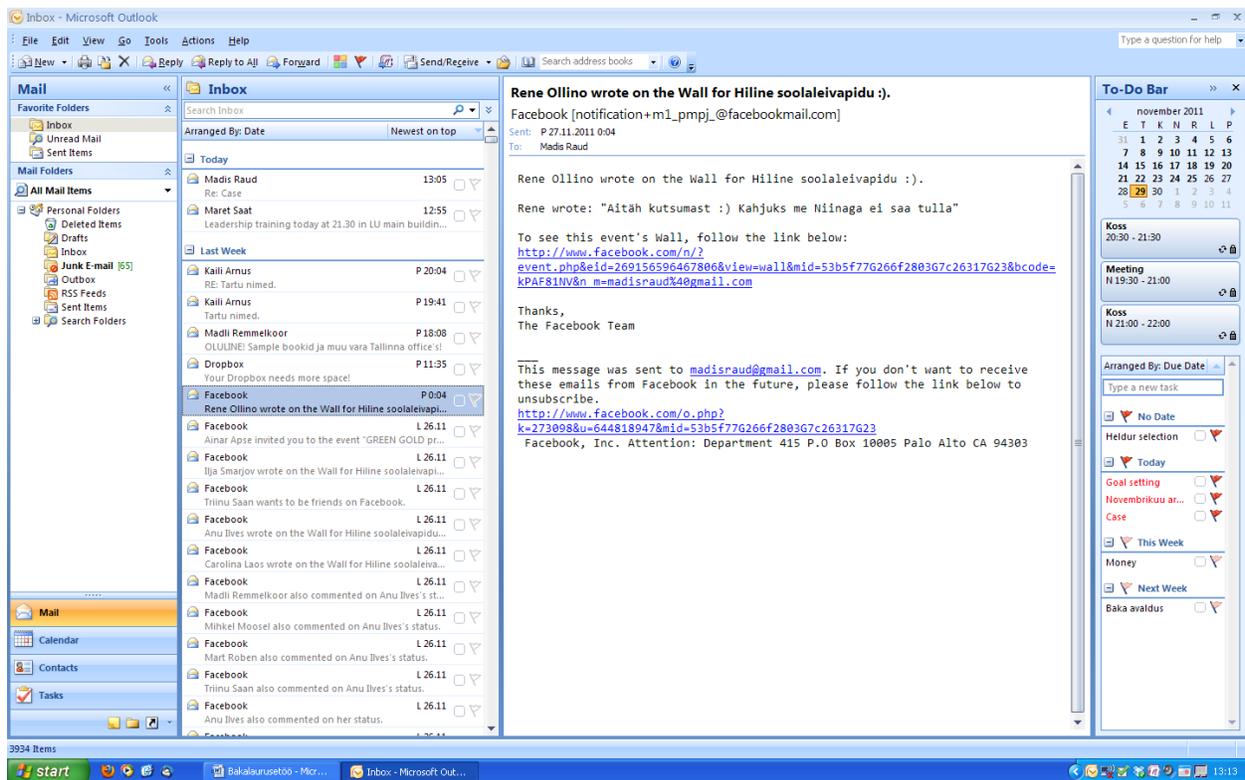
2.2 Mozilla Thunderbird 8.0

Thunderbird is free software which came to use in 2004 [12]. Thunderbird's biggest advantage compared with web based email accounts is the possibility to manage many email accounts from one place. It also offers an option to browse emails without an Internet connection but that is common for most local email browsers. The newest Thunderbird version started using tabbing, which makes searching for an email and browsing of multiple emails much easier and more convenient [13]. Thunderbird's biggest difference compared to other email browsers is the broad choice of extensions and themes, which give an opportunity to personalize and add those extensions, that you feel that are important for you [13]. Mostly I use Mozilla Thunderbird for browsing my email, because I appreciate its simplicity and a chance to personalize and modify the browser to meet your needs.

Figure 5. (Mozilla Thunderbird 8.0 main view)

10
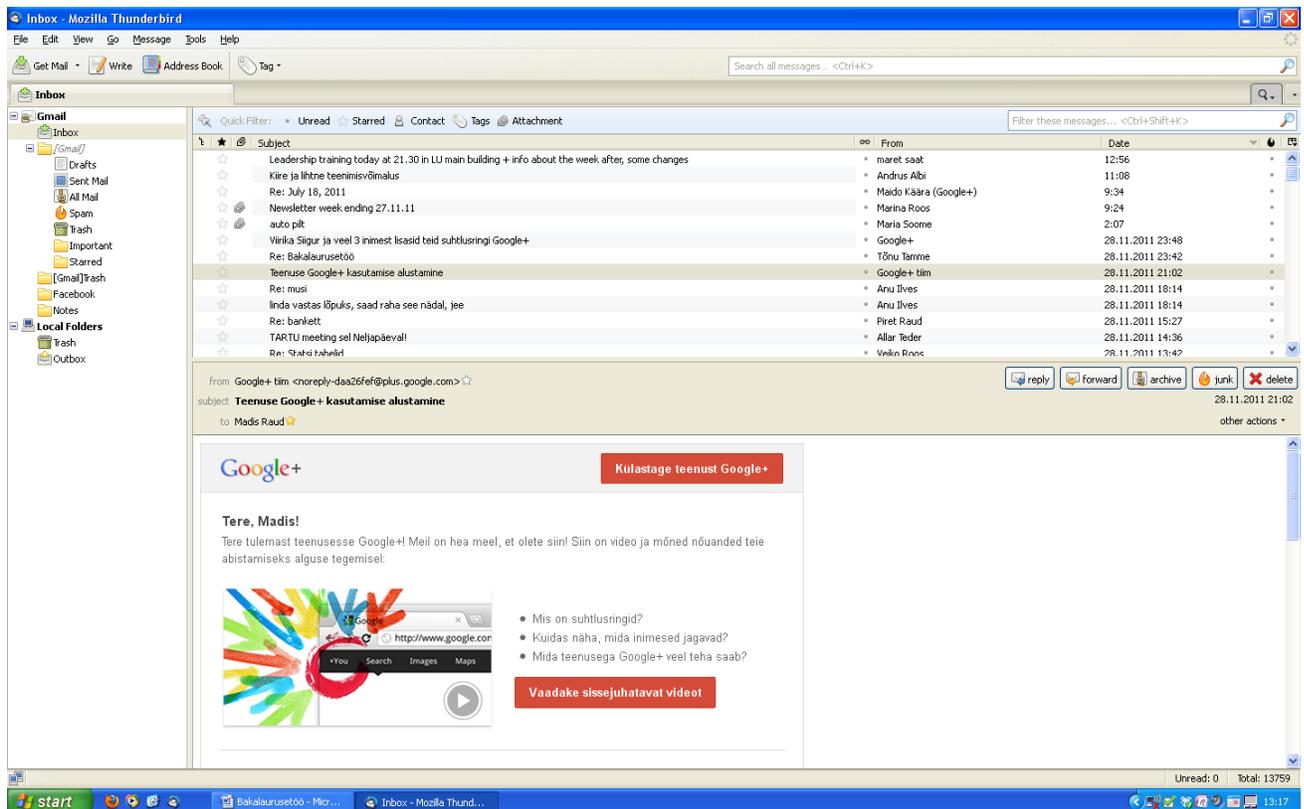
2.3 Windows Live Mail

Windows Live Mail is email browser is a part of Windows Live Essentials and comes with most Microsoft operation systems [14]. Windows Live Mail is the successor of Outlook Express and Windows Mail; it is even developed by same people that made Windows Mail. Windows Live Mail is a simple email browser that fills basic email browser needs [15]. It is possible to add different accounts and to manage them from one place. The most disturbing thing with Windows Live Mail is that at first it only downloads email headers, but the emails themselves are not downloaded. Only option to read messages later without Internet connection is to open each letter individually at least once so a copy is made to a local computer. I tried to find how I could configure immediate message download, but I didn't succeed finding it. Compared to other browsers Windows Live Mail seems slow and clumsy for looking through emails.

Figure 6. (Windows Live Mail main view)
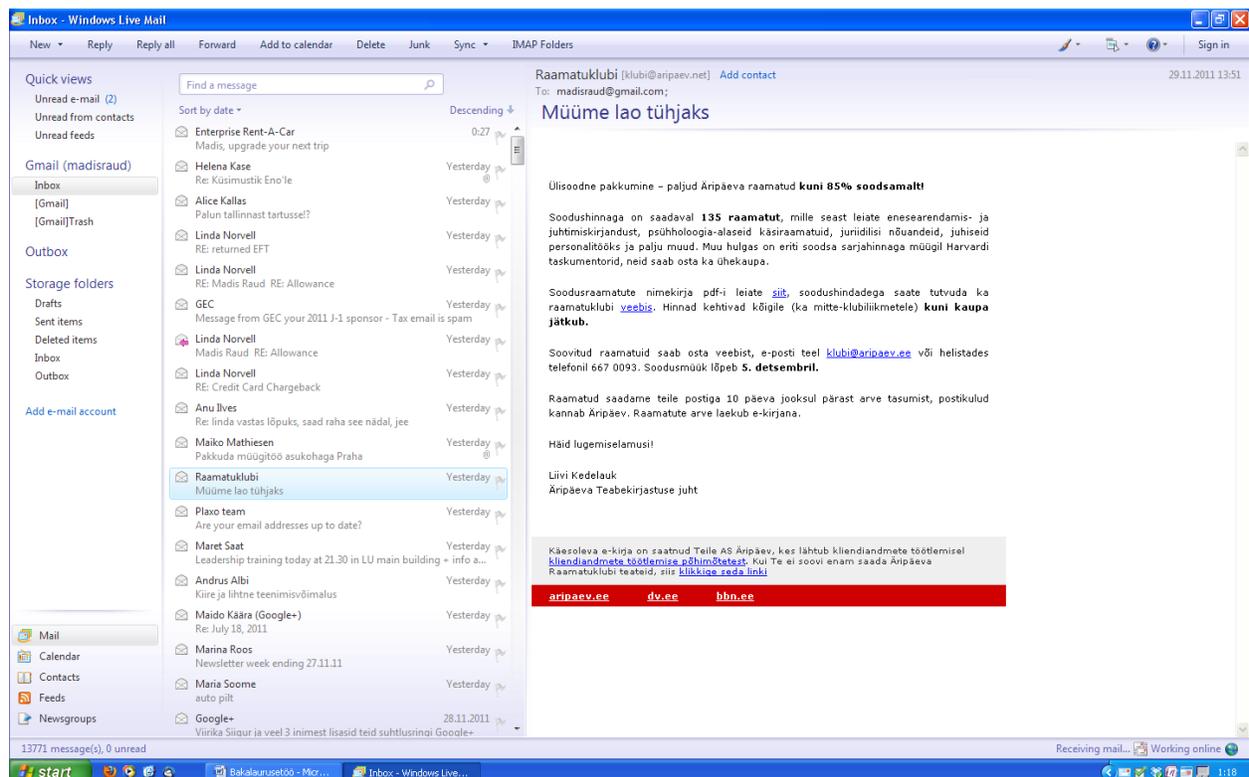
2.4 Opera Mail

Opera Mail is an email client, which is built in Opera web browser [16]. Opera Mail is free software just like Thunderbird and it comes as an internal part of Opera web browser. Just like all the other local email browsers Opera Mail also provides an opportunity to manage all email from one place. One thing that really is a big advantage for Opera Mail is how well it is integrated to a web browser allowing users browse the web and email from one place. Instead of that many other email browsers will pop up another window or ask for your permission to open one when clicking on a link and are therefore slower and inconvenient. Opera Mail also has a self learning spam filter and instead of having emails in different folders Opera offers a possibility of different views and labels, so same email can be in more than one folder (view). Labels are similar to tagging systems that other email browsers have.

Figure 7. (Opera Mail main view)
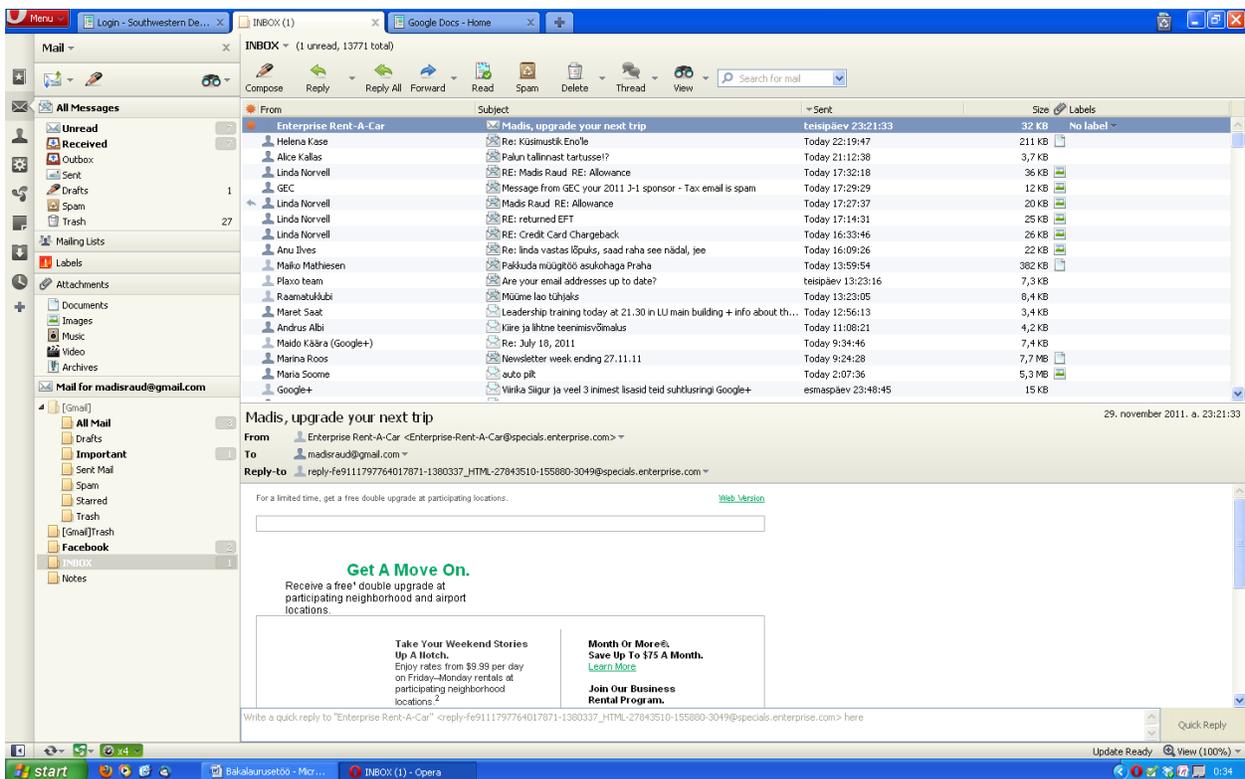
2.5 Windows Live Hotmail

Windows Live Hotmail is a free web-based email service operated by Microsoft. Hotmail actually got started in 1996 and it was one of the first web-based services [17]. The advantage of a web-based email service is that users can access it from any computer in a same way. At the same time most software-based email browsers on personal computers are not accessible in a same way on a public computer and users are forced to use their email service providers' web-based browser. The biggest disadvantage of using a web-based email browser is that it only works with Internet connection. This is the dissatisfaction point that makes lot of users choose software-based email browsers. Most that type browsers download all messages while being online, which gives access to all the emails and files included. Windows Live Hotmail has integrated MSN messenger to web-based browser as well, so all messenger contacts are also available for chat. They have implemented file-sharing, calendars and to-do list on their website, which are for example also accessible through a smart phone, but still only with Internet access [18].

Figure 8. (Windows Live Hotmail main view)
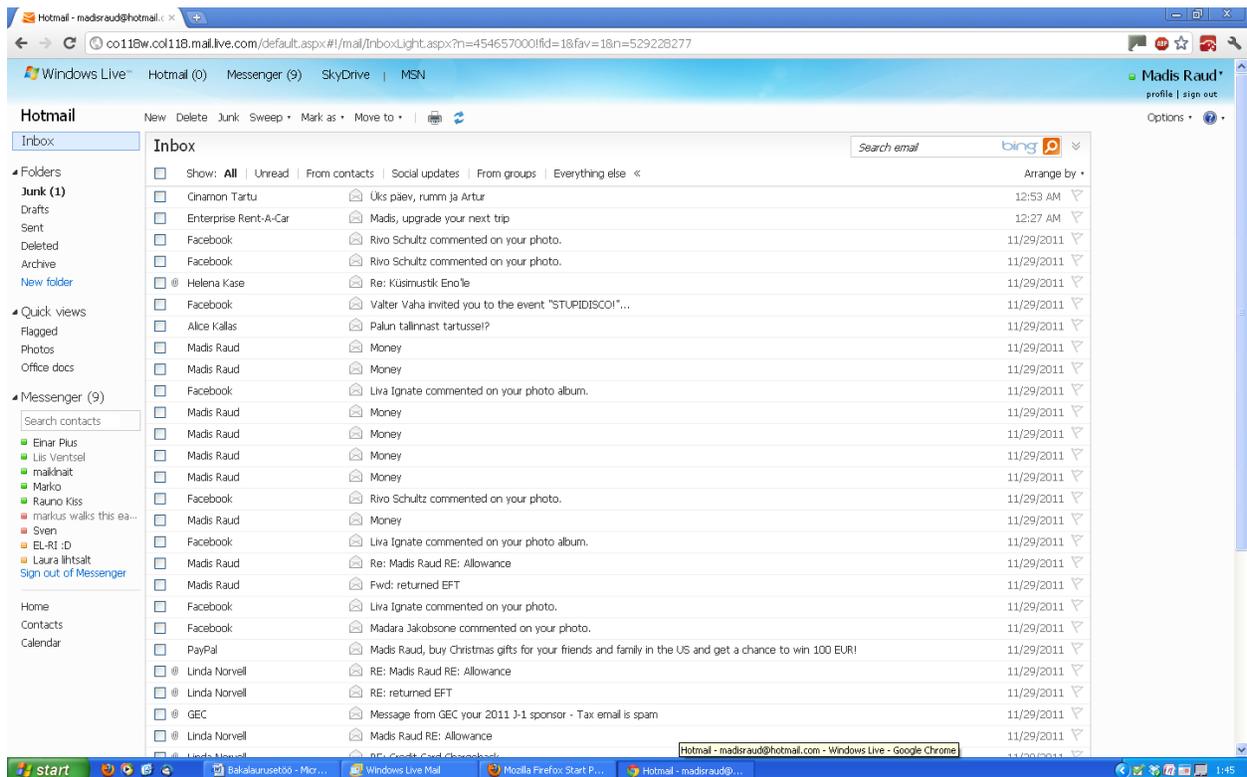
2.6 Gmail

Gmail is a free email service provider operated by Google and was launched in 2004 as an invitation-only beta release; it became available for the public in 2007. When Gmail was launched the biggest change they offered to users was storage capacity of 1 GB per user and possibility to send messages up to 25 MB. At that time most of their competitors including hotmail offered 2 to 4 MB of free storage [19]. Gmail's biggest minuses used to be the same as other web-based email accounts – difficulties in accessing the account when there is no Internet connection. On August 31st 2011 Gmail offline was released as a Google Chrome web browser application. It is still in its baby steps and cannot compete with standalone software based email browsers like Outlook and Thunderbird, but it offers the functionality to read last downloaded emails and respond to them. The emails are sent out as soon as the Internet connection is restored. Gmail downloads a local cache of the mail and it's being synchronized with Gmail servers and once the Internet connection is lost, Gmail switches to offline mode and uses the data stored on a local computer [19]. In addition to that Gmail is easily personalized with lots of themes and variety of settings to fit the users' needs – from background picture to the density of the text on the screen and what is seen in the menu bar (calendar, online friends, Google docs and etc) [20]. The biggest plus it offers in my mind is how Google has effectively grouped together various websites with individual tasks like Gmail, Google Docs, Google Maps, Google Calendar under one account, so everything I use daily is just a click away and accessible from one page.

Figure 9. (Gmail main view)
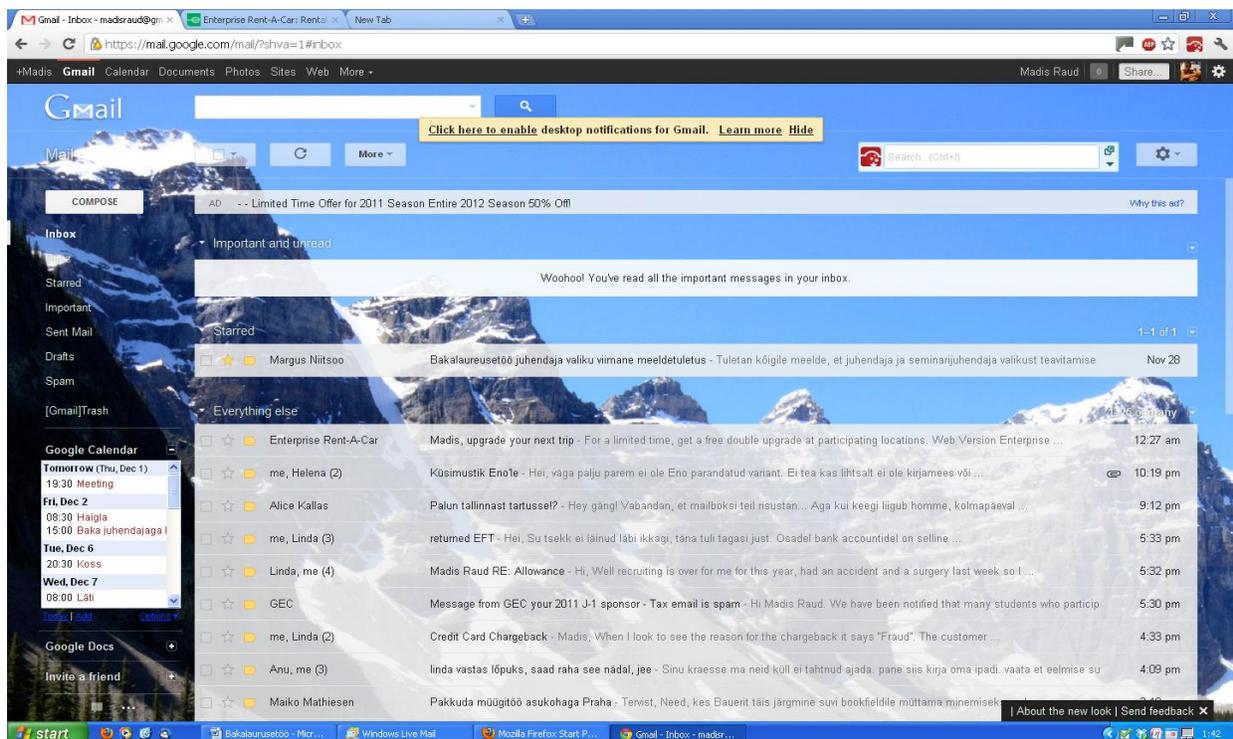
3. Analysis

I have gathered data about email clients that I am currently reviewing to compare some of the capabilities like whether it is web or software based, how long has it been available, what operation systems it works on and etc. The data was gathered from Wikipedia and from each of the email clients' homepage's and some of the information in the table was found by examining the email client; the results are shown in Table 1. [9] – [23].

Table 1. shows that all other email clients besides Microsoft Outlook and Windows Live Mail are compatible also with Mac OS X and Linux. Besides Windows Live Hotmail all email clients have implemented an opportunity to browse mail in offline mode, which is obvious for software based email clients, but also Gmail has figured out how to achieve it on web based email client.

From search capabilities Opera and Windows Live Mail have the least options for advanced search; they only offer a quick search, which searches for keywords or sentences to match with sender, recipient, subject and also email context. Besides that there is also a search bar to find contacts from your address book. Other email clients offer also detailed search which means that you can apply more than one filter at the same time to get more accurate results; the name of the attachment is also included when searching for matching keywords. Differently from other email clients, Outlook and Windows Live Mail Instant Search can search for keywords not only from the message text, but also from attachments. In order for Instant Search to be able to search within an attachment, an iFilter for that file type needs to be installed. Instant Search is based on Windows Desktop Search,which can already index over 200 common file types by default [23]. All email clients studied in this work besides Opera and Windows Live Mail offer chance to modify the search by certain time limits when the letter you are looking for might have been sent.

Regrouping is another way to make search more efficient. When the keyword you searched still gives you hundreds of matching answers it is possible to decrease the amount of time spent on searching by regrouping these remaining mails by date or bring the ones with attachment in front or order them by sender. This partially substitutes the need for search with multiple filters, but it definitely takes more time to find an email you are looking for from ten than from few hundred emails. In regrouping hotmail has added the opportunity to see all your social updates from Facebook, Google+, and YouTube etc. with just one click. With all other email clients this can be done by creating a rule or filter that all letters with Facebook in their subject line would go into previously made folder. This gives the user a chance to modify the filters so important emails do not get mixed up with notifications from social networks and monthly newsletters. The filtering option is powerful tool to automatically sort and clean up your mailbox, unfortunately with Opera or Hotmail I wasn't able to find such a tool.

There is one more interesting regrouping option offered only by Thunderbird and Hotmail which is regrouping by known contacts. Most of the time when looking for a letter it is known if it was someone from contact list or not and it might narrow down the amount of positive answers to keyword search a lot.

Table 1. [9] – [23]

	Microsoft Outlook 2007	Mozilla Thuderbird 8.0	Windows Live Mail	Opera Mail	Windows Live Hotmail	Gmail
Free Service or software	Y	Y	Y	Y	Y	Y
Web Service					Y	Y
In use since	Jan. 27. 2007	Dec. 7. 2004	Nov. 6. 2007	June 28. 2000	July 4. 1996	Apr. 1. 2004
Cross Platform supports:						
Windows	Y	Y	Y	Y	Y	Y
Mac OS X		Y		Y	Y	Y
Linux		Y		Y	Y	Y
Downloads mail (works offline)	Y	Y	Y	Y	Y	Y
Can Manage multiple accounts	Y	Y	Y	Y	Y	Y
Spam Filter	SmartScreen	Bayesian spam filter	SmartScreen, Sender ID	Bayesian spam filter	SmartScreen technology, Symantec Brightmail anti-spam content filter, SenderID and DomainKeys	community-driven system, Sender Policy Framework, DomainKeys
Search Capabilities						
Quick Search	Y	Y	Y	Y	Y	Y
Detailed search (multiple filters applied)	Y	Y	Y	Y	Y	Y
Contact based search	Y	Y	Y	Y	Y	Y
Search includes attachment name	Y	Y			(in Detailed search)	Y
search includes attachment text	Y		Y		Y	Y
Search by date	Y	Y			Y	Y
Regrouping by						
Unread Mail	Y	Y	Y	Y	Y	Y
Starred / Flagged	Y	Y (Starred)	Y	Y	Y (Flagged)	Y
Mail from known contacts		Y		Y	Y	Y
Mail with attachment	Y	Y	Y	Y	Y	Y
Tags / Categories	Y (Categories)	Y (Tags)		Y (Labels)		Y (Labels)
Mail from social networks (facebook/Orkut)	(with filters)	(with filters)	(with filters)		Y	(with filters)
Groups & Newsletters	(with filters)	(with filters)	(with filters)		Y	(with filters)

4. Search capabilities and use cases

Next I will put these email clients search capabilities to a test. I have downloaded my own mailbox to all of these mail browsers to see which ones perform the best. Unfortunately Windows Live Hotmail doesn't support IMAP and I wasn't able to load my mailbox to Windows Live Hotmail server. I will compare the other 5 email clients on three use cases, which are typical situations where user is looking for a certain mail and only remembers limited information about it. Browsing through 20 mails is not that bad, but if a mailbox has over 14100 emails, like mine used in this test, it could get tricky and time consuming trying to find the right email. So I'm trying to find out which one of these email clients will help narrow down the amount of emails to search from the most and if there is a big difference of how much does the search take time. I didn't expect to see a bigger difference than a second or two.

The cases are following:

1. In my work I seem to get a lot of information on my email, which is great because I can access it from everywhere. The trouble is that sometimes I need files from long time ago and finding that certain document among 14 000 other emails, might take some time. So the first assignment is to find an excel document from a colleague which was sent somewhere between April and May in 2010.

2. Finding an email from a certain contact and time period usually gives a pretty good chance of finding what I am looking for. How about a letter from someone I don't know (don't remember email or name), about a certain topic (for example ski trip) in certain time frame (winter 2010). In these situations I'm usually trying to get it right with couple of keywords and hope the list I get is not too long.

3. Like mentioned in the beginning Christmas time seems to be the only time, when people still send real postcards to each other to remind our loved ones that they care about them and wish them all the best. Unfortunately as people only do it once a year then I've noticed that I don't really keep track of people home addresses, I know where they live and might know the street name, but the full address I have trouble finding and remembering. So the third assignment is to find an address of a person you know and you know the street he lives on.

1 - Case 1.

Since I am looking for an excel file, I am going to search for a string ".xls" with email clients that use the attachment name in their search (Gmail, Outlook, Thunderbird, Hotmail). The next step would be trying to narrow the search by using the time period given, when I received the file. If possible I use other capabilities that email clients offer.

Gmail – I open the advanced search and look for emails in my inbox and fill the fields accordingly "To: me"," Has the words: .xls", "Has: attachment", and "Date within 1 month of 1st of May 2010". This search will result in 24 conversations [22] and 59 emails sent in the month of April and May in 2010, that have an attachment and have ".xls" written somewhere in the email (Figure 10). Without marking the need for an attachment, I would have had 27 conversations answering to that inquiry and without requiring that it was sent to me, 32 conversations. If I also remove ".xls" from the search, I can see that in those 2 months I received 724 conversations in my inbox. Luckily 24 is small enough number that I can easily pinpoint the email I was looking for.

Figure 10. (Gmail advanced search view)
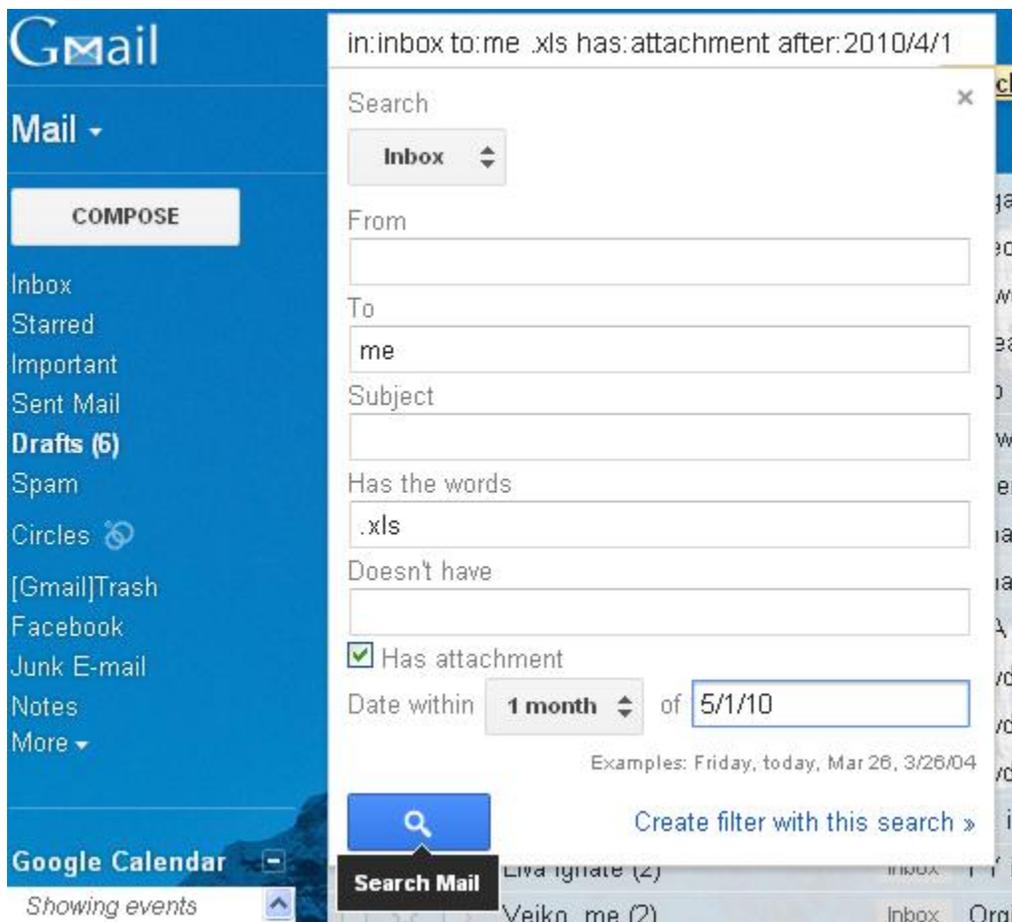
Thunderbird – As Thunderbird also uses the title name in its search, I type ".xls" to the advanced search, this will give 174 emails answering to that search. From the left menu it is possible to select that this letter should be in inbox, which leaves us with 122 emails. After adding that the email I am looking for has an attachment I will get 108 emails as a result. When I selected a year 2010 from the histogram chart I got 40 emails that fit the criteria and 6 of them were sent in April and 1 in May, so the total is 7 emails and it is easy to find the right email among these (Figure 11). Question that rose from this was why there were only 7 emails that fit the criteria and not 24 like I had in Gmail's search.

Looking closer I found that searching for ".xls " doesn't give files that have ".xlsx", so when looking for emails containing ".xlsx" I found another 5 emails in April. But it's still not 24 emails, what it should be. To test it I sent myself three letters with attachments "test.xls.xlsx", "test.xls" and "test.xlsx". When I searched for ".xls" in my inbox I didn't see any of my sent letters, but when I searched for ".xlsx" I had "test.xlsx" show up in the results. For some reasons the search has some errors and although I found my mail the search results were not complete.

Thunderbird search has a nice layout that makes it easy to modify the search criteria's and show quick preview of the emails that matched the search. File names are conveniently shown on the side and the histogram on top to choose the time period, so user doesn't have to open each email separately to check if that is the right one.

Figure 11. (Thunderbird advanced search)
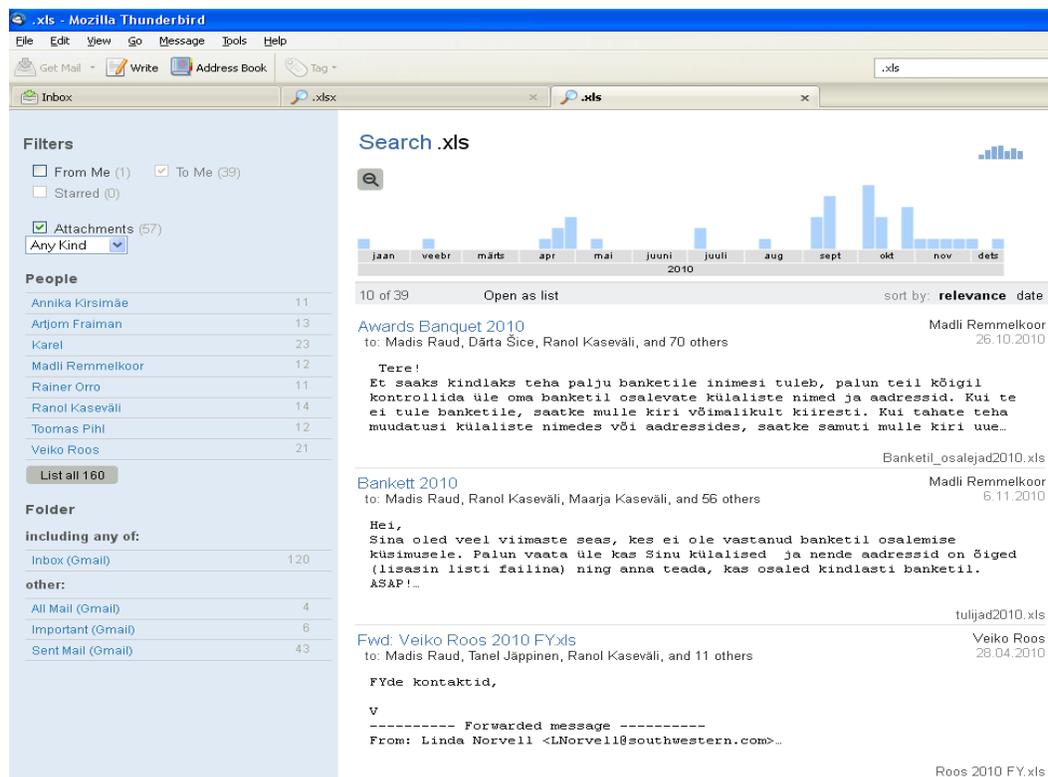
Outlook – Since Outlook also should effectively search the attachment name for matching keywords, I wrote ".xls" on the search line and got 485 results to that search, it even found my "test.xlsx" file. Choosing "attachment: yes" from the search criteria's will help narrow the search to 459 emails. When trying to choose for a time period it only offers options like "last year", "This year", "Last month", "yesterday" and etc. Unfortunately this will not help to choose the specified time period that was required. Although it is possible to organize the remaining 459 emails by date and go to the specific time period, there are still 37 emails and 28 conversations in that time period that match the criteria.

I also tried to use the advanced search Outlook offers to see if it gives any better results. Open Tools -> Instant Search -> Advanced Find. Here it is not possible to search for a string ".xls" because advanced search apparently doesn't support searching attachment names for matching keywords. So I tried to limit the time period first, by going to advanced tab and defining my own criteria. In my opinion this might already be too difficult for an average user. The result is 989 emails in inbox and the difference with Gmail is that Gmail groups conversations together, but Outlook shows each email individually. Next I select from "more choices" menu "only items with: one or more attachments" which leaves me with 142 answers (Figure 12). It is possible to regroup these emails by name now and start looking for colleagues who might have sent that letter, but there aren't many other options that I could come up with on how to narrow down the search. Outlook will probably give me an answer in situation like this, but it sure didn't make it easy for me and it wasn't very convenient to use.

Figure 12. (Outlook advanced search view)
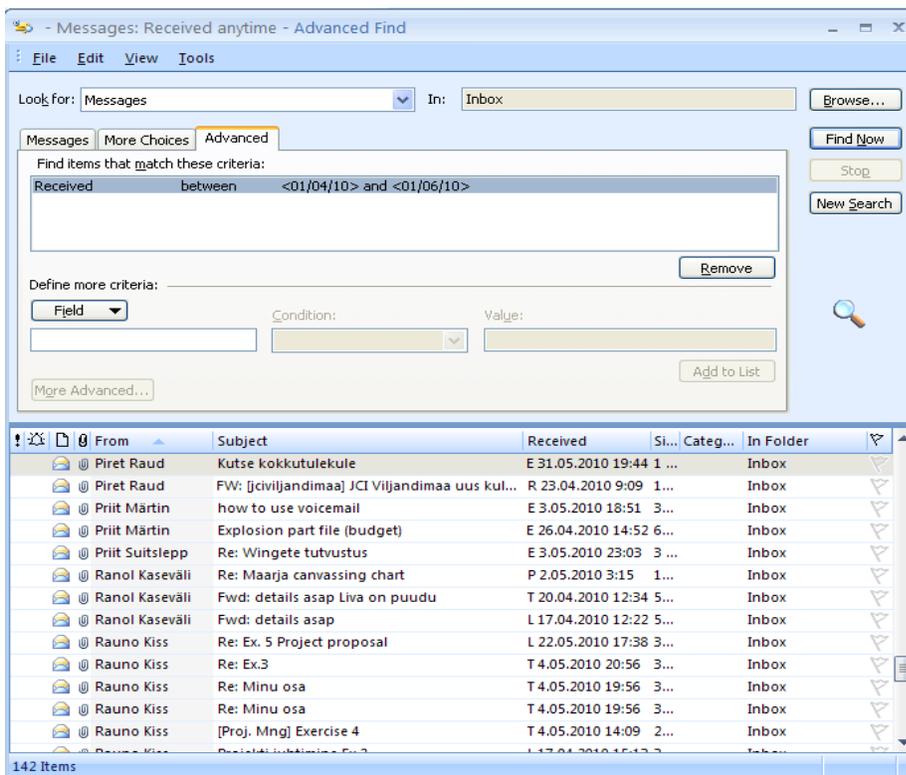
Hotmail – Since hotmail doesn't support IMAP I wasn't able to load my old emails to the hotmail account I created, but I decided to do this test on last month, just to see how easily and correctly does it show the results. I open the advanced menu and fill out fields „Folder: Inbox", „Keyword: xls" (bcause it didn't show anything for „.xls"), „Date between: 12/1/2011 and 1/1/2012" and „Has Attachment" (Figure 13). This search gives 12 answers and when I make the same search on Gmail, I get the same results. Just like Thunderbird, Hotmail doesn't find „xlsx" files, when searching for „xls", but luckily in December there weren't any „xlsx" files sent. To my surprise Hotmail's search was pretty easy to use and would have probably given less than 24 emails as a result to the original test case, but searching both „xls" and „xlsx" files would have probably given the same result with Gmail.

Figure 13. (Hotmail advanced search view)

Windows Live Mail – Since Windows Live Mail doesn't have an advanced search and it doesn't search for keywords in attachment names then the only way to get closer to the email I am looking for is by sorting mail by attachment. This way emails with an attachment will be in front and since they are on a time line in a descending order I can find the emails with attachments from April and May 2010 fairly easy. The only problem is that there is 148 of them. So not much search support for this kind of case.

Opera – Quite like Windows Live Mail, Opera doesn't really support searching keywords in attachment name and it doesn't offer an advanced search either. It does offer you to just look at emails with attachments that are Document type of attachments. Since it is possible to organize these emails by time, finding the time period is relatively easy, but in Opera there are 196 emails with documents between April and May (Figure 14), so it still seems to be very limited search capabilities.

Figure 14. (Opera Mail main view, with sorting options on the left)
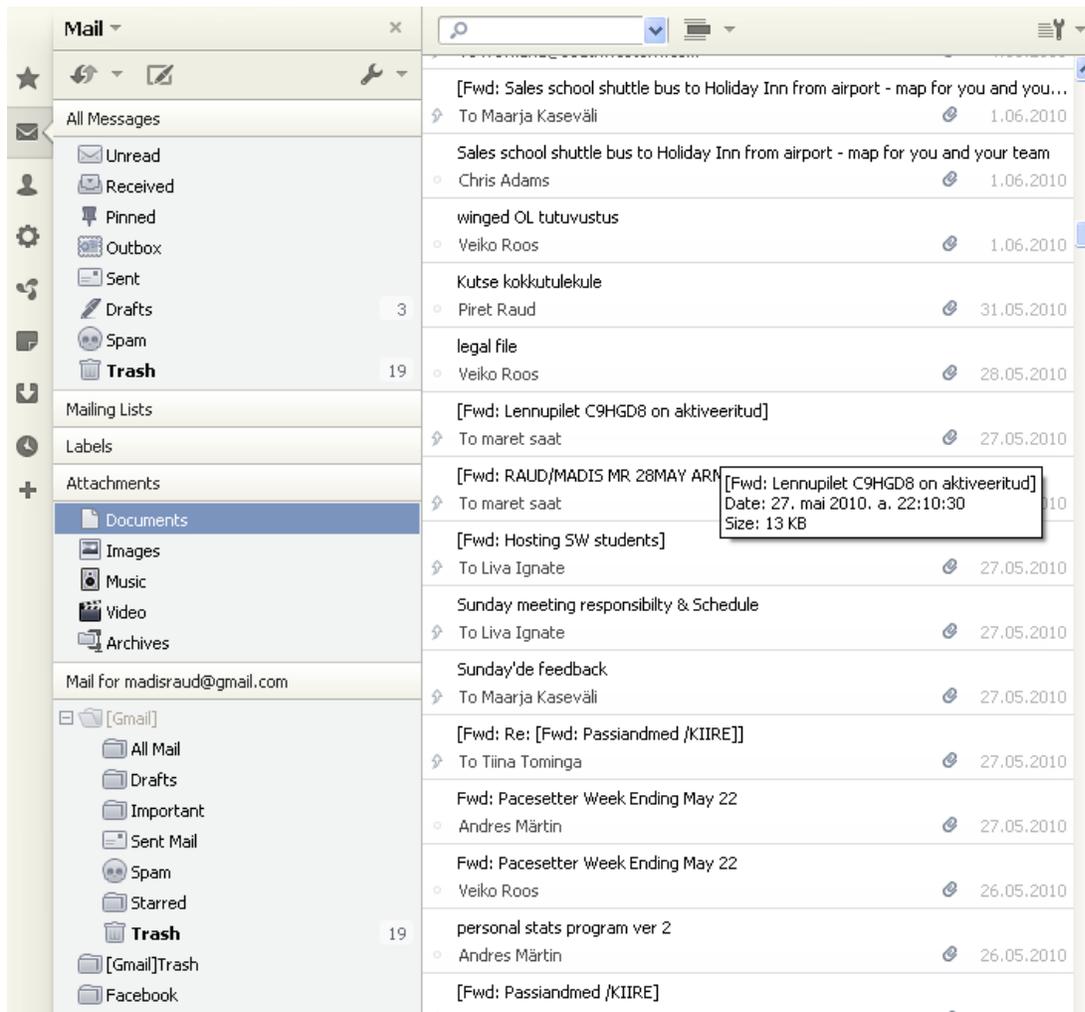
Case 1 Summary – although it wasn't possible to test Hotmail with the real case it seemed that it would give similar results to Gmail's, both of them had implemented advanced search in a way that it's easy to use and access and therefore would get the highest score in this case. The next in results was Thunderbird, which has a very nice interface and gave the answer relatively easily, but was missing some results, so the search wasn't as complete as expected. Outlook, Opera and Windows Live Mail were not able to narrow down the search and left me with hundreds of emails to go through so I had to use the regrouping (organizing) method to look up a certain time period. Outlook performed best of these three, because it allowed searching for keywords in attachment names and left me with 28 conversation and 37 emails, but Opera and Windows Live Mail both left over 140 emails to go through and were very ineffective.

2 - Case 2.

In this case I am planning a ski trip to a place where I have been before and I am looking for all the info about previous trips. So in this case there is no specific addressee, but it is known that the time period was in the winter somewhere from October to January and the emails are about skiing or snowboarding. So I will try to find these emails by writing „ski trip", „snowboard", „skiing" etc. to find it and then look for the time frame expected. In this case I expect all email browsers to give fairly good results, but I am interested to see with which one of them is it the easiest to achieve it.

Gmail – Unfortunately when I searched for „Ski trip", it only found 8 conversations and 35 emails and there wasn't anything about the trips I was looking for. So I decided to search words like „skiing" and „snowboarding". „Skiing" gave 80 emails that were nicely grouped together to 14 conversations and 9 of them were about the place I was looking for. „Snowboarding" gave 7 conversations and none of them were about the right place.

It is convenient how Gmail search groups together emails to conversations so the amount of search results is much smaller and it is possible to tell relatively quickly if a certain conversation is on the topic looked for or not. In this case I found 9 conversations in total and 51 emails in those conversations about the correct place.

Thunderbird –Searching for „Ski trip" gives 27 emails and it found 7 out of 8 conversations that Gmail recognized, but it also found 3 conversations and 7 emails, that Gmail did not find in this search about the trip I was looking for. Probably the reason why Gmail didn't find those emails, was that although the emails in question had „trip" written in its text then instead of „ski", there was „skiing" and that was not considered as exact match by Gmail, but Thunderbird showed that in its search as well. When searched for „skiing" Thunderbird gave 70 emails and all the 9 conversations that Gmail found about the place I was looking for. „Snowboarding" gives 37 emails and none about the right place.

I did find what I was looking for, but the way Gmail grouped conversations and showed more condensed results seemed to be much easier to grasp, then going through 70 emails out of which several were about same topics.

Outlook – When searching for "ski trip" Outlook is using similar conversation grouping method as Gmail and it even highlights the searched keywords in text and titles. Searching for "ski trip" gives 153 emails in 123 conversations. It included a lot of emails that have just "ski" or "trip" in them and some of the emails Outlook found had neither of the words in them, but had attachments that potentially included these words. Most likely it also included the emails I was looking for, but 153 emails are a bit much to search from. When searched for "skiing" I get 25 conversations and 46 emails. Here I still find emails that doesn't have "skiing" mentioned on any of the text fields, but when I open up some documents I can see that it is mentioned there. It seems that Outlook has implemented some sort of attachment text search. In the search for "skiing" I found 9 conversations and 13 emails about it. The reason why there were less emails is

that it only showed emails sent to me, but not from me (it's probably because I don't use it as a default browser). Outlook did find one new conversation due to attachment search and it also missed one conversation, because I was the sender of the first email and only the first email included the "skiing" word. "Snowboarding" gave 14 conversations and 26 emails and none about the place I was looking for.

It was surprising to find out that Outlook actually looks for keywords also in attachments. It didn't really add much value to the specific search, but in some case it could make a big difference. The down side of this is that it adds a lot of emails that have nothing to do with the topic; they just have some articles as attachments that include one of the keywords you searched for.

Hotmail – It is not possible to compare the results with this search since my Hotmail account only has emails from last couple of months.

Windows Live Mail – Searching for "ski trip" will result in 93 email messages; it seems that just like Outlook, Windows Live Mail is searching for keywords in attachments text. Seems that the emails I was looking for were also in that list. Luckily "Skiing" will give a little bit less than 40 emails out of which 13 emails were about the right place. Search results seem to be quite similar to Outlook's results with a difference that Outlook emails were grouped together for conversations and it made it a little bit more convenient to look. Just like previously "snowboarding" gives 25 emails, but none are the ones I was looking for.

Opera – Searching for "Ski trip" gives 6 conversations and 26 emails, none of them are right ones. The reason why there were less answers to this search is that Opera's search requires that both words would be present and exactly the same, so skiing trip would not qualify. Searching for "Skiing" I got 11 conversations and 44 emails and 5 of those conversations were about the place I wanted to go to. Just like Outlook, Opera groups emails with same subject together, but still shows all of them, so rather than viewing 11 conversations and their subject the user is stuck with 44 emails to browse through. Searching for „Snowboarding" didn't give any positive results.

Case 2 Summary – Seems that the best keyword for searching turned out to be "skiing" and I will base the summary on the results of that search. Gmail seems to have the best results again, because it gave all the emails except one (where skiing trip was mentioned in attachment). It gave the clearest view, by grouping the conversations together and showing just 14 conversations out of which 9 were the ones I was looking for. Outlook and Windows Live Mail both gave quite satisfying results and most surprising was the capability to search for keywords in documents. Outlook did offer the option to group the conversations together, but didn't automatically show them as one, so it still left me with 46 emails to look at. Thunderbird's search also found all the emails, but since they were scattered over long period of time and there were over 70 emails it wasn't presented as nicely as other email browsers had.

3 - Case 3.

In third case I'll try to find my brother's home address from my mailbox. I know he lives on "Pärnu mnt." in Tallinn, but in order to send him a postcard I would need the whole address. Again I am trying to find an email client with the least amount of results that would include the correct email(s) containing information I am looking for.

Gmail – I'll start off by writing "Pärnu mnt." in search bar, this results in 19 conversations, most of them are businesses located on "Pärnu mnt." Next I'll add my brother's first and last name in the search and I'll get 4 conversations. Two of them include his address, other two had me and someone else with the same first name as my brother involved in conversation. Seems like Gmail has achieved finding what I was looking for very fast and easy. When adding a filter from Martin Raud (my brother) instead of just writing it on the search bar, I get exact match, two letters that I was looking for.

Thunderbird – Searching for "Pärnu mnt." in advanced search gives 25 emails. On the left bar I can add filters, so I'll add that all results should involve one of my brother's email accounts. That way I'll get 3 answers that match the criteria and 2 of them are the ones that have his full address. It took a little bit more time than with Gmail and the results are practically same. When searching for "Pärnu mnt." and "Martin Raud" I'll get 5 conversations and 6 emails. There was one more conversation compared with Gmail results, because Thunderbird accepts partial match like "Pärnus" when searched for "Pärnu".

Outlook – Gives 56 emails in 47 conversations and the reason behind it is again in reading attachments. This might be useful if I didn't have his address in the email, but instead in one of the attachments, but right now it just creates a lot of random results in the search. Adding my brother's name to the search leaves me with 26 emails in 24 conversations. If instead of writing just "Martin Raud", I add a filter "from: Martin Raud" the result is 6 emails in 4 conversations and if I'll put Martin Raud in quotation marks, then it will give me 4 emails sent from my brother and the results are exactly the same as with Thunderbird. Compared to Thunderbird it took a little bit more craftiness to get there, but all in all not too complex.

Windows Live Mail – Searching for "Pärnu mnt" will give 44 emails due to searching in attachments and adding "Martin Raud" to the search leaves me with 15 emails. Since there really isn't any advanced search or filters I can apply the end result with Windows Live Mail is 15 emails. The amount of emails left is not terrible, but compared to other clients I have tested so far there are 3-5 times more results and still 2 emails what I was looking for.

Opera – Searching for "Pärnu mnt." gives 24 emails, adding my brother's name will narrow it down to 5 emails and 4 conversations; it also has the 2 emails I was looking for. It was relatively easy and fast to get to the results.

Hotmail – In order to try this search, whether or not Hotmail will find those letters, I forwarded them to myself. Hotmail found them without problems and based on first case most likely the results would have been similar to Gmail's results.

Case 3 summary – In this case as far as amount of emails left in a search all email clients besides Windows Live Mail got reasonably good results. Gmail, Thunderbird, Outlook and Opera all gave under 6 emails to the search, but in case of more similar emails Thunderbird and Gmail advanced searches would have been preferred to Outlook advanced search, which is not as intuitive and Opera with no advanced search at all.

Summary

In this paper I gave an overview of existing email browsers and services like Gmail, Hotmail, Opera, Thunderbird, Windows Live Mail and Outlook. The goal of this paper was to find out if these browsers' search capabilities are adequate to deal with the capacities of today's email accounts. In addition I tried to find out which of the browsers and services had the most user friendly interface and which search options gave best results.

As the amount of emails sent and received grows, the need for more in-depth search options in email browsers is also becoming more important. In this work I found out that some email browsers like Gmail, Outlook, Thunderbird and Hotmail are trying to match today's users' growing needs and have implemented an advanced search to their browsers. At the same time Opera and Windows Live Mail have stayed with basic search and regrouping which proves to be very ineffective with a bigger amount of emails. Therefore I would not recommend either of them for handling your email account. When choosing between the two email services Gmail and Hotmail I strongly recommend using Gmail, mainly because of the IMAP support, but also for its effective search and compatibility with other devices, software and services. The only area where Gmail is lacking is the difficulty it has to effectively access it without Internet connection. That's the main reason why it is good to have a local copy of your email account and use software based email browser. Choosing between Thunderbird and Outlook really comes down to each users' individual needs. When using an email browser just for reading and answering emails online and offline I'd recommend Thunderbird which focuses on that. If there's a need to use calendars and to do lists daily, then Outlook seems to tie all these features nicely together and makes it possible to access it all at the same time.

When testing these email clients on my personal email account I found that Opera and Windows Live Mail definitely have room for improvement in their search capabilities while with other browsers I managed to find what I was looking for relatively easily. Outlook's advanced search was a bit overwhelming for me and I can't imagine a regular user using it effectively. Thunderbird, Gmail and Hotmail had nicely implemented and intuitive advanced search.

Most of the email browsers mentioned above have add-on's that would improve their performance. Like automated tagging for Thunderbird (TaQuilla) or advanced search for Google account (Cloud Magic), but in my experience most of them are more hassle to regular users than it helps them.

Meiliklientide ja nende otsinguvõimaluste võrdlus

Madis Raud

Bakalaurusetöö (6 EAP)

Sisukokkuvõte

Paberkandjatel kirjade saatmine on tänapäeva maailmas end ammendamas ja suur osa inimeste vahelisest suhtlusest toimub elektroonse meedia vahendusel. Kirjade posti teel saatmine on pea täielikult asendunud elektronposti ehk meilide saatmisega. Viimase aastakümne jooksul on see muutunud nii populaarseks, et inimeste elektroonpostkastid on üle kuhjatatud meilidega, millest soovitud kirja leidmine võib olla aeganõudev ja tülikas.

Töö eesmärk on anda ülevaade olemasolevatest meili teenustest ja programmidest ning tuua välja nende plussid ja miinused. Selle tööga tahan aidata tavakasutajal leida sobivaid alternatiive oma harjumuspärase veebipõhise meili kliendi kasutamisel, mis potentsiaalselt säästaks kiires töökeskkonnas aega. Selleks võrdlesin kuut enim kasutuses olevat meili teenust ja programmi. Uurisin kui mugav ja lihtne on neid kasutada ning kõrvutasin otsingute parameetreid ja võimalusi, samuti hindasin erinevate kasutuslugude otsingute tulemusi.

Võrreldavateks programmideks olid Outlook, Thunderbird, Opera ja Windows Live Mail ning veebipõhistest meili klientidest lisasin ka Gmaili ja Hotmaili. Eraldiseisvate tarkvarapõhiste ja veebipõhiste meili kleintide üheks suurimaks erinevuseks on Internetiühenduse vajadus meilide sirvimisel. Selle töö tulemuste põhjal võib soovitada Gmaili eelistamist Hotmailile, kuna Gmail on ühilduv ka teiste Google teenustega ja toetab IMAP'i, ning Gmaili kasutajaliides on Hotmailiga võrreldes intuitiivsem ja soliidsem. Kui kasutajatel on oluline varasemalt loetud meile lugeda ka ilma Interneti ühenduseta, on soovitatav alla laadida eraldiseisev tarkvarapõhine meili klient. Käesolevas töös võrreldud meili klientidest võib soovitada Thunderbirdi ja Outlooki, mis jätsid teistest võrreldud tarkavarapõhistest meili klientidest, otsingute tulemuste ja võimaluste põhjal, oluliselt parema üldmulje. Thunderbirdi plussideks on see, et erinevalt Outlookist on tegemist tasuta programmiga ja keskendutakse ainult meilide esitamisele. Samas kuigi Outlook on tasuline tarkvara, hõlmab ta endas lisaks meilide sirvimisele ka võimalust samas kohas koostada tegevusnimekirju ja talletada sündmusi isiklikku kalendrisse. Seega on tegemist programmiga, mis lisaks meilide lugemisele, aitab kasutajatel planeerida tegevusi ja koostada tegevusnimekirju.

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