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The Role of Trust in Long Distance Computer-Mediated Communication: A Study on Skype

Master thesis

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Author's Declaration

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This thesis has not been submitted anywhere for any other comparable academic degree.

Thesis has been supervised by PhD Sonia Sousa (Tallinn University, Estonia) and Siddharth Nakul Gulati (Tallinn University, Estonia).

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Abstract

This thesis aims to gain additional insight into long distance computer-mediated communication from the perspective of trust. A survey based on the socio-technical model of trust was conducted to evaluate a popular communication tool, Skype. The research confirms that people rely heavily on computer-mediated communication to maintain their long distance relationships. In addition, the results show that Skype is perceived to be an efficient tool for communication and connections between several trust attributes were found.

Kokkuvõte

Käesoleva teadustöö eesmärk on saada lisateadmisi arvutipõhise kaugsuhtluse kohta, seda usalduse perspektiivist. Sotsiaal-tehnilisele mudelile tuginedes loodi uuring, hindamaks populaarset kommunikatsioonivahendit Skype. Uuring näitab, et inimesed sõltuvad kaugsuhete säilitamisel suurel määral arvutipõhisest suhtlusest. Lisaks näitavad tulemused, et Skype'i tajutakse kui tõhusat kommunikatsioonivahendit ja seosed erinevate usalduse tunnuste vahel leidsid kajastust.

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Introduction

Approximately 20% of Estonians live outside of Estonia either for a short while or permanently. The probability of telling the accurate statistics is low because of several reasons, such as, some countries not keeping track of the ethnicities of people, who have moved to their country and descendants of Estonians blending into the new societies (“Eestlased välismaal”, n.d.). But 20% of 1 311 800 people is more than 26 000 people (“Eesti rahvaarv eelmisel aastal vähenes”, 2016), which means that people cannot meet in real life very often and the relationships, either between families, friends or significant others are forced to find new ways to be maintained. Moving aside from the fact that these statistics were only for Estonia, the number of people across the globe working or living abroad is even greater. For example 17,5% of Irish and 14 % Portuguese and the same percentage of New Zealanders live abroad and though the percentage is smaller than in Estonia, the number of individuals is greater due to the bigger size of these countries' (McCarthy, 2016). Making the topic of this thesis a worldwide phenomenon. One option for those people to stay in touch is via computer-mediated communication (CMC).

Centuries or even just decades ago, the best way of communication was a handwritten letter, but the correspondence took a long time according to today's standards. With the invention of a telephone, synchronous communication over long distances was possible for the first time. But nowadays, there are countless ways to stay in touch with people right next to you or halfway around the world at the same speed. All of this can be attributed to the advancements in the field of Information Communication Technology (ICT). A person can pick between several devices (PCs, laptops, smart phones, tablets, etc.) and there can be multiple applications which can be installed on these devices that are meant to help people communicate, when they're not in close proximity. Without long distance communication, many close relationships will not survive the test of distance and time. And if they did, the relationships will not be as satisfying and fulfilling as they are with the help of modern communication technology.

There are many factors that influence the quality of a relationship. That relationship is commonly between people, but as technology has become an inseparable part of everyday life for a large majority of people and as they share a lot of personal information with or through technology, relationships between the two should be taken into consideration as well. One of the factors for a healthy relationship is trust. Trust in very general terms can be defined as a firm belief in the

reliability, truth, or ability of someone or something (“Trust”, n.d.), but that definition comes nowhere close to taking into consideration all the nuances that go together with trust. A more detailed definition is given at the end of the next chapter. To help evaluate trust between humans and technology, a socio-technical model of trust has been developed (Sousa *et al*, 2014). Furthermore, using the model, the role of trust in a widely used tool will be evaluated. That tool is called Skype. Skype provides a service where people can make video calls, audio calls, send instant messages, share files and a lot more.

Research problem

The field of human computer-interaction is constantly evolving. We are now within the third wave or paradigm of the field and computing is at its finest and most exciting stage (Bødker, 2015). Within this paradigm, there is heavy emphasis on designing technologies which are value centric and cater to different human values such as trust, empathy etc. The focus of the current thesis is on using trust as a value in technology design process.

The topic of this thesis is inspired by the statistics given at the beginning of the introduction. With so many people having to rely on computer-mediated communication to stay in touch with their loved ones, the least people working in various Information Technology (IT) fields, developing the tools, can do, is make the communication as pleasant as possible. This includes developing tools that people can trust. By conducting this research, a little more insight, as to what would improve user's trust levels may be gained.

Research goals

One of the goals of this thesis is to see how computer-mediated communication has changed the way long distance relationships are maintained. This goal is more theory based and meant to support the goals set for the study.

Secondly, the main goal of the thesis is to understand the role of trust in facilitating long distance communication over Skype. Together with that, another goal is to ascertain whether Skype is a

good tool for long distance relationship maintenance more precisely whether people trust the tool they use.

Research questions

Because modern technology is crucial to maintain fulfilling relationships one of the main questions guiding the study is to understand how people perceive communicating through Skype and secondly, if there exists a relationship between different trust attributes as proposed in the socio-technical model (Sousa, 2014).

The research questions for which answers from literature are looked for are, how has long distance computer-mediated communication evolved through time and what role have technological developments played in enhancing it. Moreover, how has technology changed the way people maintain relationships over long distances? In the study part, the questions guiding the research are, how people use long distance communication tool, Skype? How people evaluate either themselves or Skype according to the socio-technical trust model and what are the connections between the trust attributes and user satisfaction?

Research methodology

The first goal, the evolution of long distance computer-mediated communication, can be achieved through extensive literature review. The second, more important goal is achieved by conducting a study among people in long distance relationships, who use the tool Skype for maintaining those relationships. As mentioned above the theoretical part is written on the basis of an extensive literature review. The practical part of the research is conducted by developing a survey based on literature review and socio-technical model of trust. The data is collected from people with experience with long distance relationship maintenance via computer-mediated communication. Then the data is analyzed with various tools and analyses and lastly conclusions are made based on the results.

Structure of the thesis

In the following chapter a theoretical overview of the evolution, definitions, categories and related work in computer-mediated communication will be given. Some well-known CMC solutions will be looked into and examples of each will be described briefly. Following that, long distance relationships and how they are maintained will be discussed. The last part of this chapter focuses on trust and explains the trust model used for the study.

The second chapter focuses on the study. It starts with the description of the methodology used for this research, followed by reporting of the results, answering the research questions and a discussion.

The thesis ends with a conclusion, which summarizes the whole thesis and includes recommendations and suggestions for future work.

The appendices include some larger illustrations and the survey both in English and Estonian.

1. Theoretical background

The theoretical background chapter aims to provide a brief historical overview of computer-mediated communication, look at how different authors have defined the phenomenon, and how it has been divided into smaller categories. Furthermore, this chapter will also look at some popular CMC solutions and their well-known examples. The second half of the theoretical background will start with the focus on relationships, especially long distance relationships, and the influence of computer-mediated communication on such kinds of relationships. Finally, the socio technical model used as a research lens will also be described in detail.

1.1. History and evolution of computer-mediated communication

Computers have been around for decades now, with the first digital computer being invented around the time of World War II and we can count the start of computer mediated communication from the moment, when the first message was sent from one computer to another (Thurlow *et al*, 2004). This was possible because of the joint efforts of U.S. Department of Defense in cooperation and several research universities, when in the 1960s and early 1970s they linked together computers to form a network – the Internet. In the beginning, the Internet was used for communications in an old fashioned way by sending electronic mail from one person to another, but users quickly realized that via computers, information could be just as easily sent from one to many, giving rise to mailing lists and bulletin boards (Jones, 1994). In the beginning, the main thing people did on the Internet was communicating with other people. Whether it was via previously mentioned email, lists and bulletin boards or chat rooms, newsgroups and MUDs (Multi User Dungeouns/ Dimensions) (Herring, 2002)

With the maturation of Local Area Networks (LAN) and with Tim Berners-Lee inventing World Wide Web (WWW) in 1989, an additional push was given to the demand of personal computers. In the middle of the nineties (1993-1995) getting connected spread like wildfire. More and more individuals started buying personal computers (PCs) and Internet connection and companies started making their presence known online. The internet, web browsers and computers in general became much easier to use even for people who were not proficient with computers This period marks a turning point in computer history as well as human history in general (Grudin, 2010).

Today, there are many ways people can communicate via computers, but it all started with text-based messaging. Gradually, two and three dimensional graphics, audio and video emerged to make the conversations richer. The technology has developed as well. In addition to LAN, not only is there wireless internet connection (WiFi) for a big range of devices, but also mobile broadband in mobile devices, that allows people to connect to the Internet almost anywhere. In addition, there aren't just desktop computers, but also laptops, tablets, smart phones etc. that can all connect to the Internet and have endless solutions (software, applications etc.) for online communication. The technological evolution has helped CMC to become a ubiquitous part of peoples' everyday life (Spears & Postmes, 2001).

Though, the term computer mediated communication was used in research already decades before, the author of this thesis will concentrate on interpersonal communication, leaving out work, education and research related CMC. The origins of interpersonal CMC research can be traced back to the mid 1990's when research done by Thurlow *et al*, (2004) pointed out to the emergence of personal computers/computing on more desks at people's homes, offices, schools, etc. thus truly sparking the interest of scholars and laying the foundation for computer mediated communication as a research field.

1.2 Computer-mediated communication

Communication in itself is "a process by which people exchange information or express their thoughts and feelings" (Yu, 2011). People can communicate face-to-face, via telephones, letters, etc., as well as via computers. The latter is called computer-mediated communication (also computer mediated communication or CMC for short) and is just a new form of communication that people use more and more. In short, CMC can be defined as any communication between two or more people via the medium of technology (Ess, 2003; Kerr & Hiltz, 1982; McQuail, 2010; Yu, 2011; Thurlow *et al*, 2004). Herring (2002) stresses and other previously mentioned authors have also implied that, if one wants to talk about computer-mediated communication they must refer to a network connection or the Internet, as without it CMC would be (nearly) impossible. In addition, to considering a computer a CMC system, it needs to be connected to a network, otherwise, it's just „a calculator or a processing unit with the ability of dealing with information." (Yu, 2011)

From the previous sub-chapter 2.1.1 we found out that computer-mediated communication has evolved greatly, from a text-based communication with low media richness, to a ubiquitous and highly rich one. Well-known forms of CMC are e-mail, text, audio and video chat (individually and in groups), bulletin boards, list services, MMOs (massively multiplayer online games), multimedia and file sharing and many others depending on the used device (Yu, 2011; Ess, 2003). Though, most researchers claim that CMC is a process taking place between humans, there are those, who define CMC vaguely enough to include other "intelligent agents". One of those people is Charles Ess (2003), who in his definition leaves space for CMC to take place between a human and an artificial intelligence (AI) system. This approach, though interesting, is somewhat futuristic and hence left out of this thesis (Ess, 2003).

As a study, CMC can focus on various interdisciplinary theoretical perspectives, such as, combination of people, technology, processes, or effects. In addition, these perspectives may include „the social, cognitive/ psychological, linguistic, cultural, technical, or political aspects and would draw heavily from varied fields such as ; and/or draw on fields such as human communication, rhetoric and composition, media studies, human-computer interaction, journalism, telecommunications, computer science, technical communication, or information studies." (December, 1997)

Owing to the high adoption rate and usage popularity of mobile devices, another category of CMC has emerged – mobile computer-mediated communication (mCMC), also known as, mobile mediated communication (MMC). Similarly to CMC, MMC is defined as an exchange of information and data between two or more people, but unlike CMC, it can only be considered an MMC when the communication is facilitated through mobile technology (Ogara& Koh, 2014; Madell & Boyd, 2015). A mobile device is a computer that can be used while transportation. That is why usually they're relatively small and can be held in one hand (hence, also known as handheld computers). Though, laptops are portable and can be balanced on one hand, they're still rather large to be comfortabely held and used while on the go. For that reason, laptops aren't considered as mobile devices. As mobile-mediated communication is a subcatgory of CMC, MMC won't be mentioned separately in this thesis, unless it's necessary to differentiate the two.

1.3 Subcategories of computer-mediated communication

There are several ways to categorize CMC. One option is to categorize it by the types of interactions one can have – impersonal, interpersonal and hyperpersonal. Impersonal interactions are ones that have little to no social interaction and are oriented to fulfill a certain task. Interpersonal interactions take place between people who are socially oriented. And thirdly, hyperpersonal interactions are the type of CMC that are "more socially desirable than we tend to experience in parallel face-to-face interactions" (Walther, 1996 as cited in Robinson & Turner, 2003). In addition, in Walther's view "hyperpersonal communication may occur within CMC based on senders' and receivers' reciprocal and hyperbolic construction of each other and their relationship, within a minimal cues environment." (Robinson & Turner, 2003) thus creating a greater online intimacy. In this thesis the author will mostly concentrate on interpersonal interactions and occasionally on hyperpersonal interactions, as they are the ones present in long distance close relationships.

1.3.1 Types of communication

Online communication can be either synchronous or asynchronous. Synchronous communication means that all participants need to be online at the same time for simultaneous communication. Asynchronous communication on the other hand means that there is a bigger delay between receiving and sending messages (Herring, 2002). In this case, people do not need to be online to receive a message and can read and respond when it's convenient for them. Most popular asynchronous communication method is email. Though, depending on the context, emails and other asynchronous systems tend to be more formal in their form and language. In addition, the asynchronous nature of email allows more time and thought to be put into an email than to, for example, synchronous instant messages, where responses are expected to be instantaneous. In other words, compared to asynchronous CMC, synchronous conversations usually include shorter alternating messages of relatively free style.

The distinction between asynchronous and synchronous solutions used to be clearer, but nowadays, when people have smart phones with Internet connection with them at all times, the lines can blur slightly. Email is considered to be an asynchronous form of communication and it generally is, but when the emails are sent back and forth in short intervals, then by definition it turns into

synchronous communication. And the opposite may occur when, while instant messaging or texting the gaps between each message become too long and irregular, then the conversation becomes asynchronous.

1.4 Examples of popular CMC solutions

In this sub-chapter several well-known CMC solutions, such as email, IM and video calls will be depicted. The solutions will be described and popular examples will be briefly analyzed.

1.4.1. Email

Email is probably the best known form of CMC and as the oldest CMC still widely in use, it has been the basis for a great number of research (e.g. Johnson *et al*, 2008; Kitade, 2006). Though, electronic mail has its beginnings already in the 60s and 70s we can talk about the "modern" email from 1993, when America Online and Delphi connected their email systems to the Internet, thus kicking off email adoption globally. But in recent years analysts have predicted (Brandt, 2014) that the use of email is declining. This is not the case with business emails as they are predicted to be on the rise, but could easily be true for private emails as social media and messaging tools have taken over private conversations. In addition to or instead of sending emails on a computer, people also send more and more emails from their mobile devices.

In order to send an email one needs to know the recipient's email address, which consists of individual unique username + @ symbol + the name of the mail service provider = example@emailclient.com. Strongly recommended, but not compulsory are the title of the email, more commonly known as "Subject" and of course the body of the email, which can be customized similarly to a text in a word processor. In addition to text, files (documents, photos, videos etc.) can be sent through email as long as the size of the whole email doesn't exceed a certain size (e.g. 25MB on Gmail, but commonly sending an email no bigger than 10MB is recommended).

Sending an email seems simple enough and the recipient receives it almost instantly, but during that short time, the email goes through a number of points in its path from the sender's computer to the recipient's computer (Figure 1) portrays the route. The only parts people can see and interact

with are email clients, software that manages email (“What’s an Email Client”, 2010), the rest is done behind the scenes.

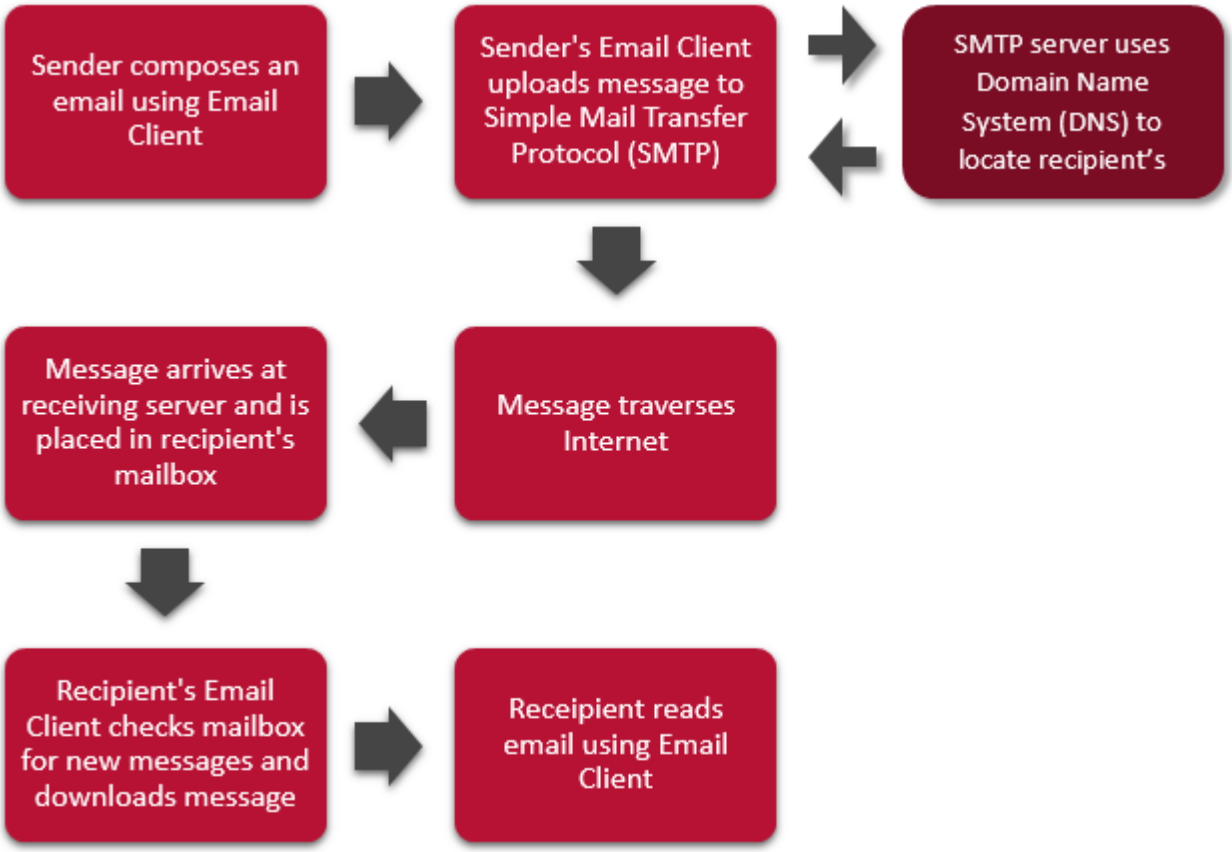

Figure 1 Email’s path from the sender’s computer to the recipient’s computer (**“**Diagram of how email works”, 2010)

One of the most popular email clients in the world is Google’s email service, Gmail, with at least a billion active users. That number has grown almost three times since the beginning of 2012, when Gmail had only 350 million users (“Number of active Gmail users”, n.d.). Gmail was launched already back in 2004 and has gradually taken over a large portion of the emailing user base. As Gmail is only one of many services Google provides, it is connected to all others, making it easy to share and organize ones things cross applications and platforms, such as, sending files from ones mailbox straight to Google’s cloud service, Drive, or short cutting to a video call with a contact on Hangouts. Gmail’s desktop version is also very customizable, starting from folders/tabs for dividing mail by category, changing the layout of the inbox to personalizing the look with different templates to name a few, allowing to user to make it look just as they prefer. Google also has a new

version of Gmail called Inbox, launched in 2014, which has received high praise for its new interface design (Appendix 1) and new features to make email more efficient, but the innovations do take some time to get used to (Raphael, 2015; Brandall, 2015). A comparison of the Gmail's and Inbox's interfaces can be seen in Appendix 1. The fact that Google has come out with a completely new email client shows that, email still has room to develop in order to make the email experience better and better.

1.4.2. Instant messaging

Another popular option for conversations is instant messaging (IM). To clarify, though, IM and texting are similar in nature, they have some key differences. When texting only requires one to know the other person's phone number to send a short message over (paid) cellular service, then IM is a little more complicated. First of all, instead of cellular service, IM uses network data, which is preferable in long distance communication, as international text messages generally cost extra or more than domestic texts, especially if one wishes to send multimedia messages (MMS). Speaking of MMS, sending photos and videos over cellular data is limited (length, size, amount) and sending them costs even more. In contrast to that, sending photos on IM is relatively easy, with less limitations (as long as there is Internet connection1). Nowadays, there are IM applications (e.g. Viber, Skype) that allow people to send messages over cellular data for extra cost (for example, should one or the other participant have no internet connection). Secondly, in order to send and receive messages, both parties need to have the same software, app or even operating system. Furthermore, IM software is more likely to be accessible on multiple platforms, such as smart phones, tablets and computers (Bradley, 2012). It is possible to send text messages from a computer, but this feature isn't widely used. Though IM started off from computers already in 1996 (Boneva *et al*, 2006), it is now used more on smart phones ("Proportion of instant messaging", n.d.). IM is especially popular among the younger generation, especially adolescents, who already have a need for numerous friendships and being part of a group and instant messaging is a great tool to achieve and maintain these goals (Boneva *et al*, 2006).

[1] Sending large files may use up a significant amount of one's monthly data plan.

Most popular messaging apps around the world in January 2016 were WhatsApp (900 million active users2), QQ Mobile (860), Facebook Messenger (800), WeChat (650), Skype (300) and Viber (249) ("Most popular global mobile messenger apps", n.d.). QQ Mobile and WeChat were developed by a Chinese company Tencent Holdings Limited and are most popular in China and other Asian countries. The other apps are more globally known and used.

Today's IM applications have a long list of features, in addition to the basic text based messages, to make the communication richer. In Table 1 are listed some of the most popular IM apps (WhatsApp, Facebook Messenger, Skype and Viber) and a list of their features. As a user of several IM apps, the author has noticed that if one app adds a feature, then sooner or later other apps also add a relatively similar if not completely the same feature to their app. For example, stickers (large illustrated emoticons) were a huge craze in popular Asian IM apps already in 2013 ("Proportion of instant messaging communication", n.d.), but now Facebook, Viber, Skype and others all have stickers in addition to emoticons for users to use to express their feelings.

	Instant messaging	Audio call	Video call	Audio Messages	Video Messages	Emoticons	Stickers/gifs	File sharing	Location sharing	Contact sharing	Photos	Games
WhatsApp	X	-	-	X	X	X	-	X	X	X	X	
Facebook Messenger	X	X	X	X	X	X	X	-	X	X	X	
Skype	X	X	X	X	X	X	X	X	X	X	X	
Viber	X	X	X	X	X	X	X	X	X	X	X	X

Table 1 Popular IM apps and their features

[2] By February 2016 WhatsApp had crossed the one billion active user mark ("Number of monthly active WhatsApp users", n.d.)

1.4.3. Video call

A tool often used for communication by geographically distant people is video call. This means that in addition to hearing the other person they can also see them and, to an extent, their surroundings.

There have been several case studies looking into how couples use video calls for relationship maintenance. Most start with stating that LDRRs are not as rare as thought, for example up to 75% of college students confirm that they are or have been in a LDRR at some point (Dansie, 2012). C. Neustaedter (& Greenberg, 2011) and S. Greenberg (& Neustaedter, 2011) have explored how LDRR couples use video conferencing as a way to "hang out". Couples stated that sometimes just hearing their partner's voice or reading their messages just wasn't enough and they needed to see their face. The most fundamental reason for using video calls was that it "created a unique sense of presence with their partners" (Neustaedter & Greenberg, 2011). Also, video allowed them to see their partner's emotions and surroundings that helped to empathize with their situation (e.g. being tired) and lessened the chance for miscommunication. It's interesting to note that prior to a video conference, couples would still use other mediums, such as IM or phone call, to check whether their partner was available for a video call. The main conclusion from the studies were that couples use video calls to provide themselves with more intimacy even from a distance. A common misconception is that LDR couples aren't as satisfied with the relationship as geographically close relationships (GCR) are. But the research has proven that if there's a will, there's a way, meaning that couples find other ways to meet the requirements of a satisfactory relationship.

They also found that couples sometimes start a video call and then just carry on with their daily activities, such as cooking, cleaning, watching TV etc. all while the video call is ongoing. As intimacy is a big part of a romantic relationship, Greenberg and Neustaedter also explored, whether couples used CMC, especially video, for any sexual purposes (cybersex). The results reveal that even though partners may be sexually free in real life they're more conservative and shy when it comes to sexual acts through computer mediation. Reasons include awkwardness and concerns for privacy (e.g. a third party may record the video) as well as it just not being satisfactory enough.

The first successful and probably the best known application for video callings is Skype, founded in 2003. Taking into consideration the needs of the users, Skype has kept developing and two years later, in 2005, they added a video call option to the application. That was what made Skype a

household name and what it is mainly known for. Skype was first created for desktop and laptop computers, working on Mac, Windows and Linux operating systems. In 2009, Skype was launched on the iPhone and a year later on Android. Other phones, including Windows Phone, BlackBerry etc., have followed since. With the coming of tablet computers Skype was quickly made available on them as well. Today, Skype is also available on more advanced TVs, Blu-ray devices, gaming consoles (X Box, PS4) and even on some smart watches (Apple Watch and Android smart watches), though the features are very limited on the latter. Nowadays, other communication applications have also integrated video calls (e.g. Facebook, Viber, FaceTime etc.), but the Skype brand is so popular that the phrase *to Skype* has turned into a verb synonymous to video calling, like *to Google* is used synonymously with searching information ("Skype". n.d., "Google", n.d.).

Skype has a long list of features, which may vary depending on the device, and the list is expected to keep growing.

Features, as listed on Skype's website ("All features", n.d.):

Calling

- Skype to Skype calls
- Skype calls to mobiles and landlines
- Group calls
- Mobile and landline calls to Skype
- Forwarding calls
- International calls
- One click calls to numbers found on websites

Video

- One-to-one video calls
- Group video calls

Messaging

- Instant messages

- Voice messages
- Video messages
- Skype to mobile texts (SMS)
- Mojis and emoticons
- Group chats

Sharing

- Sending files
- (Computer)screen sharing
- Group (computer)screen sharing
- Sharing contacts' information

Other features (useful mostly for businesses)

- Skype WiFi to get Internet access at public Skype hotspots
- Skype Manager
- Skype Connect for SIP-enabled PBX (Private Branch Exchange) systems
- Skype plugin for Outlook
- Contact me button for websites
- Share button for websites
- Skype Translator (translates voice and video calls in 7 and instant messages in over 50 languages)
- Skype extension (to share content through one's browser)

The long list of features shows, how Skype has tried to compile all sorts of tasks into one place to provide a better, more complete service for communication.

1.5. Computer-mediated communication and human-computer interaction

Human-computer interaction (HCI) and computer mediated communication (CMC) are closely related fields. Some refer to them as equal yet intertwined (Bosveld-de Smet, 2006), while others

(Ess, 2003) expound HCI as a narrower variant of CMC. Charles Ess (2003) explains that any succsessful human interaction that is being mediated through technology needs an interface that allows for a seamless and intuitive communication. That's where HCI comes into play. As the subject matter of HCI is to design interfaces that enable exactly that, as well as, to investigate human and machine capacities, cognitive abilities and possible ways of interaction, the role of HCI in CMC cannot be undervalued.

Researchers who are interested in communication and/or human-to-human interaction (HHI), are more and more faced with the problem that a huge part of todays human to human interaction is actually human-to-computer-to-human interaction (Boca *et al*, 2013). It has caused HHI to overlap with CMC, with HCI being the foundation for them both. In addition, the maturation and development of the CMC research field has also broadened the the nature of HCI (Bannon, 1992). The focus in HCI is not only on the computer anymore, but also on computers as mediators between people.

1.6. Online long distance relationships

Nowadays maintaining a relationship (i.e. preserving a relationship's existence (Duck, 1988 as cited in Tong & Walther, 2011) has been made easier by technological advancements. A few centuries ago, before any communication technology, people sent letters to each other and due to a slow infrastructure the correspondence was extremely slow by today's standards. Since late 18th – early 19th century sending telegrams became also a possibility, but that was mainly used for short and time-sensitive messages such as an extempore visits or major news.

The invention of the telephone and its introduction to private households in the beginning of the 20th century sped up the correspondence over long distances greatly. No longer was long distance communication just asynchronous, but over the telephone synchronous communication was possible for the first time.

Fast forward some decades to the 1980s, when landline telephones were a common household item and first handheld mobile phones came to the market. Mobile phones were a game changer in a sense that they allowed people to make phone calls wherever there was cell reception and didn't

force them to stay in close proximity of the phone base. Since then the percentage of letter correspondence has gradually dropped as faster and increasingly cheaper options have emerged.

In chapter 2.1 the history of the computer mediated communication was already briefly discussed. The increasing number of computer users and communication through them has probably given the biggest impact to long distance communication. Through email, instant messaging, online audio and video calls and multimedia sharing, maintaining relationships over long distances has been made a lot easier and more gratifying for involved parties.

There have been numerous studies investigating relationship maintenance both online and offline. In this thesis the author will concentrate on long distance relationships (LDR) maintenance through online CMC. The term "long distance relationship" more often than not refers to long distance *romantic* relationships (LDRR) and they can be defined as romantic relationships "where partners expect to continue a close relationship but communication opportunities are restricted because of geographic distance" (Neustaedter, 2011). In the light of that a term called "intimate computing" has been coined to describe the technologies used to maintain long distance relationships and is defined as a "group of technologies that enhance or make possible forms of intimacy between remote people that would normally only be possible if they were proximate" (Bell *et al*, 2003 as cited in Bhandari *et al*, 2008). But in this thesis, the author will refer to all relationships (including with family and friends) as LDR and where possible distinguish LDR from LDRR.

Researchers have created typologies in order to categorize behaviors of relational maintenance. The most well-known and most used typology is developed by Canary and Stafford (1991, as cited in Tong, 2011). After analyzing romantic couples' relational maintenance strategies they came up with five dimensions of relational maintenance behaviors (Tong & Walther, 2011, Houser *et al*, 2012):

1 Positivity – being cheerful, optimistic and uncritical
1. Openness – being direct through self-disclosure and discussion of the relationship and desires for it.
2. Assurances – stressing commitment, love, demonstrating faithfulness, signifying a desire to continue the relationship

3. Sharing tasks – helping equally with tasks facing the couple to meet relational responsibilities
4. Networks – time spent with common friends, acquaintances, relatives

Though the typology was developed with offline relationship maintenance in mind, it has proved to be usable in online context as well (with some adaptations made to it where necessary).

Most of the research in this field has been done with romantic relationships in mind. Carter *et al* (2015) looked into spousal communication during a military deployment of one of the spouses. They discovered that, synchronous communication via instant messaging, phone calls or video calls was more gratifying and allowed for more openness, assurance and positivity (especially the latter) between the spouses. Yet, due to various circumstances, such as difference in time zones, work schedules etc. asynchronous communication like email was praised as well. Even though, the downside of emails is their lack of media richness, they're more likely to produce hyperpersonal communication – emails allow people to think through their thoughts and self-presentation more thoroughly and enclose details unlikely said in face-to-face conversation. In addition to flexibility in reading and responding, emails are valued due to their permanence. They can be reread countless of times, giving reassurance to the reader that gradually fades away in a synchronous correspondence, especially when it can't be saved for future reading.

A study conducted by Dansie (2012) conducted among university students in long distance romantic relationships showed that couples prefer direct communication, meaning that (micro)blog or social network status updates where least satisfactory, sometimes even causing jealousy and mistrust, when people saw their partners enjoying their life without the significant other. Dansie also concluded that relying purely on technology is a test to see whether the relationship will survive. While in other researches, technology is seen as a tool to provide positive experiences and closeness while being apart, in Dansie's study she shows that the effect can also be negative. Hyperpersonal communication can reveal mistrust, jealousy and anxiety in the relationship and it's up to the partners, how they deal with it. She suggests partners to communicate expectations to prevent negative emotions and maintain a gratifying relationship even from a distance. Yet, in case of "heated relational discussions", CMC may provide a needed physical separation and a chance to calm down to continue a conversation without emotional utterances that can be regretted later and instead communicate more effectively (on a hyperpersonal level) (Tong & Walther, 2011).

A study by Houser *et al* (2012) investigated relational maintenance behaviors via multiple modes of CMC to explore whether there is a difference between strategies men and women use to maintain relationships, using an adaptation of previously mentioned Canary and Stafford's relational maintenance typology. The findings included that women tend to use more relationship maintenance strategies than men do, no matter who they're communicating with. In addition, the study showed that different mediums are used with different relationships. For example, with relatives people tend to use email more than with friends and significant others. For communication with friends, social network proved to be the preferred tool. Similarly to earlier research, Houser's study also supported the notion that people have no problem with enclosing private/personal information about their emotions etc. in correspondences with people close to them (openness, assurance, positivity).

A study conducted by Tong & Walther (2011) which focused on grandparents-grandchildren long distance CMC found that even generally not so technologically knowledgeable older generation uses CMC to stay in touch with their younger relatives. In half of the cases, both parties initiated the correspondences, but if this was not the case, then grandparents were more likely to initiate the conversation than the grandchildren were. Another study found that communication frequency was higher when at least one of the parties experienced higher levels of stress (e.g. stress in college students at the end of the semester) (Tong, 2011). As for the topics of discussion, family members engaged in both serious (e.g. asking for advice, confessions) and day-to-day (e.g. news from home/school, events) subject matters.

1.7. Trust

Trust can be defined in a number of ways and depends on the angle that one looks at trust. Trust has been researched from psychological, sociological, educational, economical, anthropological, historical and other angles, as well as from a computer sciences angle and defined accordingly (Sousa *et al*, 2007). In the latter's context, Fogg *et al* (1999) have defined trust as “a positive belief about the perceived reliability of, dependability of, and confidence in a person, object, or process”. To expand the definition even more, Gambetta (2000) adds that, the assessment that the trustor (“the person, organization, tool or object who or which is trusted” (Sousa *et al*, 2007)), will do as

predicted is done before the action and in context will affect the trustee's ("[the] one who trusts another person, organization, tool, or process" (Sousa *et al*, 2007)) own actions.

In addition, trust can be defined by its focus, which is what research carried out by Mühlfelder *et al* (1999) has done. For instance, according to their research, the first focus is on the e personal source of trust. Trust, in that view, depends on earlier experiences (as far back as one's childhood) and "is based on the expectation of a person or a group to be able to rely on the oral or written promise of another person or group" (Rotter, 1967, 1971 as cited in Mühlfelder *et al*, 1999). The second category focuses on effects of trust – where the complexity of human behavior is minimized, a person can feel safe and rely on the other person's information even without factual backup. Last but not least, definitions of trust may focus on behavioral aspects. Definitions in that category may be summed up as trust is a big risk or in more words: trust increases one's vulnerability; trust's usefulness may not be as great as the possible damage; self-disclosure may cause disparagement and rejection. If one decides to take the risk and trust someone/ something, they are enabling higher gains and in the opposite case of distrusting the person avoids potential loss (Sousa *et al*, 2014). The risk tends to be even higher in a computer mediated interaction that in real life interaction. But despite all the negative, if trust is put into the right person, object or process, the risk pays off – creating a positive experience.

It's generally easier to develop trust between people in real life settings, face-to-face so to say, where people can see and "touch" each other, rather than online, where there are less (non-verbal) cues to take into consideration when developing trust (Zheng *et al*, 2002). Yet, Zheng *et al* show, that there are ways to develop trust[3] through computer-mediated communication even without that initial face-to-face interaction. They suggest that before any activities requiring trust, people should engage in social activities to build trust. Getting acquainted through text chat or even sharing a photo of oneself proved to be nearly as beneficial as meeting in real life.

Trust is not something that is created once and then lasts forever. Trust needs maintenance, as it is dynamic and changes through time. It may grow slowly stronger and stronger, yet some actions may weaken or even break the trust. Broken trust isn't an isolated event, it affects the whole

[3] Zheng *et al* did their study in a scenario where people, who had never met before, had to work together and tested trust creation in a face-to-face environment vs computer-mediated environment.

relationship negatively and sometimes even irreversibly (Sousa, 2007). There is plenty of evidence proving that people are more likely to deceive someone's trust in an online setting than they are in face to face interactions (Caspi & Gorsky, 2006; Castelfranchi & Tan; Lu, 2008). But it has also been proven, that the possibility of online deceit can be lowered when the individuals initially meet in real life (Castelfranchi & Tan, 2001; Rocco & Warglien, 1996).

1.7.1. Socio-technical model of trust

The socio-technical model of trust, used as a basis for this thesis' study (Chapter 3), was developed by Sousa *et al* (2014, 2014b). Based on Davis's and Venkatesh's Technology Acceptance Models (as cited, in Sousa *et al*, 2016), as well as, on an extensive literature research on trust as a social phenomenon and participatory design procedure, the human-computer trust model helps to determine how well a person can relate to their social and technical environment (Sousa *et al*, 2014).

The socio-technical model of trust is visualized in Figure 2. The qualities of trust can be considered as building blocks to create trust. Motivation and willingness support user's emotional beliefs or in other words, how can a user be sure that a system's features will be beneficial for them? Competency and predictability support rational beliefs that can be answered by asking, which features of a system make the user more confident in someone or something, make them know that the other will act as expected? Finally, reciprocity, benevolence and honesty support emotional beliefs that answer to a question, which features make the user believe in the system's and it's users' integrity (Sousa *et al*, 2014b). The qualities of trust listed below, help to determine several things. First, motivation and willingness help to determine user's intentions of trust, Secondly, competency and predictability help to determine user's incentives of acceptance and use of technology. And thirdly, benevolence, reciprocity and honesty help to determine user's support of engaging in activities. If all these trust predispositions are positively met, they lay a foundation for trust creation. Based on these beliefs, either a positive or negative trust predisposition is created that leads to some level of engagement.

Qualities of trust, as defined by Sousa *et al* (2016):

- *Motivation* – "the degree to which an individual believes (even under conditions of vulnerability and dependence) h/she has the ability to perform specific beneficial actions when using a computer."
- *Willingness* – "positive or negative feelings about performing a given action while considering the risk and incentives."
- *Competency* – "the degree of ease of use when associated with the use of the system."
- *Predictability* – "a user's confidence that the system will help him to perform a desired action in accordance with what is expected."
- *Benevolence* – "a user's perception that most people share similar social behaviors and sharing values."
- *Reciprocity* – "the degree to which an individual sees oneself as a part of a group."
- *Honesty* – "an insurance quality when facing apprehension, or even fear with the possibility of being deceived."

In the following chapter, Chapter 3, the model will be discussed and analyzed further alongside the survey questions and answers.

2. The study

This chapter will focus on the practical part of the thesis. Starting with the description of the methodology, continuing with the results, which can be divided into simpler descriptive results and a bit more complex results that in addition to answering this survey's questions can also set a footing for future research. The chapter will end with a discussion on the results and their implications.

2.1. Methodology

The study conducted for the purpose of this thesis consists of a one-time cross sectional questionnaire. Altogether there were 18 questions in the study, but as seven of them consisted of a number of statements that the respondent had to rate on a Likert scale, makes the altogether number of items they needed to answer 60. The platform used to create the survey is called LimeSurvey, which is a free and open source online survey application.

The survey was distributed solely online. The respondents of the questionnaire were approached both individually and by posting a request to several online groups where the possibility of people using Skype for long distance communication were highest. Mainly groups consisting of Estonians, who lived in or had connections to a certain foreign country, such as Norway, the Netherlands or Portugal. The call for action specified that only people, who use computer-mediated communication tools, especially Skype, for long distance relationship maintenance should participate. For the purpose of this thesis the survey was developed in English, but as the respondents' first language is Estonian and their levels of English vary, the survey was also translated into Estonian.

For data analysis several tools were used. Firstly, LimeSurvey provided its own basic set of automatically compiled statistics. Secondly some descriptive statistics and all graphs and tables were made using Microsoft Excel, by using either data imported or results already compiled in LimeSurvey. Other calculations to establish relations between different variables such as Crosstabs was done using IBM SPSS.

2.1.1. Personas

While researching for the theoretical part of the thesis and during the design of the survey, certain types of people started to emerge more frequently in the research. Thus, in creating the study and deciding on the target group certain personas were developed.

Persona 1 – Exchange student

Gender: Female

Age: 22

Occupation: Bachelor student

Background: A 22 year old Bachelor student, who goes for an exchange semester to Germany with the Erasmus program that lasts for 5 months. During her stay abroad she often wishes to stay in touch with her family and friends. For that purpose she has semi-scheduled Skype video-calls with her parents every week using her laptop. With her friends she has daily conversations using Skype's instant messaging feature on her smart phone. If there's a lot to say, they use the audio call feature. Using Skype helps to keep her family and friends up to date of her doings in return, they keep her updated about any happenings back home. Though, it occasionally makes her homesick, she is glad to have a mean to maintain her relationships even when his far away.

Persona 2 – A father working abroad

Gender: Male

Age: 36

Occupation: Builder

Background: Due to different circumstances the father has to work away from home, in a different country. Usually, he stays away from home working in Norway building houses for 1,5 months and then can spend 2 weeks at home. At home, he has a wife and two kids. During his time working abroad he uses Skype to communicate with his family. They have Skype video calls three times a week in the evenings. Then the children can see and talk to their father and tell him what they've been up to at school. The wife and him also call or send SMS' every now and then to discuss daily matters, such as finances or task scheduling. Without Skype, the father might not be able to see and get involved in the life of his children while he is working nor discuss important matters with his wife.

Persona 3 – Adventurer

Gender: Female

Age: 28

Occupation: Bookkeeper

Background: She is a traveler at heart and has been on many journeys around the world. This means that she has met a countless number of interesting people and has become great friends with many of them. To maintain her friendships and to plan new trips together they use Skype. Mostly she chats with them individually over a video call or instant messages in group conversations, where they share links to useful sites that help to organize their travels. Without Skype she wouldn't probably be able to have so many international friends, but Skype is a simple and well-known tool that people all around the world use. And, on the other hand, during her travels she can keep her family and friends back home up to date with news from the places she visits.

2.1.2. Scenarios

Similarly to personas, certain scenarios started to emerge from the theory. A few general ones connected to the personas are listed below.

Scenario 1

The exchange student has just returned from an eventful weekend trip with other exchange students and can't wait to tell all about it to her friends. As she has classes all day and her friends are probably not at home either, they send messages from their smart phones to each other on Skype their breaks. However, since typing is slow and there is so much to tell, they decide to make a Skype-to-Skype call instead. That way they can communicate a lot more than just by texting.

Scenario 2

The father is working in Norway this month and misses his family. At the end of the day, before the children's bedtime he and his wife start a video call on Skype, where his children can join in and tell their father how much they miss him and what they did that day. After he has watched his wife put the children to bed (the wife brings the laptop to the children's bedroom) they talk some more, he reminds her of the bills that have to be paid and lets her know the time of his flight next Friday.

Scenario 3

The adventurer is starting to think of her next trip. She has never been to Japan and wishes to go there. On her last trip she met some people from Japan and Sweden and they've become great friends keeping in touch through Skype and other social media platforms. During one of their chats on Skype one of them has an idea that the Swede and she should go and visit the third friend in Japan. That's when they start planning the trip together on Skype. They send links through chat of possible attractions and cheap flight companies, whenever they find one and discuss various other points on group video chats when all of them have time for one.

2.2. Results and discussion

The research started out as an investigation in long distance relationship maintenance via computer mediated communication. As technology is an indispensable link for that kind of communication, the focus naturally gravitated towards that. Furthermore, as mentioned in the introduction of the thesis, trust is an important part of a healthy relationship and trust in the tools people interact with in order to be in contact with other people also becomes necessary. Thus, the study focused on evaluating trust towards communication tools. Or in other words, the aim of this study was to understand the role of trust in online social networking tools and the tool chosen for this particular study was Skype.

To be more specific, the questions to be answered included in the practical part were:

- How people use long distance communication tool, Skype?
- How people evaluate either their or Skype's
    - motivation
    - willingness
    - competency
    - reciprocity
    - predictability
    - benevolence
    - honesty
    - trust

- What are the connections between these attributes and user satisfaction?

The questionnaire started with a few background questions, such as gender, age and occupation. The second half of the descriptive question group was about the users' Internet use habits, in particular about long distance communication and about their Skype usage. The other half of the questionnaire concentrated on questions based on the socio-technical model of trust. There were 6 groups of statements that the respondent had to rate on a Likert scale according to agreeableness. The survey ended with questions about Skype's efficiency and users' satisfaction with Skype.

The survey was answered by 105 people. The respondents were given a chance to choose the language they filled in the survey with. 92% (97 people out of 105) submitting their responses in Estonian, though there is a chance that they started to fill it out in English, but later opted for the Estonian one due to the English version requiring a higher level of English. Out of the 105 people 85 (81%) were female and only 20 (19%) were male. Three quarters of the respondents were either between 18-27 years of age (42, 40%) or between 28-37 years of age (36, 34,3%). 11 people (10,5%) were between 38-47, 10 people (9,5%) were between 48-57, 4 people (3,8%) were either 17 or younger and just 2 people (1,9%) were 58 or older (Figure 2).

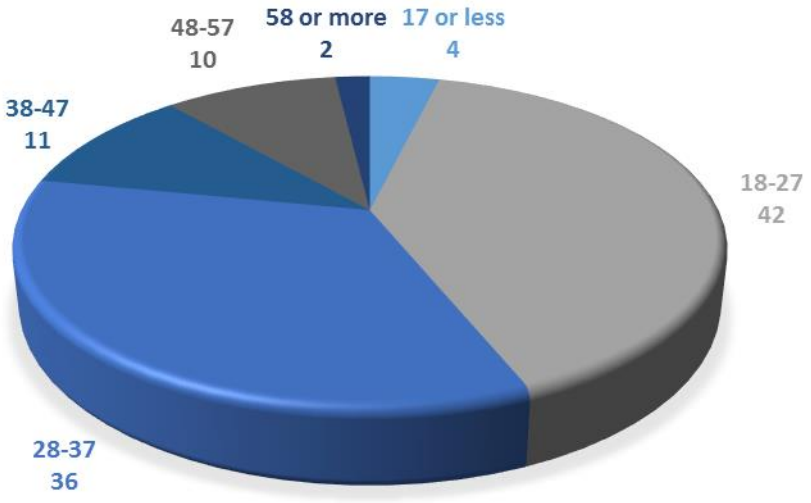

Figure 2 Age

For their main occupation, people could choose more than one answer, e.g. a person may work part-time and study at the same time. 58 people marked that they worked full-time, 15 were

employed part-time and 31 were students (Figure 3). There were also 19 people, who didn't fit in any of the three categories. Most of them (15) didn't work, as they were either homemakers/on maternity leave, on sick leave, unemployed or only had a seasonal/temporary job. The rest identified themselves as freelancers or entrepreneurs.

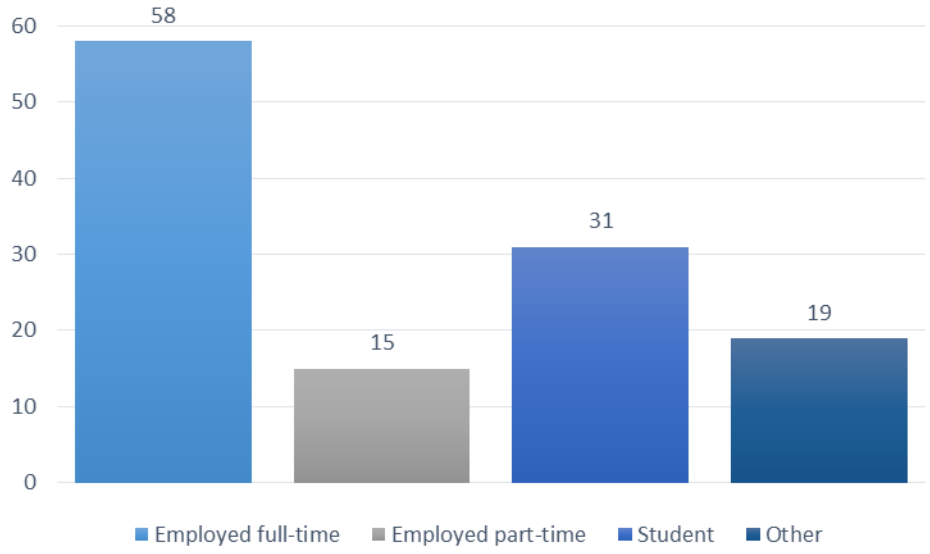

Figure 3 Occupation

The next questions in the descriptive part were about the participants Internet use and more specifically about Skype using habits. When asked how often they used the Internet to interact with other people online, a huge majority, 91 people (86,7%) responded that they used Internet for that purpose every day. 4 people (3,8%) communicated with others online approximately three times a week, 7 people (6,7%) did it once a week, 1 person (0,95%) once a month and there were 2 people who communicated with other people through online mediums less than once a month. These results show, how much technology has changed the way people communicate. From one angle, people are not limited by distance or time any more, but on the other hand people need to make sure that they don't cancel out real life communication either (if possible).

Next, the respondents were asked about their online activities and how important they were to them. On a Likert scale, they had to choose whether an activity for them was very important (5), important (4), neither important nor unimportant (3), unimportant (2) or very unimportant (1). A weighed average of each activity was calculated and the results can be seen in Figure 4. The four most important activities, which scored an average between 4 and 5, meaning that the activity was

mostly important or very important, were reading and sending e-mails (4,5), chatting and socializing (4,39), interacting with various organizations (4,13) and sharing files (documents, pictures, videos, etc.) (4,10). Importance of sharing and exchanging information (3,98), organizing or initiating events (3,84), learning, sharing ideas in a formal education context (3,75) and entertainment stayed between a neutral or just important. By far the least important activity, scoring only 2,98 on an average was publishing short messages, comments or opinions online. It was expected that publishing would score higher among the younger generation and comparing two age groups, people 27 or younger and people 28 and older, proved exactly that, though the difference was less remarkable than expected (younger generation's mean was 3,13 and older generation's 2.93). Looking at the results, we can see that most important activities are connected to other people. Email, chat and file sharing all are related to communication, which means that technology is used to bring people together. Of course, these results show what people mostly in their 20s and 30s think. In the future, with more balanced age and gender groups, it would be interesting to compare the importance of these activities further.

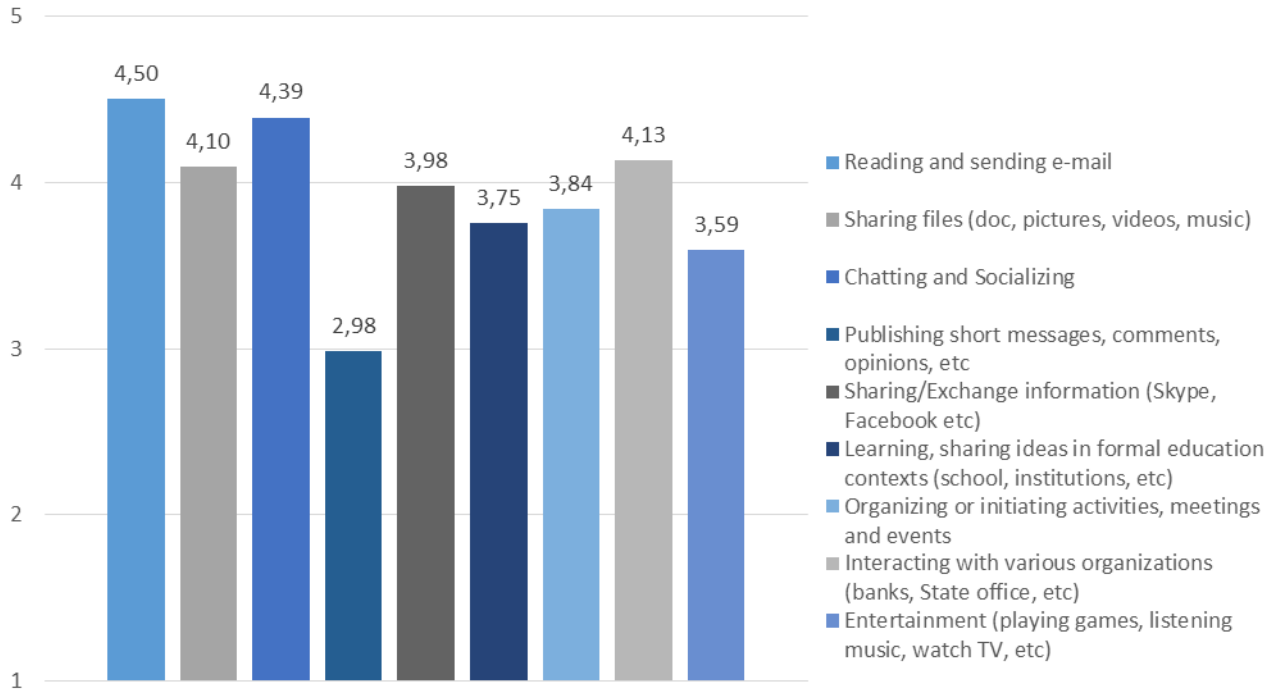

Figure 4 How important to you are the following activities when using Internet to communicate with others?

In the next question, a number of popular communication tools that people are known to use were listed and people were asked to pick the ones that they use for long distance communication. Results were as expected. Facebook and Skype were by far the most used tools for long distance communications with 104 (99%) and 100 (95%) active users out of 105, respectively. Following them were WhatsApp with 37 and Viber with 30 users. 10 people used Google Hangouts and Telegram and Line had both a user each. Out of the offered option Tango and WeChat had no Estonian users. Also, not on the list, but tools that couple of people mentioned using, were Apple's FaceTime and Snapchat. Though, the popularity of using Skype can't be translated to the general population, because Skype users were specially targeted for this study, it can, to an extent, be compared to the popularity of other tools. Proving that Skype is a preferable tool for long distance communication.

Gradually moving more and more towards the use of Skype, participants were asked how often they used Skype. Most people used Skype either every day (31, 29,5%) or once a week (29, 27,6%). Approximately half as many people used Skype once month (15 14,3%) or every other day (12,4%). 9 people (8,6%) used Skype less than once a month. And then there were 8 people who chose the 'other' option (Figure 5). They explained (and it's fair to say, that their responses are applicable for many others as well), that during some periods, they use it regularly and then other times they don't use it at all. For example, one person said that he is working away from home for 6 months a year and during that time he uses it regularly, but rest of the time not at all.

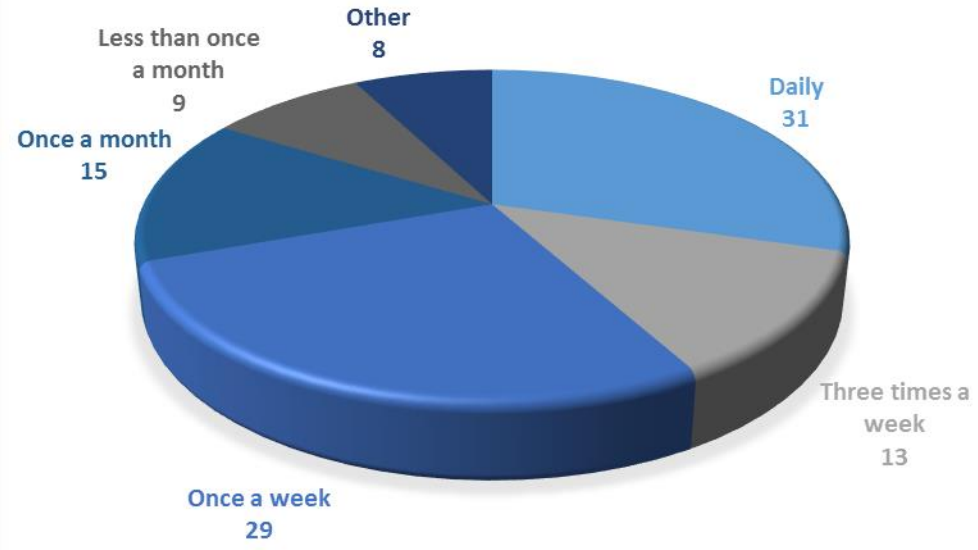

Figure 5 How often do you use Skype?

As Skype is available on multiple platforms, a question rose – do people keep their Skype use on a single platform or do they use multiple devices? It turns out that 4/5 of the respondents (83 people, 79%) use Skype on at least two devices (e.g. laptop and smart phone) (Figure 6). The examples in the previous sentence are actually the most used devices, with laptop being used by 92 people (88%) and smart phones by 73 people (70%). Somewhat surprisingly Skype is being used more on tablet computers (52, 50%) than on desktop computers (40, 38%). Then again, this can be explained by the fact that the target group includes a lot of people who only temporarily live away from home and thus, for them, owning more mobile devices is preferable. Only 3 out of 105 people had used Skype on a TV, which was expected, as Skype on a TV requires more specific equipment (Skype enabled television and a web camera that can be used with a TV) and it doesn't seem to be widely known (yet).

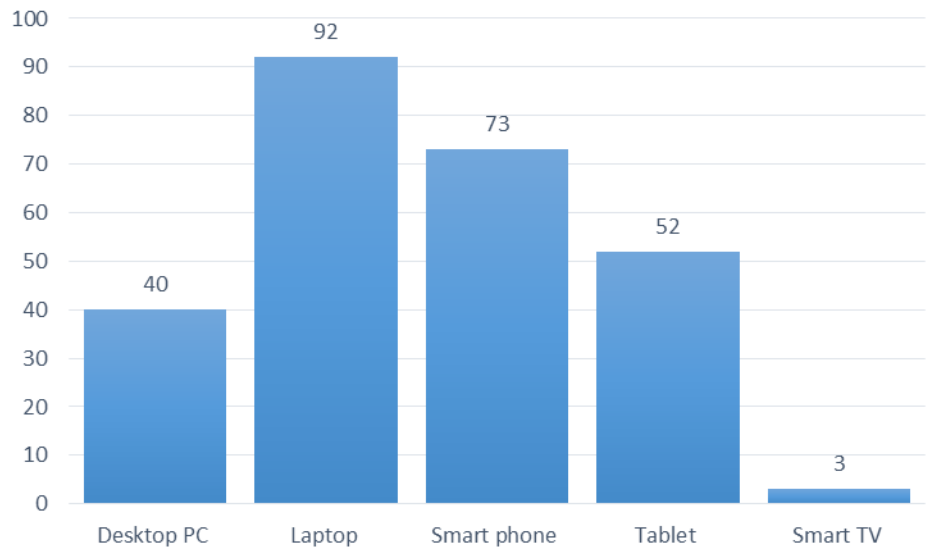

Figure 6 Which devices have you used Skype on?

In the last question of the group, the respondents were asked, which Skype features they use most. Unsurprisingly, most people (87, 83%), use Skype for video calls. 50 people (48%) used the audio call feature on Skype and 41 people (39%) used instant messaging (Figure 7). As predicted, Skype to phone features were less popular. Only 12 people (11%) used Skype's option to call from the application to a regular phone and only 5 had sent short text messages (SMS) from Skype to a mobile phone. Thus again, supporting the theory in Chapter 2, that people prefer to use convenient

(cheaper) methods for communication, which offer more opportunities and are higher in media richness.

The survey's results confirm that people do use technology for communication constantly, with 9 out of ten people using online communication tools every day and third of the respondents use Skype daily, on multiple devices and several of its features. Comparing the results to what was learned in the theory, it can be said that these results align with the other researchers' results.

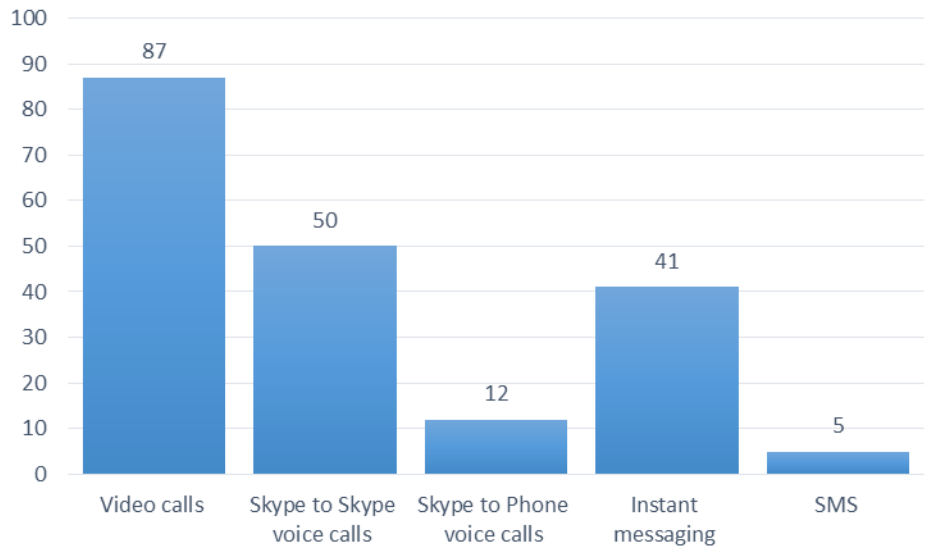

Figure 7 Which Skype features do you use the most?

To conclude the questionnaire, the respondents were asked how effective, in their opinion, Skype is as a social networking tool and the results were very positive. More than 90% of people rated Skype to be either an effective tool (57, 54,3%) or even a highly effective tool (39, 37,1%) (Figure 8). And when asked how satisfied they themselves were with using Skype to communicate, again, 90% of people said that they were either satisfied (65, 61,9%) or very satisfied (30, 28,6%) when using Skype to communicate (Figure 9). Furthermore, looking for associations between efficiency and satisfaction wasn't difficult. Crosstab analysis on SPSS showed that a quarter of respondents (26 people, 24,8%), who thought that Skype is highly efficient were also very satisfied with the tool. Efficiency and satisfaction will be discussed further later in connection to the next group of questions. A larger percentage (46,7%, 49 people), who didn't go to the extreme valued Skype to be equally satisfying and efficient tool.

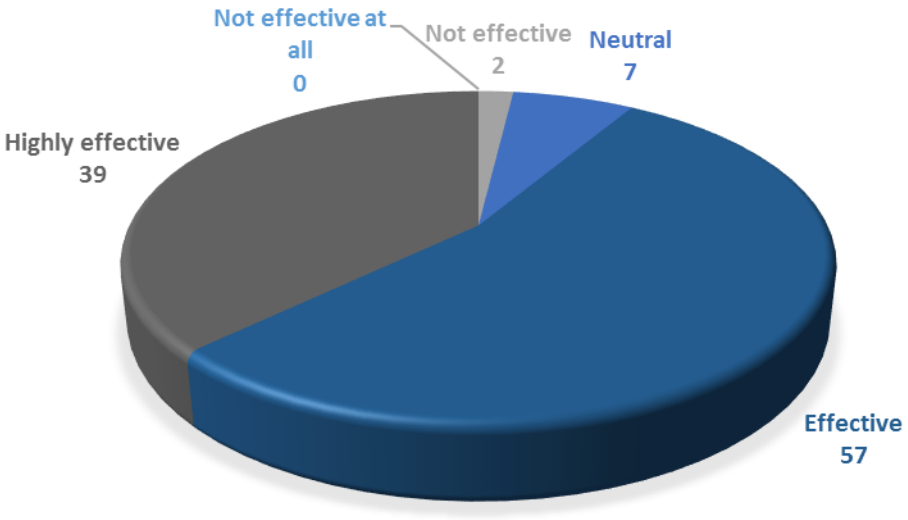

Figure 8 How would you rate the effectiveness of Skype as an online social networking tool?

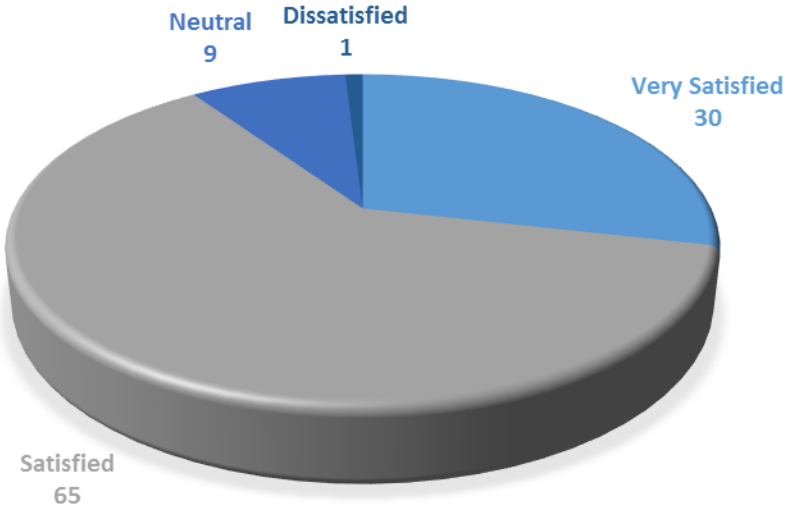

Figure 9 How do you rate your overall satisfaction in using Skype?

The second group of questions was developed on the basis of the socio-technical model of trust discussed at the end of Chapter 2. For each trust quality – motivation, willingness, competency, reciprocity, predictability, honesty and benevolence – from the model, a list of statements were created. In order to measure the qualities of trust, a 5-point Likert scale was chosen, where 1 equaled to Strongly Disagree and 5 to Strongly Agree. To be sure of the reliability of the data, the

first test done on responses of the following questions was the Cronbach's alpha test on SPSS. Cronbach's alpha test is used to prove Likert scale's consistency and the results were positive. The overall result for all the items was .924 (Table 1), with Competency receiving the lowest result (.809) and Willingness receiving the highest (.922). This indicates a high internal consistency. Generally a coefficient .70 is already considered acceptable.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,924	,928	40

Table 1 Results of Cronbach's alpha test on all the Likert scale items.

2.2.1. Motivation

As defined already in Chapter 2, motivation represents the degree to which an individual believes in themselves to carry out certain technologically oriented tasks. The measure for motivation in the current setting is the user's inner capability to carry out technically oriented tasks. Also, write that motivation was measured using self-efficacy based on social cognitive theory proposed by Albert Bandura. The part in common with each statement was as follows: "I could successfully carry out all tasks with Skype," and the 10 criteria points the respondents had to rate were:

- If there was no one around to tell me what to do as I go
- Even if it is my first time using Skype
- If I had only the instructions for reference
- If I had seen someone else using it before trying it myself
- If I could call someone for help when facing problems
- If someone else had helped me get started
- If I had a lot of time to complete the task on Skype
- If I had just the built-in "help" facility for assistance
- If someone showed me how to use it first
- If I had used programs similar to Skype to perform a similar task

The results (Figure 10) reveal that people tend to believe that they are rather capable of successfully completing tasks in various circumstances. As predicted, the younger generation is more confident in their capabilities than the older generation. For example 78% (36 people) of the younger generation strongly agree that they would be successful in completing a task if they had no one to help them. In contrast only 50% (30 people) of the older generation thought so. With an average score of 3.89 out of 5 (Strongly Agree), people have the least belief in the built-in "help" facility that many applications including Skype have. Yet, if they had instructions for reference the confidence is much higher (4.30), which raises a question. Do people perceive the built-in "help" facility more difficult than it is? In essence, instructions and "help" should be the same thing. In addition, with an average score of 3,9, the availability of time doesn't seem to make a big enough difference to task completion.

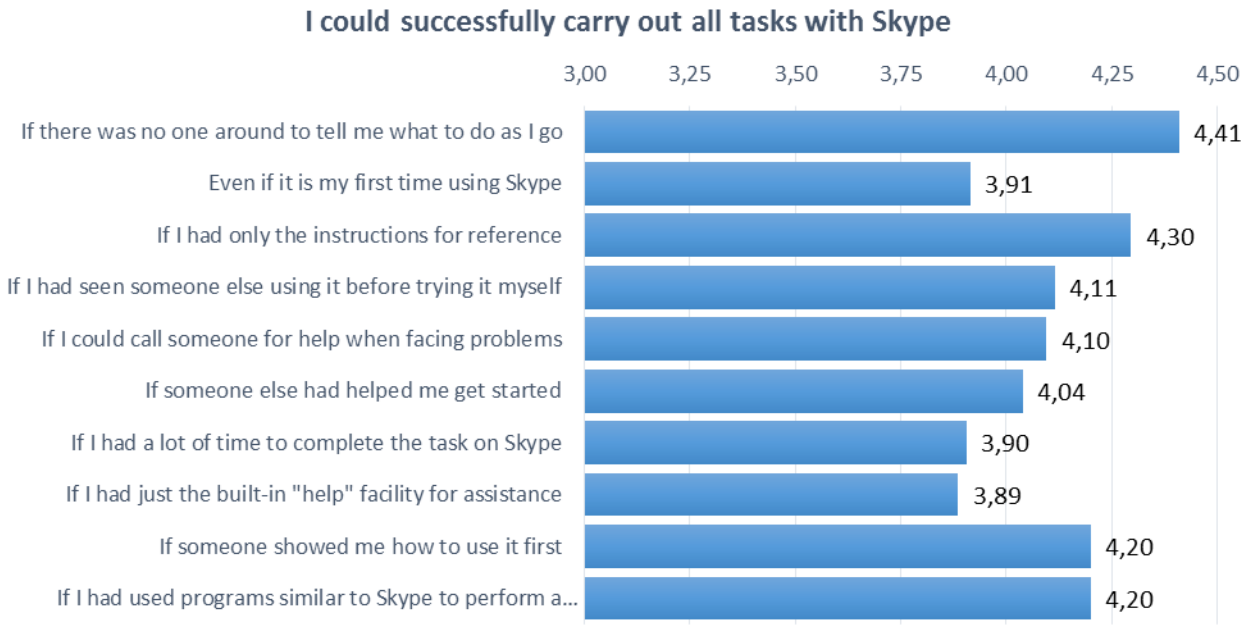

Figure 10 Motivation

Furthermore, the connection between satisfaction and motivation was looked into. The results (see Table 2) show that people who can successfully complete tasks even without the help of anyone else are also more satisfied with the tool. With 21 people (20%), who strongly agreed were very satisfied with Skype and 39 (37%) rated the tool as satisfying. Similar patterns could be seen with rest of the motivation statements as well. But there were some people at the opposite end of the spectrum as well. For example, people (6, 5,7%), who thought that they couldn't complete a task

successfully, even if they had someone to help them get started, were still very satisfied with Skype. This shows that, though, some people might find Skype difficult to use, but they still believe that Skype is a great application. So, to answer one of the research questions, it can be said that there is a connection between users' motivation and how satisfied they are with the tool.

Crosstab

Count

		Satisfaction				Total
		1	2	3	4	
I could successfully carry out all tasks with Skype, if there was no one around to tell me what to do as I go	1	0	1	1	0	2
	2	1	2	0	0	3
	3	2	8	1	0	11
	4	6	15	1	1	23
	5	21	39	6	0	66
Total		30	65	9	1	105

Table 2 Connection between motivation and satisfaction

2.2.2. Willingness

The next quality of trust, willingness, reflects the positive/negative feelings or pros/cons about performing a given action while considering the risk and incentives. There are two ways to evaluate pros and cons prior to performing an action, firstly, by evaluating performance expectations, which are related to the task that a person is about to perform and, secondly, by user's personal expectations i.e. individual goals.

In this study the statements helping to evaluating performance were: "If I use Skype,":

- It will help me be more organized with my conversations
- It will increase my effectiveness on the job
- I will spend less time on routine job tasks such as calling people on phones
- It will increase the quality of output of my job
- I will increase the quantity of output for the same amount of effort
- I will be less reliant on clerical support staff

And personal measures were: "If I use Skype,":

- My co-workers will perceive me as competent
- I will increase my sense of accomplishment
- I will increase my chances of obtaining a promotion
- I will be seen as higher in status by my peers
- I will increase my chances of getting a raise

The only statement that the respondents more or less agreed with in the willingness category, was the fact that Skype helps them to be more organized with their conversations. The tendency was more disagreeable with the rest of the statements, especially with the few latter, personal measures. For example, people don't agree that using Skype will increase their chances of obtaining a promotion (1,91) or getting a raise (1,82), nor do they think that they will be seen as higher in status (1,97) if they use Skype (Figure 11). The difference of opinions between the two age groups was less prominent than with motivation, but still as expected younger people, on average, would agree with the statements more than a person in the older age category would.

Figure 11 Willingness

Taking the most agreeable item from the willingness group, Skype helping to keep people's conversations organized, it can be further confirmed that this is also connected to people's satisfaction with Skype in general. 39 (37%) people who were satisfied with Skype either agreed

(17, 16%) or strongly agreed (22, 21%) with the statement. Plus 15 (14%) people, who rated the item “strongly agree” also chose “very satisfied” in the Skype satisfaction question (Table 3).

Crosstab

Count

		Satisfaction				Total
		1	2	3	4	
If I use Skype, it will help me be more organized with my conversations	1	2	5	2	0	9
	2	3	8	1	1	13
	3	7	13	1	0	21
	4	3	17	3	0	23
	5	15	22	2	0	39
Total		30	65	9	1	105

Table 3 Connection between willingness and satisfaction

Looking at the less agreeable statements in the willingness attribute, it revealed that even though people (strongly) disagree with assumptions that using Skype would increase their status or chances of getting a raise or a promotion, they still are satisfied with the tool. This means that Skype isn't used to show oneself in a better light or to obtain something.

2.2.3. Competency

In the current setting, what is meant by competency is the ease of use of a certain tool, like Skype. The tool is competent, if it performs various tasks correctly and accurately, based on the input information. It is measured by assessing different aspects of a tool such as effectiveness, its role in doing what it does and its capability.

The statements to evaluate were as follows. “I believe Skype is competent, because it”:

- Is effective in providing high level of audio and video connectivity
- Performs its role of facilitating online social networking and long distance communication very well
- Is a capable online social networking provider

- Has all the functionalities I would expect from a long distance communication tool

Just by looking at the graph (Figure 12), it can already be concluded that the participants of this study consider Skype to be a competent tool. Respondents especially agree that Skype is competent in facilitating long distance communications very well (4,5). To this statement they answered most unanimously, with a standard deviation of .722. It's also nice to see that people agree that Skype satisfies their needs when it comes to necessary functionalities of a long distance communication tool (4,4). Slightly lower score for effectiveness of audio and video connectivity (4,03) might be explained by the fact that some people may put the blame for Internet connectivity problems and/or lack in their device's computing power that also affect the quality of audio and video, on Skype. No remarkable differences were spotted between the two age groups, with the older group giving only slightly higher ratings than the younger one.

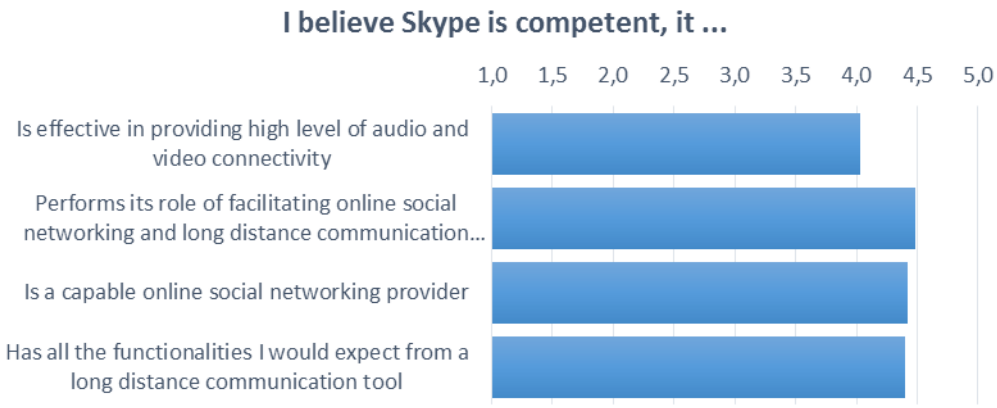

Figure 12 Competency

It was expected that people who think that Skype as a tool is competent, should also believe that Skype is efficient. That is exactly the case. For example, with the second statement in the competency group ("Performs its role of facilitating online social networking and long distance communication very well") there is clear association with efficiency. 39 people who agreed or strongly agreed to the statement also thought that Skype was highly effective and 50 people who agreed or strongly agreed thought that Skype is an effective tool for long distance communication (Table 4).

Crosstab

Count

		Effectiveness				Total
		2	3	4	5	
I believe Skype is competent. It performs its role of facilitating online social networking and long distance communication very well.	2	1	1	0	0	2
	3	0	1	7	0	8
	4	1	3	25	3	32
	5	0	2	25	36	63
Total		2	7	57	39	105

Table 4 Connection between competency and effectiveness.

2.2.4. Reciprocity

Reciprocity was defined as "the degree to which an individual sees themselves as part of a group." (Sousa, 2007). In other words, reciprocity refers to a sense of belonging, connectedness and mutual benefit.

In this group, respondents had to express their level of agreeability to the following two statements. "I believe Skype is a helpful tool, because":

- When I share my concerns using Skype with my contacts or the Skype community, I believe that they will respond to my concerns and be empathetic. (Wasko & Faraj, 2000)
- I am confident of receiving help from the Skype community when in need and hence I feel it is my duty to help other members within this community. (Kankanhalli et al.2005)

It seems that reciprocity isn't the strongest among Skype users. The average score for the first statement stayed rather close to neutral (3,09) (Figure 13), but looking at the responses more closely, it turns out that there are responses on both sides, with an equal number of people (12, 11%, SD 1.186) either strongly agreeing or strongly disagreeing to the first statement. If we compared the age groups no significant difference was spotted. The second statement was less agreeable, with an average score of 2,81. It's hard to tell whether people don't agree with the fact

that they could get help or with the fact they would not help others, even if they themselves had received help beforehand. Further investigation is recommended.

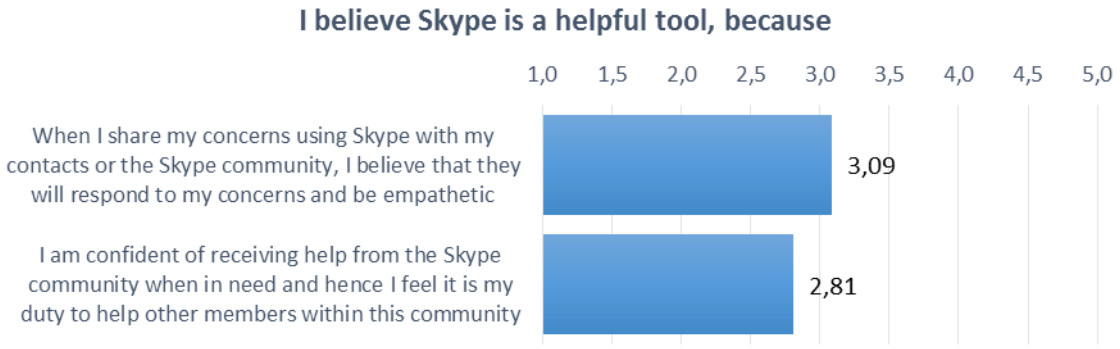

Figure 13 Reciprocity

2.2.5. Benevolence, honesty and predictability

The last qualities of trust from the socio-technical model of trust are benevolence, which reflects the user's perception that a tool, in this case Skype, would act in their best interest; honesty (or integrity), which means that a person can truly believe that the other party makes sincere agreements, tells the truth and fulfills their promises (Bromiley & Cummings, 1995); and predictability, which refers to being able to forecast the systems actions by the consistency of its previous ones. That helps the user to perform desirable actions in accordance with what is expected. The first two statements are exactly related to that – predictability, the following three are concentrated more on evaluating benevolence and the last four on honesty. As the statements in the survey were presented in one group, they will also be analyzed as a group.

- I am quite certain about how Skype works
- I am quite certain what to expect from Skype
- I believe that Skype would act in my best interest
- If I required help, Skype would do its best to help me
- I feel that Skype is interested in my well-being, not just its own
- I feel that Skype is truthful in its dealings with me
- I would characterize Skype as being an honest tool

- I feel Skype would keep its commitments
- I think of Skype as sincere and genuine

The positive results, an average score of 4,13 for the first and 4,17 for the second statement, confirm that Skype is a transparent tool and people believe that they know how Skype will perform. Respondents have a little more neutral view, but still positive, on statements particularly about benevolence, but score is higher again for honesty (Figure 14).

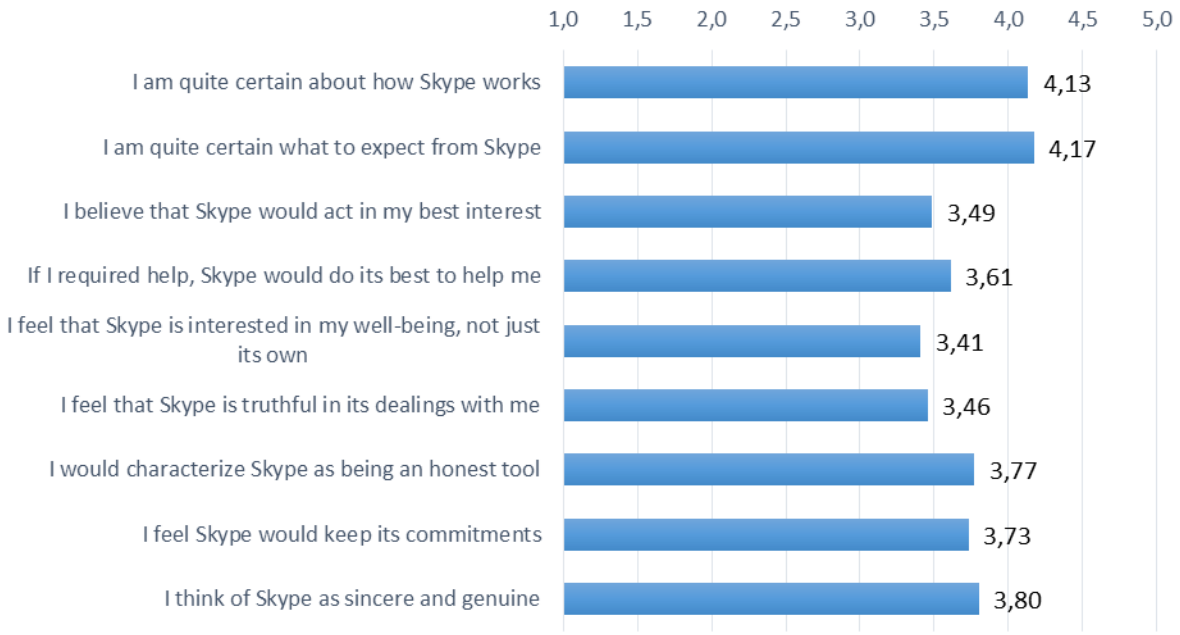

Figure 14 Benevolence, honesty and predictability

From the last question group, benevolence and efficiency were put to the test. It was hoped that there would be a strong connection between hope that in need, Skype would be of help and Skype's efficiency. Analysis showed that 30 people (29%), who (strongly) agreed with the item, also thought that Skype is a highly efficient tool and 26 people (25%) thought it to be efficient (Table 5).

Crosstab

Count

		Effectiveness				Total
		2	3	4	5	
Benevolence4	1	0	0	0	1	1
	2	0	1	8	1	10
	3	2	6	23	7	38
	4	0	0	20	16	36
	5	0	0	6	14	20
Total		2	7	57	39	105

Table 5 Connection between benevolence and effectiveness

2.2.6. Trust

Though using the human-computer trust model, it is possible to predict the predisposition of trust, the respondents were still asked to evaluate their trustfulness themselves, with the following statements (McKnight *et al*, 2002)

- When I communicate using Skype, I feel I can depend on it
- I can always rely on Skype for long distance communications
- Skype is a tool on which I feel I can fully rely on for maintaining long distance relationships
- I feel I can count on Skype when networking online

The results show that when people evaluate the level of trust towards Skype themselves, then the results stay positive, but mediocre. For example, the mean score for the last statement ("I feel I can count on Skype when networking online"), highest in the group, is 4,12 and a SD of .874, showing that though the opinion is not unanimous, people still think to an extent similarly (Figure 15).

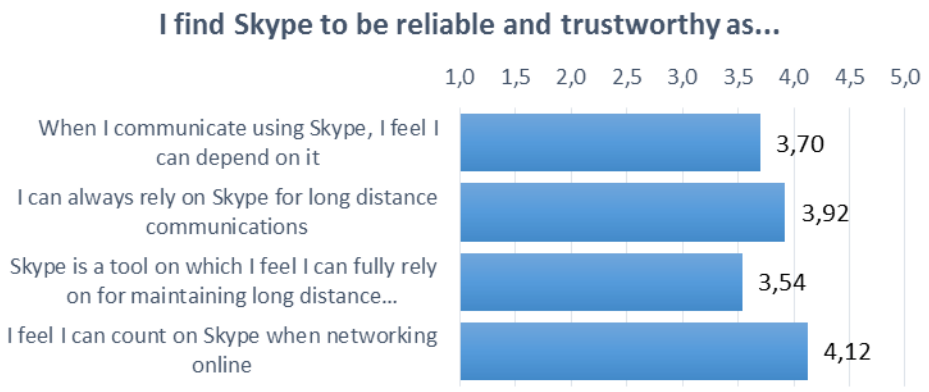

Figure 15 Trust

Trying to find a relation between trust and satisfaction, it was once again proven that people, who trust the system also are satisfied with it. Though the association wasn't as strong as expected. For example, in case of the most relevant item for this study ("I can always rely on Skype for long distance communication"), 43 people (40%), who agreed (28) and strongly agreed (15) to the statement rated the other variable in the test with only "satisfied" (Table 6). Still, 28 people (27%), who agreed with the statement most, did find Skype a very satisfying tool.

Crosstab

Count

		Effectiveness				Total
		2	3	4	5	
I can always rely on Skype for long distance communications	1	1	0	2	0	3
	2	0	4	1	0	5
	3	1	1	17	4	23
	4	0	2	25	13	40
	5	0	0	12	22	34
Total		2	7	57	39	105

Table 6 Connection between trust and effectiveness

These conclusions are further supported by the Technology Acceptance Model by Fred Davis (2008, as cited in Gulati, 2012). The model (see Figure 15) can be used to evaluate user's understanding of a system. It doesn't really matter, whether something is easy to use or not, what matters is that people perceive that something as easy to use. The results of this study prove, why Skype is widely used (why people have accepted Skype). It's because people (i.e. respondents in this study) fin Skype to be useful to them and they perceive Skype as easy to use.

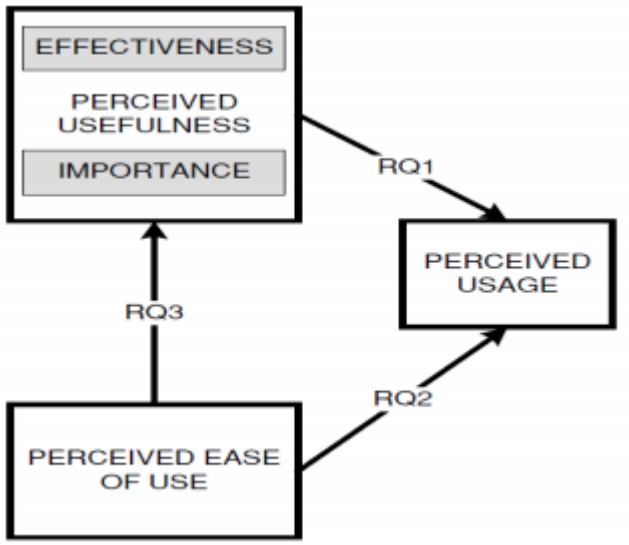

Figure 16 Technology acceptance model (Gulati, 2012)

Of course there were some shortcomings to the study also. Firstly, 105 people is not enough to carry the results over to general population or even just to Skype user base, which consists of at least a few hundred million people ("Most popular global mobile messenger apps", n.d.). Furthermore the gender and age distribution was too uneven to make comparisons between different groups. Gathering more data from different groups, to even them out would allow for further and better analysis.

Though a lot more could be concluded from these results, the initial analysis shows that overall Skype is a well-perceived tool.

Conclusion

This thesis aimed to gain additional insight into long distance computer-mediated communication and maintenance of long distance relationships. The thorough literature review helped to combine an overview of the current state of the phenomenon and support the study. The study's main question was, how people perceive communicating through Skype and furthermore, if a relationship between different trust attributes as proposed in the socio-technical model existed.

The theory implied and the survey results further confirmed that people strongly rely on computer-mediated communication systems, to maintain their relationships. These communication tools are of tremendous help especially to people, who are in long distance relationships and real life communication is limited. Communication through tools they can trust is important to undisturbedly and seamlessly focus on the human-to-human interaction.

Thus a popular computer-mediated communication tool called Skype was chosen to be evaluated from the trust perspective. For the evaluation socio-technical model of trust was used as the basis to create the survey. Skype was perceived by the 105 survey respondents as a competent and a relatively trustworthy tool that people are motivated to use for online communication, which includes long distance communication. In addition, based on the results, connections between the different attributes of trust were found and confirmed, proving that the higher the person's motivation, competency, etc. the more efficient is their interaction with the tool and the more satisfied they are with the tool in general.

Future work

The data gathered during this study has potential to be analysed even further. In addition, the survey, especially the part developed using socio-technical of model of trust has already been adapted to evaluate other tools, such as the Estonian i-Voting service. It would also be interesting to evaluate and compare other social networking tools using this model. In addition, the topic could be developed even further with spin-offs more towards, for example, mobile-mediated communication.

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Appendix 1 – Illustrations

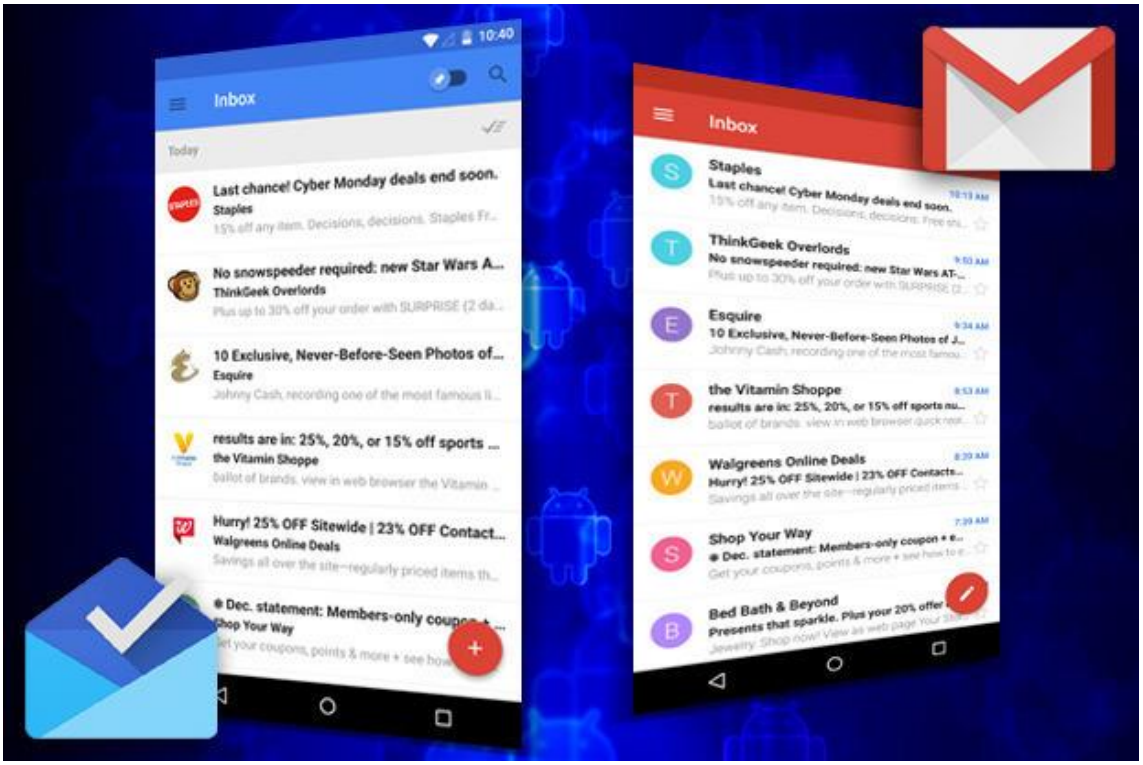

Figure 17 Comparison of the new Inbox interface and Gmail's interface on mobile devices.

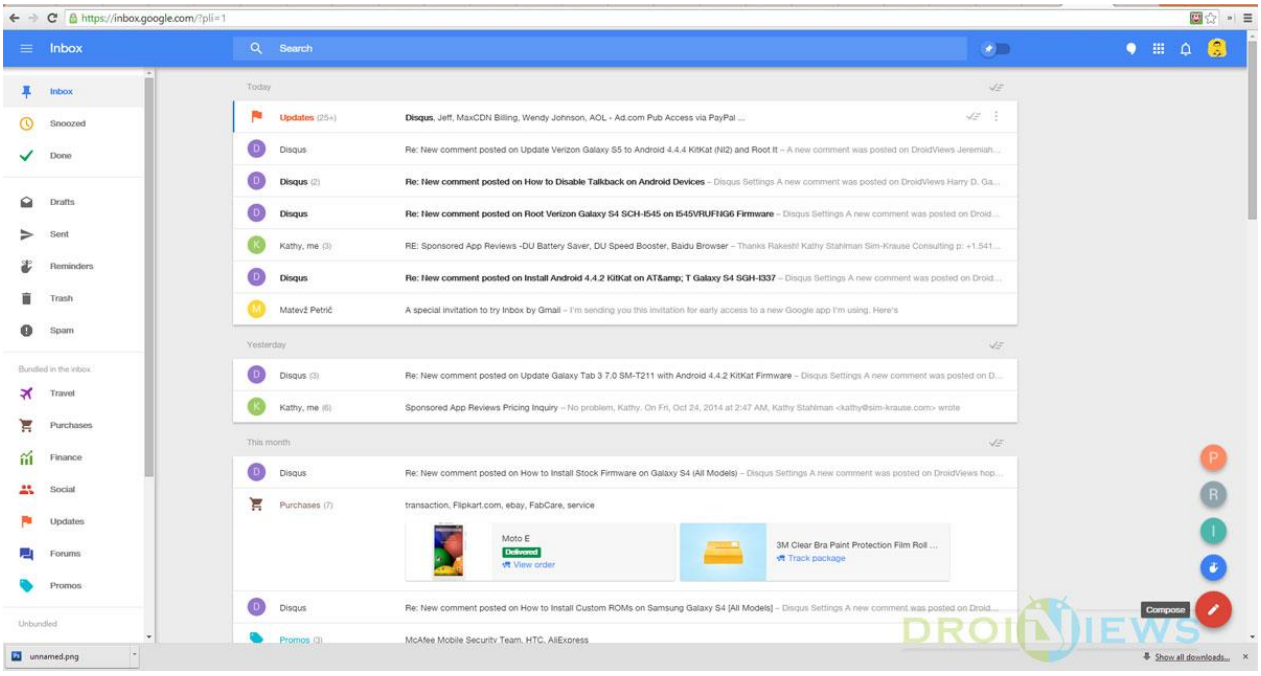

Figure 18 Inbox interface

Appendix 2 – The survey (English)

Trust in Social networks: A study on Skype

Dear Participant, My name is Jane Niinsalu and I am a master student at Tallinn University. As a part of my master thesis, I am conducting a survey which aims to understand the role of trust in online social networks, more specifically Skype.
I am inviting you to participate in this study by completing the following questionnaire. Please answer all these questions based on your personal experience.The questionnaire will require no more than 15 minutes of your time. In case you have any questions, you can contact me via email (janen@tlu.ee)
Thank you very much for your time and help!
Jane Niinsalu
There are 18 questions in this survey

Descriptive
What is your Gender? *
Please choose **only one** of the following:
- ○ Female
- ○ Male

What is your main occupation? *
Please choose **all** that apply:
- ☐ Employed full-time
- ☐ Employed part-time
- ☐ Student
- ☐ Other:

Please indicate your age group. *
Please choose **only one** of the following:
- ○ 17 or less
- ○ 18-27
- ○ 28-37
- ○ 38-47
- ○ 48-57
- ○ 58 or more

How often do you use the Internet to interact with others online? *
Please choose **only one** of the following:
- ○ Daily
- ○ Three times a week
- ○ Once a week
- ○ Once a month
- ○ Less than once a month

How important to you are the following activities when using Internet to communicate with others? *

Please choose the appropriate response for each item:

	Very important	Important	Neutral	Unimportant	Very unimportant
Reading and sending e-mail	○	○	○	○	○
Sharing documents [doc, pictures, videos, music]	○	○	○	○	○
Chatting and Socializing	○	○	○	○	○
Publishing short messages, comments, opinions, etc	○	○	○	○	○
Sharing/Exchange information [Skype, Facebook etc]	○	○	○	○	○
Learning, sharing ideas in formal education contexts [school, institutions, etc]	○	○	○	○	○
Organizing or initiating activities, meetings and events	○	○	○	○	○
Interacting with various organizations [banks, State office, etc]	○	○	○	○	○
Entertainment [playing games, listening music, watch TV, etc]	○	○	○	○	○

Which of the following tools do you use for long distance communication?*

Please choose **all** that apply:

- ☐ Facebook
- ☐ Viber
- ☐ Whatsapp
- ☐ Google Hangouts
- ☐ Telegram
- ☐ WeChat
- ☐ Line
- ☐ Tango
- ☐ Skype
- ☐ Other:

How often do you use Skype? *

Please choose **only one** of the following:

- ○ Daily
- ○ Three times a week
- ○ Once a week
- ○ Once a month
- ○ Less than once a month

○ Other

Which devices have you used Skype with? *
Please choose **all** that apply:
- ☐ Desktop PC
- ☐ Laptop
- ☐ Smart phone
- ☐ Tablet
- ☐ Smart TV
- ☐ Other:

Which Skype features do you use the most? *
Please choose **all** that apply:
- ☐ Video calls
- ☐ Skype to Skype voice calls
- ☐ Skype to Phone voice calls
- ☐ Instant messaging
- ☐ SMS
- ☐ Other:

Motivation behind learning and use Skype
These questions test your motivation behind learning and use Skype. Please indicate your level of agreement with the questions that follow.
I could successfully carry out all tasks with Skype *
Please choose the appropriate response for each item:

	1 (Strongly Disagree)	2	3	4	5 (Strongly Agree)
If there was no one around to tell me what to do as I go	○	○	○	○	○
Even if it is my first time using Skype	○	○	○	○	○
If I had only the instructions for reference	○	○	○	○	○
If I had seen someone else using it before trying it myself	○	○	○	○	○
If I could call someone for help when facing problems	○	○	○	○	○
If someone else had helped me get started	○	○	○	○	○
If I had a lot of time to complete the task on Skype	○	○	○	○	○
If I had just the built-in "help" facility for assistance	○	○	○	○	○
If someone showed me how to use it first	○	○	○	○	○
If I had used programs similar to Skype to perform a similar task	○	○	○	○	○

Willingness

The following questions test your willingness to use and your expectations from Skype

If I use Skype:*

Please choose the appropriate response for each item:

	1 (Strongly Disagree)	2	3	4	5 (Strongly Agree)
It will help me be more organized with my conversatio	○	○	○	○	○
It will increase my effectiveness on the job	○	○	○	○	○
I will spend less time on routine job tasks such as calling people on phones	○	○	○	○	○
It will increase the quality of output of my job	○	○	○	○	○
I will increase the quantity of output for the same amount of effort	○	○	○	○	○
I will be less reliant on clerical support staff	○	○	○	○	○
My co-workers will perceive me as competent	○	○	○	○	○
I will increase my sense of accomplishment	○	○	○	○	○
I will increase my chances of obtaining a promotion	○	○	○	○	○
I will be seen as higher in status by my peers	○	○	○	○	○
I will increase my chances of getting a raise	○	○	○	○	○

Competency

The following questions test how competent you feel Skype is in doing what it is intended to

I believe Skype is competent. It:*

Please choose the appropriate response for each item:

	1 (Strongly Disagree)	2	3	4	5 (Strongly Agree)
Is effective in providing high level of audio and video c	nnectivity	○	○	○	○
Performs its role of facilitating online social networking and long distance communication very well	○	○	○	○	○
Is a capable online social networking provider	○	○	○	○	○
Has all the functionalities I would expect from a long distance communication tool	○	○	○	○	○

Reciprocity

The following questions are aimed at understanding your relationship with Skype

I believe Skype is a helpful tool because *

Please choose the appropriate response for each item:

	1 (Strongly Disagree)	2	3	4	5 (Strongly Agree)
When I share my concerns using Skype with my contacts or the Skype community, I believe that they will respond to my concerns and be empathetic	○	○	○	○	○
I am confident of receiving help from the Skype community when in need and hence I feel it is my duty to help other members within this community	○	○	○	○	○

Trust

The following questions are aimed at understanding your trust levels towards Skype

I find Skype to be reliable and trustworthy as: *

Please choose the appropriate response for each item:

	1 (Strongly Disagree)	2	3	4	5 (Strongly Agree)
When I communicate using Skype, I feel I can depend it	○	○	○	○	○
I can always rely on Skype for long distance communications	○	○	○	○	○
Skype is a tool on which I feel I can fully rely on for maintaining long distance relationships	○	○	○	○	○
I feel I can count on Skype when networking online	○	○	○	○	○

Benevolence/Honesty

The following questions test your perception about using Skype

Please indicate your level of agreement against each question:*

Please choose the appropriate response for each item:

	1 (Strongly Disagree)	2	3	4	5 (Strongly Agree)
I am quite certain about how Skype works	○	○	○	○	○
I am quite certain what to expect from Skype	○	○	○	○	○
I believe that Skype would act in my best interest	○	○	○	○	○
If I required help, Skype would do its best to help me	○	○	○	○	○

	1 (Strongly Disagree)	2	3	4	5 (Strongly Agree)
I feel that Skype is interested in my well-being, not just its own	○	○	○	○	○
I feel that Skype is truthful in its dealings with me	○	○	○	○	○
I would characterize Skype as being an honest tool	○	○	○	○	○
I feel Skype would keep its commitments	○	○	○	○	○
I think of Skype as sincere and genuine	○	○	○	○	○

How would you rate the effectiveness of Skype as an online social networking tool ? Where 1 being not effective at all and 5 being highly effective*
Please choose **only one** of the following:

- ○ 1
- ○ 2
- ○ 3
- ○ 4
- ○ 5

How do you rate your overall satisfaction in using Skype? *
Please choose **only one** of the following:

- ○ Very Satisfied
- ○ Satisfied
- ○ Neutral
- ○ Dissatisfied
- ○ Very Dissatisfied

Please feel free to give any additional feedback or comments
Please write your answer here:

Thank you once more for your time and help!
Yours sincerely,
Jane Niinsalu
Student of Human-Computer Interaction Master Program
Tallinn University
janen@tlu.ee

Submit your survey.
Thank you for completing this survey.

Appendix 3 – The survey (Estonian)

Usaldus sotsiaalvõrgustikes: Skype'i uuring

Kallis küsitluses osaleja. Minu nimi on Jane Niinsalu ja ma olen Tallinna Ülikooli inimese ja arvuti interaktsiooni magistrieriala tudeng ja viin läbi uurimust, mille eesmärk on uurida usalduse rolli onlain sotsiaalvõrgustikes, täpsemalt Skype'is.
Palun vasta allolevatele küsimustele oma isiklikku kogemust arvesse võttes. Küsimustiku täitmine võtab aega maksimaalselt 15 minutit. Kui sul on küsimusi, aitan hea meelega. Minu email on janen@tlu.ee.
Ankeedis on 18 küsimust

Üldine
Sugu: *
Palun valige **ainult üks** järgnevatest:
- ○ Naine
- ○ Mees

Mis on su põhitegevus? *
Palun valige **kõik** mis sobib:
- ☐ Täiskohaga töö
- ☐ Poole kohaga töö
- ☐ (Üli)õpilane
- ☐ Teised:

Vanus: *
Palun valige **ainult üks** järgnevatest:
- ○ Kuni 17
- ○ 18-27
- ○ 28-37
- ○ 38-47
- ○ 48-57
- ○ 58 või vanem

Kui tihti kasutad sa interneti teistega suhtlemiseks? *
Palun valige **ainult üks** järgnevatest:
- ○ Iga päev
- ○ 3 korda nädalas
- ○ Kord nädalas
- ○ Kord kuus
- ○ Harvem

Kui tähtsad on järgnevad tegevused sinu jaoks internetis teiste inimestega suhtlemisel? *
Palun valige kõige sobivaim vastus:

	Väga oluline	Oluline	Neutraalne	Ebaoluline	Väga ebaoluline
E-mailide lugemine ja kirjutamine	○	○	○	○	○
Failide jagamine (dokumendid, pildid, video, muusika)	○	○	○	○	○
Vestlemine ja sotsialiseerumine	○	○	○	○	○
Lühikeste postituste, kommentaaride, arvamuste jm. avaldamine	○	○	○	○	○
Info jagamine, vahetamine (nt. Facebookis, Skype'is)	○	○	○	○	○
Õppimine, ideede jagamine ametlikus hariduse kontekstis (nt. (üli)koolis)	○	○	○	○	○
Tegevuste, kohtumiste, ürituste välja pakkumine ja organiseerimine	○	○	○	○	○
Erinevate organisatsioonidega suhtlemine (nt. pangad, riigiasutused jms.)	○	○	○	○	○
Meelelahutus (nt. mängude mängimine, muusika kuulamine, TV vaatamine jms)	○	○	○	○	○

Milliseid järgnevaid lahendusi kasutad sa kaugsuhtluses (nt. suheldes teises riigis viibiva inimesega)? *
Palun valige **kõik** mis sobib:

- ☐ Facebook
- ☐ Viber
- ☐ Whatsapp
- ☐ Google Hangouts
- ☐ Telegram
- ☐ WeChat
- ☐ Line
- ☐ Tango
- ☐ Skype
- ☐ Teised:

Kui tihti sa kasutad Skype'i? *
Palun valige **ainult üks** järgnevatest:

- ○ Iga päev
- ○ 3 korda nädalas
- ○ Kord nädalas
- ○ Kord kuus
- ○ Harvem

○ Teised

Milliste seadmetega oled sa Skype'i kasutanud? *
Palun valige **kõik** mis sobib:
- ☐ Lauaarvuti
- ☐ Sülearvuti
- ☐ Nutitelefon
- ☐ Tahvelarvuti
- ☐ Nuti TV
- ☐ Teised:

Milliseid Skype'i lahendusi kasutad sa kõige rohkem? *
Palun valige **kõik** mis sobib:
- ☐ Videokõne
- ☐ Audiokõne (Skype-Skype)
- ☐ Audiokõne (Skype-telefon)
- ☐ Kiirsõnumite saatmine (tekstipõhine vestlus)
- ☐ SMS (mobiilile)
- ☐ Teised:

Motivatsioon Skype'i kasutama õppimisel ja kasutamisel.
Järgnevad küsimused hindavad su motivatsiooni Skype'i kasutama õppimisel ja kasutamisel.

Ma suudaksin edukalt ära teha kõikvõimalikud toimingud
Palun vali sobiv vastus igale väitele.*
Palun valige kõige sobivaim vastus:

	1 (Ei ole üldse nõus)	2	3	4	5 (Olen täiesti nõus)
Kui kedagi poleks mind aitamas	○	○	○	○	○
Isegi siis, kui ma kasutaksin Skype'i esimest korda	○	○	○	○	○
Kui mul oleks abiks ainult juhend	○	○	○	○	○
Kui ma oleksin enne ise kasutamist kedagi teist Skype'i kasutamas näinud	○	○	○	○	○
Kui ma saaksin probleemide korral abi saamiseks kellelegi helistada	○	○	○	○	○
Kui keegi oleks mul aidanud Skype'i kasutamisega algust teha	○	○	○	○	○
Kui mul oleks palju aega toimingu täitmisel	○	○	○	○	○
Kui mul oleks sisseehitatud "Abi" abivahendiks	○	○	○	○	○

	1 (Ei ole üldse nõus)	2	3	4	5 (Olen täiesti nõus)
Kui keegi oleks mulle näidanud kuidas seda kasutada	○	○	○	○	○
Kui ma oleks Skype'ile sarnaseid programme sarnasteks toiminguteks varem kasutanud	○	○	○	○	○

Valmidus
Järgnevad küsimused hindavad su kasutamisvalmidust ja ootusi Skype'i kasutamisel.
Skype'i kasutamine:
Palun vali sobiv vastus igale väitele.*
Palun valige kõige sobivaim vastus:

	1 (Ei ole üldse nõus)	2	3	4	5 (Olen täiesti nõus)
Aitab mul paremini vestlusi organiseerida	○	○	○	○	○
Suurendab tööl mu efektiivsust	○	○	○	○	○
Vähendab aega, mida kulutan rutiinsetele töö tegevustele, nagu inimestele helistamine	○	○	○	○	○
Suurendab muu töötulemuse kvaliteeti	○	○	○	○	○
Suurendab mu töötulemuse suurust samaväärse pingutuse tulemusena	○	○	○	○	○
Vähendab mu sõltuvust kontori tugitöötajatest	○	○	○	○	○
Jätab mu töökaaslastele mulje, et olen pädev	○	○	○	○	○
Suurendab mu saavutuste taju	○	○	○	○	○
Suurendab mu võimalusi edutamisele	○	○	○	○	○
Tõstab kaaslaste seas mu staatust	○	○	○	○	○
Suurendab mu võimalusi palgatõusuks	○	○	○	○	○

Pädevus
Järgnevad küsimused hindavad su usku, et Skype teeb seda, mida peaks tegema

Mu usun, et Skype on pädev, sest Skype:
Palun vali sobiv vastus igale väitele.*
Palun valige kõige sobivaim vastus:

	1 (Ei ole üldse nõus)	2	3	4	5 (Olen täiesti nõus)
Pakub efektiivselt kõrge tasemelist audio- ja videoühendust	○	○	○	○	○
Täidab väga hästi oma rolli onlain suhtlusvõrgustike ja kaugsuhtluse hõlbustamisel	○	○	○	○	○
On võimekas onlain sotsiaalse suhtlemise teenuspakkuja	○	○	○	○	○
Omab kõiki funktsioone, mida eeldan kaugsuhtluseks mõeldud lahenduselt.	○	○	○	○	○

Vastastikkus

Järgnevad küsimused on mõeldud arusaamaks sinu suhet Skype'iga

Ma usun, et Skype on kasulik lahendus, sest

Palun vali sobiv vastus igale väitele.

*****

Palun valige kõige sobivaim vastus:

	1 (Ei ole üldse nõus)	2	3	4	5 (Olen täiesti nõus)
Kui ma jagan oma muresid Skype'i kasutamisel oma kontaktidega või Skype'i kasutajate kogukonnaga, siis usun, et nad vastavad n	○	mure	○ ja	○	○
kaastundlikud.					
Ma olen kindel, et võin saada abi Skype'i kasutajate kogukonnast ja seetõttu tunnen, et ka minu kohus on aidata kogukonna teisi liikmeid nende murede korral	○	○	○	○	○

Usaldus

Järgnevad küsimused on mõeldud arusaamaks sinu usaldustaset Skype'i suhtes

Ma leian, et Skype on usaldusväärne, sest

Palun vali sobiv vastus igale väitele.*

Palun valige kõige sobivaim vastus:

	1 (Ei ole üldse nõus)	2	3	4	5 (Olen täiesti nõus)
Skype’i kaudu suheldes, tunnen, et võin sellele loota	○	○	○	○	○
Kaugsuhtluses võin alati Skype’ga arvestada	○	○	○	○	○
Tunnen, et kaugsuhte säilitamisel võin ma täielikult Skype’ile loota	○	○	○	○	○
Onlainis suheldes võin Skype’iga arvestada	○	○	○	○	○

Heatahtlikkus / Ausus
Järgnevad küsimused hindavad su Skype’i kasutamise taju
Palun vali sobiv vastus igale väitele.*
Palun valige kõige sobivaim vastus:

	1 (Ei ole üldse nõus)	2	3	4	5 (Olen täiesti nõus)
Ma olen üsna kindel, et tean kuidas Skype töötab	○	○	○	○	○
Ma tean üsna kindlalt, mida Skype’ist oodata	○	○	○	○	○
Ma usun, et Skype käituks minu soove silmas pidades	○	○	○	○	○
Abi vajamise korral, Skype annaks oma parima mu aitamiseks	○	○	○	○	○
Usun, et Skype hoolib lisaks enda heaolule, ka minu heaolust	○	○	○	○	○
Usun, et Skype on minuga seotud tegevustes aus	○	○	○	○	○
Ma kirjeldaks Skype’i kui ausat lahendust	○	○	○	○	○
Usun, et Skype peaks oma kohustustest kinni	○	○	○	○	○
Ma usun, et Skype on vahetu ja ehtne	○	○	○	○	○

Kuidas sa hindad Skype’i efektiivsust onlain sotsiaalse suhtluse vahendina?
1 - üldse mitte efektiivne, 5 - väga efektiivne*
Palun valige **ainult üks** järgnevatest:

- ○ 1
- ○ 2
- ○ 3
- ○ 4

○ 5

Kuidas sa hindad oma üldist rahulolu Skype'i kasutamisel? *
Palun valige **ainult üks** järgnevatest:

- ○ Väga rahul
- ○ Rahul
- ○ Neutraalne
- ○ Ei ole rahul
- ○ Ei ole üldse rahul

Tagasiside ja kommentaarid
Kirjutage vastus siia:

Suur tänu sinu aja ja abi eest!
Jane Niinsalu

Kinnita ankeet.
Täname teid, et vastasite ankeedile.