

DISSERTATIONES DE MEDIIS ET COMMUNICATIONIBUS  
UNIVERSITATIS TARTUENSIS

4

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**INFORMATION TECHNOLOGY USERS AND  
USES WITHIN THE DIFFERENT LAYERS  
OF THE INFORMATION ENVIRONMENT  
IN ESTONIA**

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## LIST OF ORIGINAL PUBLICATIONS

This dissertation is based on the following original publications that will be referred to in the text by their respective Roman numerals.

- I **Vengerfeldt, P.** (2002). The September 11 Attacks on the US in the New Interactive Media Space in Estonia. *Prometheus*, 20(3): 229–236.
- II **Vengerfeldt, P.** (2003). The Internet as a news medium for the crisis news of terrorist attacks in the US: Relevance of researching new media. In: A. Noll and M. Lanham (eds.), *Crisis communications: Lessons from September 11*, pp. 133–148. Boulder, New York and Oxford: Rowman & Littlefield.
- III **Vengerfeldt, P.** and Runnel, P. (2004). Behind the Digital Divide: Capitals and User Practices. In: F. Sudweeks and C. Ess (eds.), *Proceedings of the fourth international conference on Cultural Attitudes Towards Technology and Communication 2004*, pp. 282–296. Murdoch: Murdoch University.
- IV Runnel, P and **Vengerfeldt, P.** (2004). Uus meedia Eestis. (New Media in Estonia.) In: P. Vihalemm (ed.), *Meediasüsteem ja meediakasutus Eestis 1965–2004 (Media system and media use in Estonia 1965–2004)*, pp. 233–256, 373–382. Tartu: Tartu Ülikooli Kirjastus.
- V Runnel, P. and **Pruulmann-Vengerfeldt, P.** (2004). Mobiilid, arvutid, internetid: Eesti infoühiskonna künnisel. (Mobiles, Computers, Internets: Estonia on the Verge of Information Society.) In: V. Kalmus, M. Lauristin and P. Pruulmann-Vengerfeldt (eds.), *Eesti elavik 21. sajandi algul: Ülevaade uurimuse Mina. Maailm. Meedia tulemustest (Estonian life-world in the beginning of 21<sup>st</sup> century: Overview of the results of the research project Me. The World. The Media)*, pp. 147–163. Tartu: Tartu Ülikooli Kirjastus.
- VI Runnel, P., **Pruulmann-Vengerfeldt, P.** and Keller, M. (2006). Mobile Phone isn't a Mobile Phone Any More. In: F. Sudweeks and C. Ess (eds.), *Proceedings of the Fifth International Conference on Cultural Attitudes Towards Technology and Communication 2006*, pp. 606–621 Murdoch: Murdoch University.
- VII **Pruulmann-Vengerfeldt, P.** (2006). Computers and Internet Related Beliefs Among Estonian Computer Users and Non-Users. In: J. Berleur, M.I. Nurminen and J. Impagliazzo (ed.), *IFIP International Federation for Information Processing, Volume 223, Social Informatics: An information society for all? In Remembrance of Rob Kling*, pp. 459–468 Boston: Springer.
- VIII **Pruulmann-Vengerfeldt, P.** (2006, forthcoming). Exploring Social Theory as a Framework for Social and Cultural Measurements of the Information Society. Manuscript accepted for publication in *The Information Society* 22(5).

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## INTRODUCTION

Developments in the field of information and communication technologies (ICTs) have spawned many different fields of study. Leaving aside the actual developers, programmers and those who learn to use the technologies, there are many fields of research that have proclaimed technology studies as their own: media studies, psychology, economics, sociology, communication studies, policy studies and feminist studies, to name just a few. The field of technology studies can be best described through the multitude of paradigms, methods and ever-continuing growth.

This thesis is about people, their social lives and interactions with technology and about the different layers of the information environment of individuals. Technology is seen as a tool, an environment, a discussion partner, a mediator, a social setting and a resource.

This thesis is about social life and society in Estonia. The research traditions in the University of Tartu Department of Journalism and Communication have been focused on aspects of societal transformations for more than 10 years. Media has been studied in the sociological paradigm, looking at the interconnectedness of society and media (Vihalemm, Lauk and Lauristin, 1997; Vihalemm, 2001; Lauristin and Vihalemm, 2002; Lauk and Harro, 2003; Vihalemm and Lauristin, 2004). It had become clear by the late 1990s, that besides looking at the Estonian transition after the break up of the Soviet Union, it was also time to look at the Estonian transition towards the aspects of media, information and consumer societies. The initial attention to changes related to the political transformations has also been broadened to changes related to cultural transformations in Estonian society. Margit Keller, in 2004, defended her PhD thesis about consumerism and the consumer society in Estonia (Keller 2004); this is the first doctoral thesis examining the issues and aspects of information and communication technology use and users in Estonia.

The ideas of this research project are in contrast to the concept that social processes are 'decisively guided' by technological developments (Eesti Informaatikanõukogu, 1994: 9). This thesis, therefore, aims to investigate whether there are any profound changes in society in relation to information and communication technologies, rather than attempting to measure how far Estonia has progressed towards the political dream of an information society. The context of ICTs use and users in Estonia is invariably connected with a political paradigm of the information society; this also forms a context for the thesis. In Estonia, discussions about the information society have been occurring since the early 1990s (Eesti Informaatikanõukogu, 1994; Eesti tee meediaühiskonda, 1996; Langemets, 1999; Kalkun and Kalvet, 2002; Kalvet and Kattel, 2002; Tiits, Kattel and Kalvet, 2006).

The studies comprising this thesis can be categorized as the analysis of technology use and users in different layers of the information environment,



even though the concrete aim of each individual research project has not necessarily had that kind of research question. This thesis, being a collection of articles rather than a monographic research project, can only give some aspects of different information communication technology uses and users. It provides a variety of answers showing the benefits people have received from Internet usage in specific use contexts (**I**, **II**, **IV** and **V**), choices people can make while or mobile phones (**III**, **IV**, **V** and **VI**), factors behind Internet use (**III**, **IV**, **VII** and **VIII**) and how it relates to the social development of Estonia (**IV** and **VIII**).

The studies have also had different aims and objects of analysis. The first two studies (**I** and **II**) have a common theme of crisis news developments during the September 11 2001 attack on the USA, and online content as the object of study. Studies **IV** and **V** are in Estonian and the aims of both have been to chart the developments of new media, giving an overview of the mobile phone, computers and Internet-related developments in 21st century Estonia. Study **IV** focuses on the developments of new media in Estonia from the perspective of media systems and users. Study **V** gives an overview of survey<sup>1</sup> results from the perspective of technology use. Studies **III** and **VII** investigate the factors behind Internet usage, taking it beyond the traditional socio-demographics and looking at the social, cultural and economic capitals (**III**) and computers and Internet-related beliefs (**VII**). Study **VI** analyses mobile phones usage in Estonia looking at the topic beyond the interpersonal communication functions of calling and SMS and focusing on the use of mobile services. Study **VIII** has the same overarching framework as the whole thesis project as it also uses social theory as a possible framework to identify social and everyday life-related changes. Studies **VII** and **VIII** take the initial question of information and communication technology usage to a different level, shifting the focus to the societal aspects and showing that in order to understand the individual choice of using ICTs or not, it is useful to look at the individual from the various levels of society. The change towards looking at the individual in the social context was partially due to the fact that the initial functionalist and rationalist ideas about technology use did not prove to be valid. As many individual choices are inspired, supported and enforced in the social context, studying it is important.

The studies in this thesis project are a reflection of some of the methodological and theoretical variety mentioned above. Based on the methodological approach, two larger sets can be identified: studies **I** and **II** are based on text analysis and a small-scale study conducted among Tartu University students, studies **III–VIII** are based on representative survey data. Two representative

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<sup>1</sup> The first survey *Mina. Maailm. Meedia* (Me. The World. The Media) was carried out with the cooperation of the Department of Journalism and Communications and the public opinion research firm *Faktum* from December 2002 to January 2003, within the target financed research project (No 1774) 'Formation of the 21st Century Media Society in Estonia'. 1470 respondents and 799 variables were involved in the survey.

surveys *Mina. Maailm. Meedia* were conducted by the Department of Journalism and Communications of the University of Tartu from December 2002 to January 2003, and in November 2005.<sup>2</sup> Another survey in October 2004<sup>3</sup> that was conducted in co-operation with the Södertörn University College, Sweden, has also been used (Study VIII). In addition, study IV uses secondary data from different sources, study VIII uses a pilot study of media analysis<sup>4</sup> and study VI uses qualitative analysis of student essays.

This dissertation uses the theoretical framework of social domains introduced in studies VII and VIII (and expanded in the present introduction) **to locate the uses of information technology within the context of different social layers**. The domains of psychobiography, situated activity, social settings and contextual resources are investigated, with the purpose of looking at processes in society that are related to information technology use. The aim of this introduction is to indicate at the overarching themes of the studies. There are two broader questions:

- (1) What are the social implications of user-technology interaction within the different layers of the information environment?**
- (2) How are different social domains extended into virtual space?**

In order to explore the answers to these questions the introduction has the following structure: first, the academic and policy related contexts of the studies are presented. Social theory and the information environment are then introduced in the theoretical section, which is concluded by refining the research questions and rearticulating the aims of the PhD project. This will be followed by an overview of the data and analysis approaches taken in the different articles in this project. The empirical section, based on the key theoretical authors Layder and Lievrouw, has four parts related to the four layers of the social domain theory: psychobiography, situated activity, social setting and contextual resources. Each of these represents a social domain, which frames aspects of the user–technology interaction under consideration. The discussion section outlines some of the findings in the larger context, and the conclusions

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<sup>2</sup> The second survey *Mina. Maailm. Meedia* (Me. The World. The Media) was carried out with the cooperation of the Department of Journalism and Communications and the public opinion research firm *Faktum* in November 2005, within the target financed research project (No 1774) ‘Formation of the 21st Century Media Society in Estonia’. 1475 and 776 variables were involved in the survey; 572 respondents, who had answered the previous survey, were surveyed again.

<sup>3</sup> This survey was carried out with the cooperation of the Södertörn University College and the public opinion research firm *Faktum* from October 2004. 1500 respondents and 400 variables were involved in the survey.

<sup>4</sup> This study was conducted by Rica Semjonova (forthcoming), during her Master’s thesis project.

summarise the main findings from this thesis project. After that, the studies comprising this thesis are listed in chronological order.

The main findings of the study are related to locating the various changes in lifestyles, attitudes, communication situations, social settings and resources of the individual in the technology related situations.

## 1. Contextualising the study

### 1.1 Theoretical context

This thesis places itself in the context of information and communication technologies and user interaction, and aims to **explore some of the implications and consequences of that interaction in the social context**. Below, I will briefly indicate the possible theoretical contexts for this study, demonstrating my choices between focusing on the social, technological or the individual; on the ‘haves’ and ‘have nots’, adopters, domesticators or innovators; and/or on consumers or producers.

When we locate user-initiated and technology-related changes in society, one of the key academic debates is the discussion surrounding the information society. Despite the multitude of approaches (see for instance: Webster, 1995, 2002a, 2002b; Lyon, 1995; Duff, 2000) this thesis does not seek to contribute to the ideologically loaded and fierce (e.g. Garnham, 2000, 2004) debate concerning the existence of the information society or not. Most of the information society categories look at the social processes from a structural point of view and discuss macro-level changes, whereas this thesis takes society from the perspective of the individual and discusses technology-related implications for the different layers of social life. **Focusing on the individual** enables the author to show that technology does not cause effects as such and also to show that changes in social life can be associated with the **individual’s and groups of individuals’ interactions with technology**.

The general assumption taken in this thesis is that the individual–social relationship is multidirectional. Structures influence individual actions, but at the same time individuals can change the social structures they relate to, as Giddens says: “Society only has form, and that form only has effects on people, in so far as structure is produced and reproduced in what people do” (Giddens and Pierson, 1998: 77). If there are changes in social life identifiable at the level of the individual, then we may have cause to seek changes taking place in society as well. This is especially relevant with technology studies because as Mansell (2002) points out, in most cases, the benefits of technology are assumed, although there are no grounds for such assumptions. This thesis discusses **empirically the uses people make of technology and the possible changes within the society resulting from the usage choices**.

I will outline some of the political aspects of the debate about the information society, mainly as they form an important context for Estonian individuals using the technologies. In addition, in the discussion, I will briefly talk about my findings in the context of political rhetoric and possible further enquiries for academic debate. However, the focus of the study is on **individuals, information and communication technologies users and non-users, and applications of ICTs**.

The question regarding the direction of the influences often arises in discussions about technology–individual–society relationships. Three major paradigms are recognised ‘technological determinism’, ‘technology as neutral’ and ‘constructivism’ (Henwood *et al*, 2000). “Thinking about relationships between technology and society in terms of effects has been ‘common sense’ for so long that it has not needed a label. This approach is usually associated with the notion that technological progress represents social progress” (Henwood *et al*, 2000: 9). Some of the widely recognised technological determinists are for instance Harald Innis (1951), Marshal McLuhan (1964) and Jacques Ellul (1964). This kind of rhetoric is also recognisable from policy discussions. The problem with technological determinism is that it does not incorporate human or social choice. ‘Technology as neutral’ is a way of thinking in which the origins and development of technology is not questioned, but the ways in which they are used and applied is (Henwood *et al*, 2000). This challenges the claim of straightforward technological effects on social life. Constructivism looks at the origins and the uses of the technology through critically examining the social interactions and the processes of giving meaning (e.g. MacKenzie and Wajcman, 1985, 1999; Bijker, Hughes and Pinch, 1987).

The thesis, in many ways, fits in with the **‘technology as neutral’** paradigm as it looks at what Wyatt calls “a very messy process of change, involving not only new technical artefacts but also a range of broadly social factors, including struggles over political, economic and cultural control within and between countries, organisations and households” (Henwood *et al*, 2000: 11). However, I do agree with the social constructivists in their thinking that straightforward origins of technological development are also to be considered problematic, or that the technologies can not be considered politically or symbolically neutral (Chandler, 1995). Therefore, the thesis can be seen having many elements of **social constructivism** (e.g. critical approach to the origins of the changes in society).

Another important strand of academic work in the users and non-users area is related to the discussions about the digital divide (Compaine, 2001; Norris, 2001; Katz and Rice, 2002; Sevron, 2002; Carpentier, 2003). The digital divide is also a highly politically loaded topic, because as Menou puts it “The fascination for technology and novelty, associated with the sizeable investments and prospects for even wider profits, have contributed to the dominantly positive credo that ICT, and thus the Internet, are good, essential, positive” (Menou, 2000: 49). This thesis critically examines the overly positive attitude

towards technology in an attempt to locate actual changes that are born from the interaction with the technologies, rather than assuming one-sided positive effects of technology use. Thus, in order to locate these changes, this thesis focuses beyond the divide to the discussion about the **diversity of usage** (e.g. Bakardijeva and Smith, 2001; Jung, Qiu and Kim, 2001; Cammaerts *et al*, 2003). Diversity is understood in terms of the choices of ICTs users and non-users.

In order to discuss the diverse uses technology is put to and often is not, there are different approaches (e.g. Bruce, 2002; Lievrouw and Livingstone, 2002; Wellman and Haythornthwaite, 2002; Woolgar, 2002; Pettersson, 2003). This thesis neither looks at how technology is used to produce new content, nor at how it is changing media systems and production practices. This thesis focuses instead on the user end of the discussion, looking at how the **user and the technology relate** to each other.

A similar question is asked within the realm of domestication studies (Berker *et al*, 2006; Hirsh and Silverstone, 1992). The focus of domestication studies is traditionally within the home setting and uses small-scale and highly detailed studies. This thesis, however, is mostly based on survey data analysis, and the analytical focus has been beyond the different locations where people apply the technology. While domestication studies focus mostly on the realm of the individual, the overall aim of this thesis is to look at the implications of the technology and user interactions **within the different layers of social life**. This project has in some senses been inspired by ‘diffusion of innovations’ studies (Rogers, 1995), but it rejects the linearity and rationality of the diffusion processes and acknowledges that the processes within society are interconnected.

This study uses a social theoretical analytical framework to investigate and summarize the different results. The starting point of the analysis is the **relationship between the individual and technology**.

In order to better understand some of the results presented in the empirical section, I introduce here another dimension or term that has evolved together with the notion of the information society. ‘Cybersociety’ or ‘cyberspace’ is mostly understood as a parallel term for the information society or, as in the context of this work, as a concept marking social activities in the virtual realm of computer networks (Hakken, 1999; Jordan, 1999; Woolgar, 2002).

This term is necessary in order to understand and discuss some of the findings that are related to the extensions of the social layers into the virtual world. Jordan defines cyberspace as:

When cables and phone lines are allied to computers, this parallel world of cyberspace is created. It is often called a virtual world because it does not exist in tangible, physical reality but in the light and electronics of communications technology (1999:1).

The origin of the term cyberspace is attributed to the science-fiction writer William Gibson, connecting the use of the term to literature studies and cyber-culture analysis (e.g. Bell, 2001; Levý, 2001; Lister *et al*, 2003). It is important, in the discussion of the implications of user-technology interactions, to understand how cyberspace and society relate. Cyberspace was understood in earlier discussions as a separate society, where people entered for instance to play with their identities (Turkle, 1995). Woolgar (2002), among others, contradicts these ideas and draws attention to the fact that it is not possible to see cardinal changes within society that could be explained by the existence of a cyber-society.

The relationship between real and virtual aspects of society are, in the frame of this thesis, seen as **social domains having extensions into virtual space**, as opposed to having stand-alone societies which are connected to each other. Individuals cross the border of online and offline easily and flexibly, and their essence remains the same. Therefore, in my opinion cyberspace does not contain a unique society, but rather that different layers of society today operate together with the virtual space created by computer networks (Woolgar, 2002). The question for this thesis is to understand **how the different social domains are extended into virtual space**.

## 1.2 Context of Estonia

The concept of the information society can be seen in most Western countries, as a way to interpret the changes taking place in post-industrial or post-modern society. Countries like Estonia, that are moving towards an information society from former Soviet-era positions are experiencing changes related to information and communication technologies, along with changes towards modernism, post-modernism, industrialism and post-industrialism.

Discussions about the importance of information and communication technologies have been ongoing worldwide, inspiring even a World Summit dedicated to the notion of the information society. The agenda for the World Summit on the Information Society reads:

The digital revolution, fired by the engines of Information and Communication Technologies, has fundamentally changed the way people think, behave, communicate, work and earn their livelihood. It has forged new ways to create knowledge, educate people and disseminate information. It has restructured the way the world conducts economic and business practices, runs governments and engages politically. It has provided for the speedy delivery of humanitarian aid and healthcare, and a new vision for environmental protection. It has even created new avenues for entertainment and leisure. As access to information and knowledge is a prerequisite to achieving the Millennium Development Goals — or MDGs —, it has the capacity to improve living standards for

millions of people around the world. Moreover, better communication between peoples helps resolve conflicts and attain world peace (WSIS, 2006).

This discussion is a good illustration of the glowing language considered necessary for policy initiatives, which aim to unite the world, in discussing the developments accompanying the implementation of information and communication technologies. It also gives a good example of the ‘taken for granted’ ideas and expectations of the ‘one-way technology-related change’ model. The hopes quoted reflect the many aspects that the information society and information technologies are supposed to improve. In order to raise political awareness of the possibilities information and communication technologies can bring to society, May 17<sup>th</sup> was declared as the World Information Society Day (WISD, 2006).

Estonian governments have, since Independence, had the aim of joining the EU; thus, different EU-level policies have also made important contributions to the Estonian contextual resources domain. The political rhetoric that has helped to govern information society policies in Europe and in Estonia is strongly influenced by the European White Paper, as joining the EU was a policy goal implemented at all levels. European policies have positioned the information society-related challenge from the perspective of economic growth and increased competitiveness.

Mansell and Steinmuller (2002: 16–17) provide a summary of the European Commission’s White Paper:

- The process of technological changes bringing networked information and communication technologies and multimedia information into greater utilization throughout the industrialized world is inexorable and irreversible.
- Advancing to the forefront of this process of changes will bring benefits in economic growth and competitiveness that will translate into lower levels of unemployment.
- To advance to the forefront, proactive policies are required in regulation, technology policy, and investment to construct the information and communication infrastructure supporting the exchange of information and the creation of new services.
- There are problems with the massive process of change implied by these processes that will require attention and mitigation to preserve the inclusivity of the information society and to reflect its European character.
- The recognition of the scale and importance of these developments is too narrow in Europe and substantial efforts must be made to convey their significance all levels of society.

The improvement of human life is, along with the technological and economic changes, increasingly prominent in the different definitions of the information society. The pressure on political information society definitions to become more socially inclusive is visible in most critical accounts. Servaes (2003)

describes a gradual shift towards more socio-economic and cultural definitions of the information society. This inclusivity is visible on paper (e.g. Europe's Information Society); however, the processes are still understood as predominantly technology centred (Preston, 2003; Wyatt, 2001).

This kind of political understanding of European Information Society initiatives is also reflected in Estonian policies. The fact that information technologies are seen as having the leading role in the development of the information society, and that technology adoption is seen as a must for all levels of society, are problematic aspects of this political understanding as it is predominantly technologically deterministic, giving technology power to change society (Menou, 2000; Mansell, 2002; Wyatt *et al*, 2002).

These ideas about the information society are not recent or radically new in Estonia. Marju Lauristin stated that “It is indeed remarkable that in Estonian society, the discussion about the information age has started so quickly” (1996: 16). It was concluded, at a 1996 conference dedicated to the Estonian movement towards an information society, that the development of different physical infrastructures, infostructures of education, media literacy and skills, and changes in everyday lives of individuals would be the priority for Estonia (Ibid: 39–40). This shows that public discussions on the Estonian information society have been at the forefront for quite some time. Although Estonia has not been alone in its development away from the communist regime of the Soviet Union to the information society of the 21<sup>st</sup> century, it is often identified as one of the success stories and one of the reasons is that it has identified the importance of these developments at an early stage (Krull, 2003; Blanke and Lopez-Claros, 2004; study IV).

I consider this information society discussion to be relevant in the fact that information and communication technologies are widely used in society and although the term ‘information society’ is problematic, there are still a number of changes in society that should be noted and investigated and that are commonly associated with the term. If we look at the statistics, we see that increasingly more people are using the Internet and computers (Eurobarometer, 2006; Eurostat, 2006; study VI) — this thesis **discusses the sorts of roles technology is being given**. There is potential for further study to look at the types of changes individual adoption and use of information and communication technologies brings to society. In order to move towards this type of research, this thesis aims to **locate some of the changes in their appropriate domains**.

As most of the data discussed in my studies concentrates solely on Estonia and uses local measurements acquired from the perspective of the individual, it has been useful to complement it with international comparisons made from the European Union perspective. Since many of the studies in this thesis project were published a few years ago, I feel it is important to establish the statistical context in order to bring in some of the internationally comparative statistics that are available, which help to position Estonia relative to the European level.

Estonia, according to the latest available Eurostats tables (Table 1.1), ranks below the EU25 average in Internet access at home, occupying third place in the



new members' category; and is approximately at the EU25 average at the fourth place in Internet access in enterprises, among the new members. However, it tops the results of the EU25 in broadband access, having the highest levels of home broadband among the new members, and second place in enterprises. Table 1.1 illustrates the contextual resources of Estonian households and enterprises. Internet access, and especially broadband connection, is considered to be one of the dominant resources of the information society.

**Table 1.1** Internet access by households and enterprises, Jan-March 2006 (%)

	Proportion with internet access		Proportion with broadband connection	
	Households	Enterprises	Households	Enterprises
EU25*	48	91	23	63
Austria	47	95	23	61
Belgium	50	95	41	78
Cyprus	32	85	4	40
Czech Republic	19	92	5	52
Denmark	75	97	51	82
Estonia	39	90	30	67
Finland	54	98	36	81
France	–	–	–	–
Germany	62	94	23	62
Greece	22	92	1	44
Hungary	22	78	11	48
Iceland	84	–	63	–
Ireland	–	92	–	48
Italy	39	92	13	57
Latvia	42	75	13	48
Lithuania	16	86	12	57
Luxembourg	77	92	39	64
Malta	–	–	–	–
Netherlands	78	91	54	71
Norway	–	93	–	78
Poland	30	87	16	43
Portugal	31	–	20	–
Slovakia	23	92	7	48
Slovenia	48	96	19	74
Spain	36	90	21	76
Sweden	73	96	40	83
United Kingdom	60	90	32	65

\* EU25 excludes Member States for which data is not available

– Data not available

(Eurostat, 2006)

In Table 1.2, levels of Internet usage among individuals show that Estonia is above average in all categories of regular Internet users groups and is leading the list of new member states. The percentages show another important aspect of overall developments: 95% of Estonian students use the Internet at least once a week. This indicates that there is a new generation growing up for whom the use of information and communication technologies is embedded in their daily lives. It is, therefore, the role of the researcher to establish the sort of positions information technologies has in the individual's information environment and through an understanding of that position, we can go on to discuss if and whether the technologies can in the future change the processes of social life.

**Table 1.2:** Internet use by individuals, Jan–March 2006 (%)

	Use the Internet at least once a week						Have never used the Internet					
	Total	Men	Women	Student	Emp.*	Unemp.**	Total	Men	Women	Student	Emp.*	Unemp.**
EU25***	43	49	38	79	55	32	43	39	47	7	29	48
Austria	49	54	43	91	61	39	40	35	45	3	25	45
Belgium	53	58	48	88	65	39	39	35	43	6	25	48
Cyprus	26	28	24	64	30	29	64	62	66	17	59	55
Czech Rep.	26	29	23	63	33	12	63	60	65	17	54	75
Denmark	73	75	71	95	81	68	14	13	16	1	7	14
Estonia	54	57	51	95	63	u	36	33	38	u	25	48
Finland	62	64	60	79	76	37	23	23	23	0	12	32
France	–	–	–	–	–	–	–	–	–	–	–	–
Germany	54	62	47	88	64	45	29	24	33	u	17	28
Greece	18	22	15	48	28	14	73	71	75	31	59	72
Hungary	34	34	33	71	44	22	60	60	60	20	48	69
Iceland	81	82	79	98	85	66	11	9	12	0	6	21
Ireland	–	–	–	–	–	–	–	–	–	–	–	–
Italy	28	34	23	66	39	23	62	56	67	19	49	64
Latvia	36	37	36	81	46	15	51	50	52	3	39	72
Lithuania	30	30	29	85	38	7	61	61	62	4	51	82
Luxembourg	63	76	51	87	73	45	29	17	40	4	20	45
Malta	–	–	–	–	–	–	–	–	–	–	–	–
Netherlands	74	79	68	97	85	87	18	14	22	1	7	8
Poland	29	31	28	74	38	12	58	56	59	7	46	69
Portugal	28	31	25	88	34	15	63	59	66	4	54	70
Slovakia	43	47	39	79	49	26	42	38	45	2	35	53
Slovenia	40	42	39	u	54	u	48	45	50	u	31	u
Spain	35	40	30	77	46	27	50	45	54	4	35	49

\* Employed

\*\* Unemployed

\*\*\* EU25 excludes Member States for which data is not available.

– Data not available; u Data not reliable

(Eurostat, 2006)

## 2. The theoretical framework

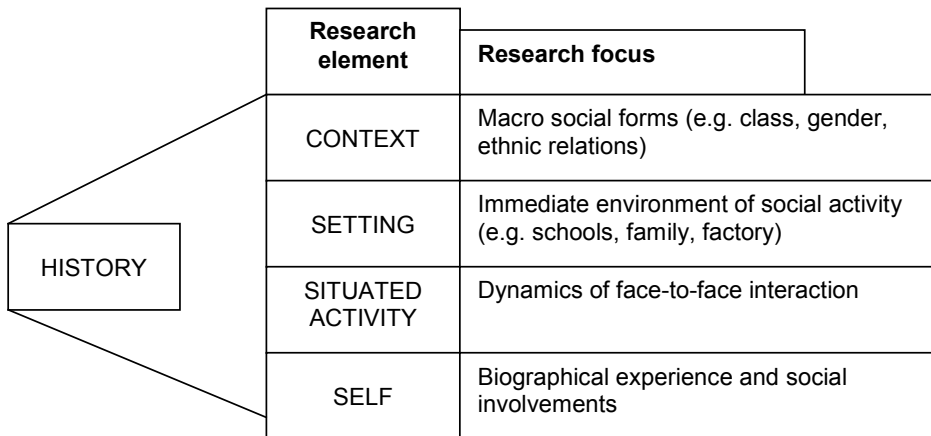
The aim of this theoretical introduction is to provide an overarching theoretical framework that can be used to understand the results of different studies in the context of information society definitions. This section is mostly inspired by theoretical works by Derek Layder (1993, 1997) on the theory of social domains and by Leah Lievrouw (2000, 2001) on the application of the information environment.

Both of these theoretical accounts point to important aspects of the individual, technology and society interactions that have been neglected in many approaches. An important aspect is that both works are interested in looking for the balance between systems (structures) and actors (individuals), and using similar accounts of multiple research points, as opposed to just two. The reason for choosing Derek Layder and Leah Lievrouw is because they provide a similar solution to the opposition of structure and agency. Layder proposes to divide society into four interchangeable domains, showing that aspects of agent and system stretch across the four domains, and thus provide four slightly different frameworks to understand the changes towards the information society. Lievrouw posits two different aspects of the structure dimension — specifying social and institutional structures, indicating an important difference, which is especially valid in technology research situations.

### 2.1 Theory of social domains

Derek Layder has proposed four social domains in several of his writings (1993, 1997, 1998, 2004a, 2004b). He has explained the layered approach to society, first from the empirical perspective as the basis of a **research map** (1993) and then from the theoretical perspective as a **theory of social domains** (1997). Layder's theory of social domains is also used in studies **VII** and **VIII**.

Layder, in 1993, proposed a research map consisting of four broad research elements: context, setting, situated activity and self (Layder, 1993: 8). He sees two main uses for the map: (i) as a tool for understanding published research; and (ii) to help and plan field research which has theory generation as the primary aim (Layder 1993: 73).



**Figure 1:** Research map of social domains (adapted from Layder, 1993: 8)

Layder, in his introduction to the research map, suggests that **self** and **situated activity** are difficult to separate; however, it is important to identify them as specific points of departure for the research. “The notion of self (later he uses the term psychobiography) is an individual’s sense of identity, personality and perception of the social world as these things are influenced by her or his social experience” (Layder, 1993: 74).

While the psychobiography domain is distinct and represents the individual’s personal and social aspects, the domain of situated activities is a reflection of the individuals in interactions.

The area of situated activity shifts focus away from the individual’s response to various kinds of social situations towards a concern with the *dynamics* of interaction itself. This concern with the dynamics of interaction stresses the way in which gatherings of or encounters between, several individuals tend to produce outcomes and properties that are a result of the interchange of communication between the whole group rather than the behaviour of constituent individuals viewed singly (Layder, 1993: 80).

**Setting** and **context** (later renamed by Layder as *social setting* and *contextual resources*) are distinguishable, as they have an already established existence beyond the situations and self and are in large part made up of reproduced social relations. The separation of the settings and contexts is probably best understood by understanding the contexts as macro elements of society, and settings as the organisational level (Layder 1993).

The temporal dimension of all of these domains is gathered under the heading of **history** — although interwoven, each of the dimensions presented above moves through time with specific reference to their different properties

(Layder, 1993: 101). The studies under discussion mostly focus on one point in time (except for study **IV**), rendering the temporal dimension from past to present times beyond the scope of this study.

Such a research map is an interesting way to summarize the different research projects presented here, in order to better understand their relationships with each other. A focus on social domains helps us to see the different aspects of social life that might otherwise be neglected.

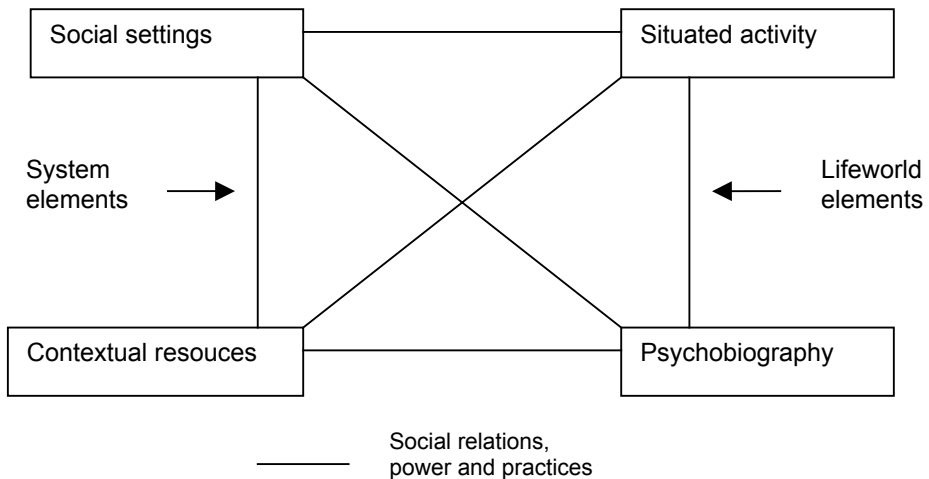
Layder, in his later work, proposes further development from what is initially introduced as a research map for the theory of social domains. “Society and social life can be viewed as comprising a number of important dimensions that have varying and distinctive characteristics and that these differing ‘social domains’ are interlocking and mutually dependent on each other” (Layder, 1997: 2). Domains are related to each other not only as ‘layers’ of social life within the same time unit, but also as stretched across time and bound together by social relations and positions, power, discourses and practices. The theory of social domains rejects the view of individuals as completely self-sufficient, untouched by social forces, but tries to remain in the ‘middle-ground’ in a sense that it also rejects complete social domination (Layder, 1997).

There are theories that seek to overcome the divide of action–structure such as Hilbert’s (1990) “local practices”, the “discursive practices” by Foucault (1980), Giddens’ (1984) “social practices” or “habitus” by Bourdieu (1977). Hilbert, for example, explains “Ethnomethodology’s concern with the “local” is a concern with social practices which are methods of producing both micro-structure and macrostructure as well as presumed “linkage” between these two” (1990:794). These authors provide valuable concepts to depict the seamlessly interrelated nature of social processes. Each of these authors has contributed to the development of an understanding of social domains, but Layder sees the problem of the listed theorists being that “practices” are placed mostly in the dominant role in the research; thus other features of social life are neglected or excluded (Layder, 1997: 8). That is also a reason for selecting Layder as the dominant theoretical concept for this thesis, as it helps us to understand the different layers of society and to interpret the results of multiple studies.

According to Layder (1997, 10–13), social domain theory draws upon and complements an understanding of many different theories. First, it supports Marx and Durkheim in understanding that social phenomena have “objective” characteristics as well as subjective ones and that these objective characteristics can and should be researched. Second, it has been informed by Parson’s research with emphasis on different layers of systems that each has their own characteristics, while still being interconnected. Another contemporary theorist whose work is important inspiration for domain theory is Jürgen Habermas and his distinction between lifeworld and system (1989). Although Layder disagrees (1997) with Habermas on several points, Habermas’s theory of “communicative action” shares many similarities with the theory of social domains. The theory of social domains also shares similarities with Goffman’s research in regard of

paying attention to the importance of face-to-face interactions and Giddens’s attention to human agents. However, domain theory also differs in various aspects from all the above-mentioned theories, as it is most considerate in terms of its attention to different layers of society.

Society and social life is understood as the interwoven four domains, similar to the empirical framework discussed earlier. These domains are psychobiography, situated activity, social setting and contextual resources. Figure 2 shows a graphic representation of the different domains.



**Figure 2:** The social domains (adapted from Layder, 1997: 87)

Layder explains “the term ‘**psychobiography**’ aptly conveys the sense in which the unfolding of an individual’s life provides a recurrent source of feedback that adds to and modifies the ballast of emotional energies that fuels our social responses and attitudes” (1997: 25). The term psychobiography also carries the fundamental duality of an individual’s social and private aspects, in a similar fashion to Habermas’s understanding of social and subjective worlds. The duality of the term also expresses the tensions involved in the intersections of the individual’s subjectivity and the customs and orientations that reflect their involvement in social groupings. The latter is somewhat similar to Bourdieu’s understanding of ‘habitus’ although it doesn’t adequately reflect the unique nature of the individual and gives too much weight to social forces (Layder, 1997). Layder gives an extended explanation of the psychobiography domain in his book *Social and Personal Identity* (2004).

The domain ‘**situated activity**’ involves face-to-face contact between two or more people who are in each other’s response presence, so that they can monitor each other’s actions and perhaps modify their own to suit. The ‘situated’ in the term points to the evasiveness of such encounters, making them

integrally tied to local circumstances and practices (Layder, 1997: 85). Every instance of situated activity is intertwined with the reproduction of general social practices, relations and discourses as they are drawn upon by the actors during the encounter.

‘**Social settings**’ are proximate locations of social activities and specific social practices — primarily composed of reproduced relations and practices, but also including references to geographic region as well as physical “housing” (Layder, 1997: 87). They exist independently of specific people and practices; they are elements of social systems.

‘**Contextual resources**’ can be understood as a set of economic and dominative resources and cultural and discursive forms. Bourdieu’s notion of social fields (1984) is complementary with the theory of social domains as it “points to the set of relations between the objective social positions that fall within particular fields, for example the fields of economic production, of art, of political power, intellectual life or educational attainment” (Layder, 1997: 116).

Looking at each of those domains, as aspects of research maps or as aspects of theoretical considerations, helps us to understand macro or micro dimensions of research. In order to understand the implications of technology–individual interactions, we need to look at these dimensions together and keep in mind their strongly interconnected nature. Using four dimensions enables us to separate individual and small-scale social situations in individuals’ interactions. This helps to gain a better understanding of the multitude of roles technology has in today’s society. In addition, this enables us to split the structural aspects of society into two and thereby to identify contextual resources as structures that are more fixed and stable and social settings that are somewhat closer to the individual (better connected through situated activities). While some of the domains are well studied within different paradigms of technology studies (e.g. contextual resources as information society aspects, psychobiography as innovator’s categories), this thesis aims to put all the layers of society together for a complex analysis of user and technology interactions.

One of the aims of this thesis is to show that looking at all the different aspects of society enables us to understand the implications of technology–user interactions that might not otherwise be visible. Using domain theory as the theoretical framework enables us bring together in one theoretical framework aspects of the micro, meso and macro-levels of the analysis.

## 2.2 Information environment

Another concept that has supported the theory of social domains has been the **information environment** as introduced by Lievrouw (2000, 2001). In 2000, Lievrouw used this concept in understanding the changes necessary for the universal service concept. The paper from 2001 looks at the role of new media in the information environment, from the aspect of differentiation. In the information environment, elements are similar as the in the theory of social domains, but they are presented in the dynamic context of the informing.

An attractive aspect of Lievrouw's use of the information environment concept is that she points out that "sociality and social structure both shape, and are shaped by, different groups' particular information resources, communication relations and enabling technologies" (2001: 12). This kind of circular and everchanging understanding of social relations gives a good balance between technology studies, which can often be seen as either technologically or socially deterministic (Mackay, 1995).

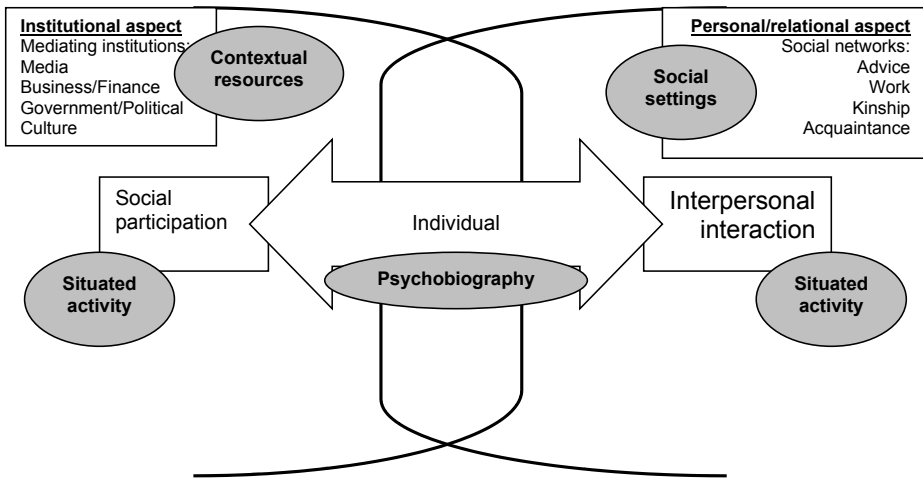
Information environments are social settings or milieux in which these resources, relations and technologies undergo a structuration type process of change called informing. Information and knowledge, institutional formation and interpersonal communication, technology and social action, structure and agency are mutually and recursively shaped (Lechner, 1985: 158, quoted in Lievrouw, 2001: 12).

Layder stresses the key position of the situated activity in his model of social domains, and that different domains interact with each other through power, social relations and practices. Complementary to that understanding, the visual model of the information environment, Figure 3 helps us to see more clearly the relationship between the different domains.

While Layder's domains are described through their static and descriptive concepts, Lievrouw's information environment describes the same aspects of society through their role in the 'cycle of informing' that takes place in society. This helps us to understand the many roles these domains take in shaping and structuring the technology-user interactions.

The value of Lievrouw's article (2001), for the purpose of this thesis, is in the adaption of the schematic representation of the information environment in Figure 3. I have removed the 'cycle of informing' as less relevant for this discussion and added the labels that indicate the collision and similarities with Derek Layder's domain theory. This shows that, in essence, the two theoretical concepts are very similar.





**Figure 3:** Information environment (adapted from Lievrouw, 2001: 14), including Layder’s theory of social domains

The **institutional aspect** of the information environment has many similarities with the contextual resources of social domain theory. In the information environment, “mediating institutions organize key cultural and technological resources to produce and broker information for the community at large” (Lievrouw, 2001: 13). Examples of mediating institutions are “information and content producing organisations such as businesses, government, and cultural institutions /.../ Information they produce is filtered, shaped, and circulated by media organisations” (Lievrouw, 2000: 156). In the theory of social domains, the same organisations govern the contextual resources of laws, norms, public opinions and division of resources.

In the **personal/relational aspect** of the information environment “people create and share knowledge and information with others through smaller-scale interpersonal interaction and information seeking activities” (Lievrouw, 2001: 13). In the first instance, this seems similar to the situated activities domain, but when we look at the examples of where such interpersonal interactions take place, we can see that social networks of kinship, work and acquaintances can also have the stability of the social setting domain.

I have, in this adapted version of the information environment schema, placed the individual in a clearer position. The individual is in the information environment theory described through capacities that are defined as personal and situational factors, similar to the biography aspect of the psychobiography domain. Similarly to Layder’s description, personal factors include, among others, literacy, innovativeness, technical or communicative competence, motivation, social intelligence and situational factors like geographic locations,

community norms, economic means and so on (Lievrouw, 2001: 15). Lievrouw, in listing these personal factors, has drawn attention to some of the characteristics that help us to better understand the psychobiography domain of the individual in interaction with the technology.

Individual capacities are exercised in the domain of situated activities through face-to-face or mediated communication, and here Lievrouw complements Layder through the addition of the mediated communication aspect. Through networked interpersonal relations and the social participation and situated activity domain, other domains are reproduced and produced.

The information environment is in some aspects similar to the information use environment (Taylor, 1991; Study VIII) and in that aspect, also has similarities to the impact assessment project (Menou, 1993; Study VIII).

Lievrouw also brings in a discussion of the technology as she talks about the role of technology in the information environment and its differentiating aspects. She stresses the importance of doing research beyond the Internet and computers, to include wireless technologies (2001). Lievrouw, in a discussion of the role of information and communication technologies, joins with the criticism of macro-level and electronics and technology oriented measures and discusses the importance of adding social conditions measurements but she agrees, in regard to content measurement, with the need to study media content (2000: 157).

Although Lievrouw (2000) has proposed measures to operationalise the understanding of the community-level information environment, as although they are interesting and valuable indicators, they are designed more for secondary data analysis and are aimed at information indicators. Instead, I propose a mixture of two analytical frameworks, which can be used to stress the importance of the context, social structure and individual in the context of understanding the interactions with the technology.

As today's society is often understood as a "media-rich and technologically intensive society" (Wilhelm, 2004: XIV), using the information environment concept to describe social processes gives added value to discussions around aspects of media, technologies and communications in social life. The information environment helps us to understand the changing nature of the social world through discussing the dissemination of information.

### 2.3 Aim of this thesis

The theories of social domains and of the information environment together help us to locate technology-user interactions and related changes. As referred to above, this thesis has two major questions. **(1) What are the social implications of user-technology interaction within the different layers of the information environment?** The key element of this first question is the 'user-technology interaction', as I consider that users and technology interact *with*

*each other* to the possible changes of both parties. Information and communication technologies are used (or not used) with many different consequences, and at the same time, availability, relevance and accessibility of the technologies are strong influences on users' behaviour. This question focuses the debate within the different layers of social life, in order to have a more holistic understanding of the processes. While, for instance, domestication theory looks at the individual in a specific use context, looking through all four social domains helps us to see the processes on different levels.

**(2) How are different social domains extended into virtual space?** This takes further the idea outlined above regarding the interactions between cyberspace and social domains. In this thesis, it is taken as an assumption that social domains extend into virtual space, so this second question considers the variety of extensions that take place.

The four sub-questions to consider focus on specific aspects of each particular social domain.

- a) How does information and communication technology participate in the formation of the psychobiography domain?**
- b) What is the character of the technology-related transformations of social interactions?**
- c) How does information and communication technology-related change establish and influence social settings for the user?**
- d) How do institutional aspects influence the contextual resources of the user-technology interactions?**

The two main questions, about user-technology interactions and about virtual extensions in the different layers, are answered through the discussion of the empirical results of the studies briefly introduced above, as summarised in Table 2.1. Each of the columns also respectively corresponds to a sub-question. As discussed above, each domain is strongly interconnected, making it sometimes difficult to distinguish each separate data item. None of the studies presents information about one domain only, although most of them have their focus on different aspects of psychobiography (**III**, **IV**, **V**, **VII**, and **VIII**). At the same time, each of the studies describes at least some aspects of contextual resources, as this enables us to understand the results in their proper context except for study **V**. This is part of a larger research report from the Department of Journalism and Communication's research team, the context is introduced (Kalmus, Lauristin and Pruulmann-Vengerfeldt, 2004).

**Table 2.1:** Overview of aspects of social domains in different studies

Study	Psychobiography (a)	Situated activity (b)	Social settings (c)	Contextual resources (d)
I	Information channel	News consumption as interaction between individuals	Online setting as social settings	
II		News consumption as interaction between individuals	Online setting as social settings	
III	Information channel, technology interacting with the social, cultural and economic capital. User types as virtual aspects of psychobiography			
IV	Information channel, user typologies		Private and public institutions as social settings	Media, private and public institutions
V	Information, communication and opinion expression channel, computer and internet user typologies	Mobile phone as mediating social activities	Computers and the Internet as virtual extensions of social settings	
VI		Mobile phones as partners in situated activities, classification of mobile phones services		Public-private institutions providing mobile services
VII	Attitudes and beliefs about computers and technology			
VIII	Attitudes towards technology-related changes, lifestyle and technology interaction		Instant messaging technologies as virtual extensions of social settings	Political and economic aspects, media about information technologies

The thesis makes a call for a holistic and balanced approach to understanding the implications of technology-user interactions, which these eight studies provide, but not as individual papers. Studies presented in this thesis have had as the major focus the position of the individual, thus, overall the contextual resources domain can be seen as under represented.

### 3. Data and analysis

The studies comprising the thesis use a variety of methodological and data analysis approaches.

Studies **I** and **II** are based on a questionnaire with 156 student participants, where the aim was to determine what kind of media they followed, where they learnt about the news of the September 11 crisis in the United States, and what kind of media they used to follow up the news events. The aim of the text analysis was to investigate institutional and non-institutional narratives within the news. In study **I**, institutional opinions were derived from newspaper text analysis of the *Postimees* and *Päevaleht*, and non-institutional opinions were derived from the Internet commentaries of those two newspapers, log files of two chat rooms and log files from two Internet Relay Chat (IRC) channels. The text analysis in study **I** was mostly explorative. In addition to the questionnaire, study **II** also used information derived from follow-up semi-structured dyadic interviews conducted with seven pairs of people. The text analysis in study **II** is more complex, as it used a combination of content analysis and qualitative analysis methods. The body of the texts is also narrower, focusing on one newspaper (*Postimees*), its commentaries and two IRC channels.

Studies **III**, **IV**, **V** and **VIII** look at the data from a large survey conducted in December 2002 and January 2003. The survey design was large-scale and complex, comprising the written survey and oral interviews, with a total of approximately 800 variables. The sample population included 1000 Estonian and 500 Russian speakers living in Estonia. The methodological overview of the survey is available in the articles in this thesis and also by Lauristin and Vihalemm (2004) in the book *Eesti Elavik 21. sajandi algul*.

Along with the survey data, study **IV** uses secondary data collected by other institutions (Emor, RISO) to give an overview of Internet developments in Estonia.

Studies **VI** and **VII** also use a follow-up survey from November 2005. In that project, 1000 Estonian and 500 Russian speakers were studied using the same combination of written survey and oral interview.

Studies **VII** and **VIII** compare some of the results of the 2003 and 2005 survey. Study **VI** uses a close reading of student essays to enrich and add context to the 2005 survey data.

Study **VIII** uses a variety of methods (survey and text analysis) to investigate information society developments in Estonia. Besides the surveys already mentioned, study **VIII** also uses secondary data from media analysis to explain the attitudes of Estonian media towards the information society and technologies.

This introductory text, besides the sources listed above, uses secondary data from the Eurostat survey (2006) and additional data from the 2005 survey to further explain and contextualize some of the findings from earlier studies. This was done because many of the findings are from an earlier period, so the addition of the 2005 data was necessary to better understand the factual level of technology use in Estonia.

Although most of the studies in this thesis project have a quantitative focus and they are based on analyses of survey data, this does not mean, that I consider quantitative methodologies to be the only (or the best) way to analyse technology use and users. The data and tools of analysis used in these studies are in many aspects a reflection of the focus in the Department of Journalism and Communication. Studies **I** and **II** are based on my Master's thesis (Vengerfeldt, 2002) and are also reflections of the possibility of combining many methods in order to understand different aspects of the research problems. Studies **VI** and **VIII** continue with combining different research approaches, but all the other studies were born from the need to analyse and present the data from the survey projects. Thus less effort was made to combine methods and approaches there.

If the aim is to put the above-described domain theory to full use in analysing as many aspects of technology–user interactions as possible, then a variety of methods and research data should be used. This thesis supports the understanding that different aspects of social processes can only be fully understood by employing a wide variety of research methods and tools.

## **4. Empirical findings**

The empirical findings are introduced through four domains: psychobiography, situated activities, social settings and contextual resources. The order of these domains is from the individual through social towards institutional aspects of societal life. Most of the studies comprising the PhD thesis focus on the individual or social aspects. Therefore, these results are presented first. The contextual resources domain, which is used mainly for background information, is presented last.

## 4.1 Domain of psychobiography

Psychobiography summarizes two aspects of the individual–personality as something that is innate and biography as something that is socially acquired. The key question for this domain is: **How does information and communication technology participate in the formation of the psychobiography domain?** To answer this question, three larger themes are discussed: (i) ICTs-related beliefs and attitudes; (ii) ICTs as aspects of an individual’s resources; and (iii) ICTs-related lifestyle changes.

It can be argued that beliefs and attitudes govern much of our everyday actions and are mostly acquired through socialisation processes. A number of my studies have focused on computer and Internet-related beliefs. Technology can be seen having the role of an information channel (studies **I**, **III**, **IV** and **V**), a channel for communication between individuals (study **V**), or a channel for expressing opinions (study **V**), so investigating opinions related to each of those roles, we can discover some important aspects of the psychobiography domain of Estonians.

Attitudes towards information and communication technologies create a link between two layers of society; aspects in the psychobiography domain help to understand use and acceptance of the virtual extensions of the situated activity domain. The more people have, in their domain of psychobiography, the understanding that situated activities can take place online and that the Internet can be a place for interaction between individuals, the more it is possible to talk about the acceptance of technologies for individual use for communication-related purposes.

As an aspect of attitude towards the Internet, understanding the role of the Internet as the information source can be really important. The Internet as an information channel can be seen as playing a smaller role in the initial learning about the news (in the case of study **I**, crisis news is in focus), but if the individual is an Internet user, the Internet can be important for following up on news themes (study **I**). The Internet is used for information seeking purposes in many instances (studies **III**, **IV** and **V**).

Another important aspect of the Internet is related to the inter-personal and public communication channel. Study **V** helps to understand many some of the attitudes in that area. On a five-point scale of importance Estonians value face-to-face communication (4,7) and telephone or mobile telephone communications (4,0) higher than Internet-related communication channels in which e-mail has the highest score (3,6). It is also significant that many people did not know, in 2003, how to rate a number of Internet related channels, where as many as 66% of people had not used instant messaging channels and 62% had not used chat rooms or did not know how to evaluate them (Study **V**).

In study **V**, different Internet-related channels (surveys in forums, mailing lists and commentaries in online newspapers) were investigated according to their importance for people as channels of self-expression. On average, Internet-

related channels were rated relatively low: the highest average scores were given to surveys and forums on the Internet (3,3) and the lowest scores were for mailing lists (2,9). Many people did not rate Internet related channels in the survey, as many as 44% did not have an opinion regarding mailing lists as opinion expression channels (Study V). Different Internet user types rate opinion-expressing channels differently, showing that specific Internet uses provide a variety of experiences for self-expression.

If we talk about technology-mediated communication in the broader sense, we have to include mobile communication. We can see that calling with a mobile phone is already an accepted means of communication. On the level of importance it is rated as high as the traditional telephone (4,0) (see Study V).

If Internet-related channels are seen as a means to express oneself it is possible to talk about the realisation of the information and communication technologies-related dream of participation (Carpentier, 2003). The aspect of participation is especially vital in digital divide questions, as it must be realised that unless people's psychobiographies contain acceptance of the role of the participation mediator for the technology, the realisation of e-democracies and participation-related ideas will not happen. Closely related to this, are the results of the factor analysis of the information technology-related opinions in study V. The factor of democracy and control indicates the acceptance of the technology for democratic and control-related tasks. The fact that agreement with the statements in this factor is highest among 15–29 year-olds (Study V) shows that among the psychobiographies of the younger generations, the technology is seen as a means for participatory exchanges.

Rogers (1995) shows that the adoption of innovation is strongly connected with the availability of knowledge about it. The domain of psychobiography contains positive and negative attitudes towards information and communication technology, and these attitudes may be revised and changed as can be seen from the results of study VII. One fifth of the non-users does not have opinions about the technology related statements indicates that there is still not enough possibilities to observe people using information and communication technologies (Study VII). Even negative aspects of the phenomena contribute to that knowledge and can help to make (or reinforce) a decision about the technology.

Studying public opinion towards information and communication technologies helps us to understand supporting and opposing factors in society, and have addressed some issues that have become relevant just recently. For instance, in study VII it is possible to see how attitudes towards childhood use of the Internet has been changing. The trend appears to be that very optimistic attitudes towards technology have been replaced with somewhat more critical ones, and that positive and negative effects of Internet use are being evaluated more critically.

Attitudes towards information and communication technologies help us to investigate the public perception about the technology related changes. Study



**VIII** discusses the possible positive influences technology related optimism might have for the developments in the social field. This technology related optimism might be among the reasons why Estonian ICTs related development has been so intensive.

The second discussion related to the domain of psychobiography also contains different individual resources acquired over time. Elsewhere (Pruulmann-Vengerfeldt, 2004; study **III**) I have discussed the economic, cultural and social capitals of Estonian individuals. Economic capital is understood not as money as such, but as what you can do with it. Cultural capital is understood as “form of value associated with culturally authorised tastes, consumption patterns attributes, skills and awards” (Webb *et al.*, 2002 cited in study **III**). Since ideas of social capital used by Putnam (1995) are applied with mixed results (Shah, Kwak and Holbert, 2001; Wellman *et al.*, 2001) the application in study **III** is inspired by Bourdieu (1977: 503 in study **III**) as “capital of social relationships”.

Here my aim is to discuss how technologies might relate to the different capitals. The results from study **III** show that people who are Internet users have, in general, more social, political and cultural capital. It is also possible to see that when people have started using the Internet and specific internet use practices can make a difference in capital compositions; people who have used the Internet longer and people who have used ICTs in a greater variety of ways have more capital.

Since it is not possible to identify causal effects, then one way of interpreting these results is that some people were able to start using the Internet earlier because they had more of cultural, social and economic capital. Using an argument from Rogers (1995), the earlier adoption of innovation is perceived as riskier and requiring more resources and thus possible only by people who have those resources (capital) at their disposal. However, different aspects of ICTs can also be seen to contribute to the capitals.

Information and communication technologies also form important aspects of individuals’ cultural capital. Digital literacy, ICT-related education, the potential to read more widely, and so on, may have positive effects on levels of cultural capital. However, as the key focus of this thesis is on technology–user interaction aspects, it is important to remember that positive aspects may not be realised if the user is not interested. Study **III** stimulates speculation that people with different capital compositions also have different interests in the Internet. In identifying different psychobiography indicators, social, economic and cultural capitals provide important links to the macro level analysis. Different capitals are social resources that help us to understand the interrelations of the different domains. Social capital links together psychobiography, where it can be seen as the resource of an individual, with the domain of situated activity, where social capital helps us to see with whom we can share the situated activity domains. Social capital also stretches to the social settings domain, as social capital is often acquired from stable social interactions and group

belongings. Communication technologies can be seen as aspects of social capital, as they often help to maintain and reinforce relationships between people (e.g. Wellman *et al.*, 2002).

Ownership of information and communication technologies is also related to the available economic capital. People who have more monetary resources can more easily acquire ICTs and have more reasons to employ them in different roles in their everyday lives.

In the third section dealing with the psychobiography domain, I would like to discuss the relationships between technologies and lifestyles. There are three arguments I want to make here — first, to look at the relationship between existing lifestyles and technology use, secondly to investigate the existence of virtual lifestyles, and lastly to explore the relationship between existing lifestyles and virtual lifestyles.

Internet user typologies can be seen as virtual extensions and reflections of the psychobiography domain. The psychobiography of the individual does not change radically in the face of technology, rather, existing psychobiography is taken into the virtual space where it is shaped by and shapes the use of technology. As another aspect of psychobiography, studies **III** and **V** look at how long people have used technology which clearly has relationships with the type of Internet use. It is difficult to find causal relations here, but it is understandable through the context of the domain of psychobiography, which includes, through its dualistic nature, aspects of biographical experiences. Long-time users have more of different kinds of capital (study **III**) and are more versatile in their use than new adopters (study **V**).

In study **VIII**, I use lifestyles as a context for technology adoption situated activity. Lifestyles are understood as patterns of everyday activities that people are more frequently engaged with (Reimer, 1994). Lifestyles are operationalised as a typology of the individuals, based on a cluster analysis of the list of activities surveyed (Nigul, 2004 paraphrased in study **VIII**). We can see that ‘home-centred traditional’, ‘reading and book-centred’ and ‘very passive’ lifestyles do not support the adoption and use of the Internet, and ‘active’, ‘thrill and entertainment oriented’ and ‘new media and socially active’ lifestyles are by contrast more open.

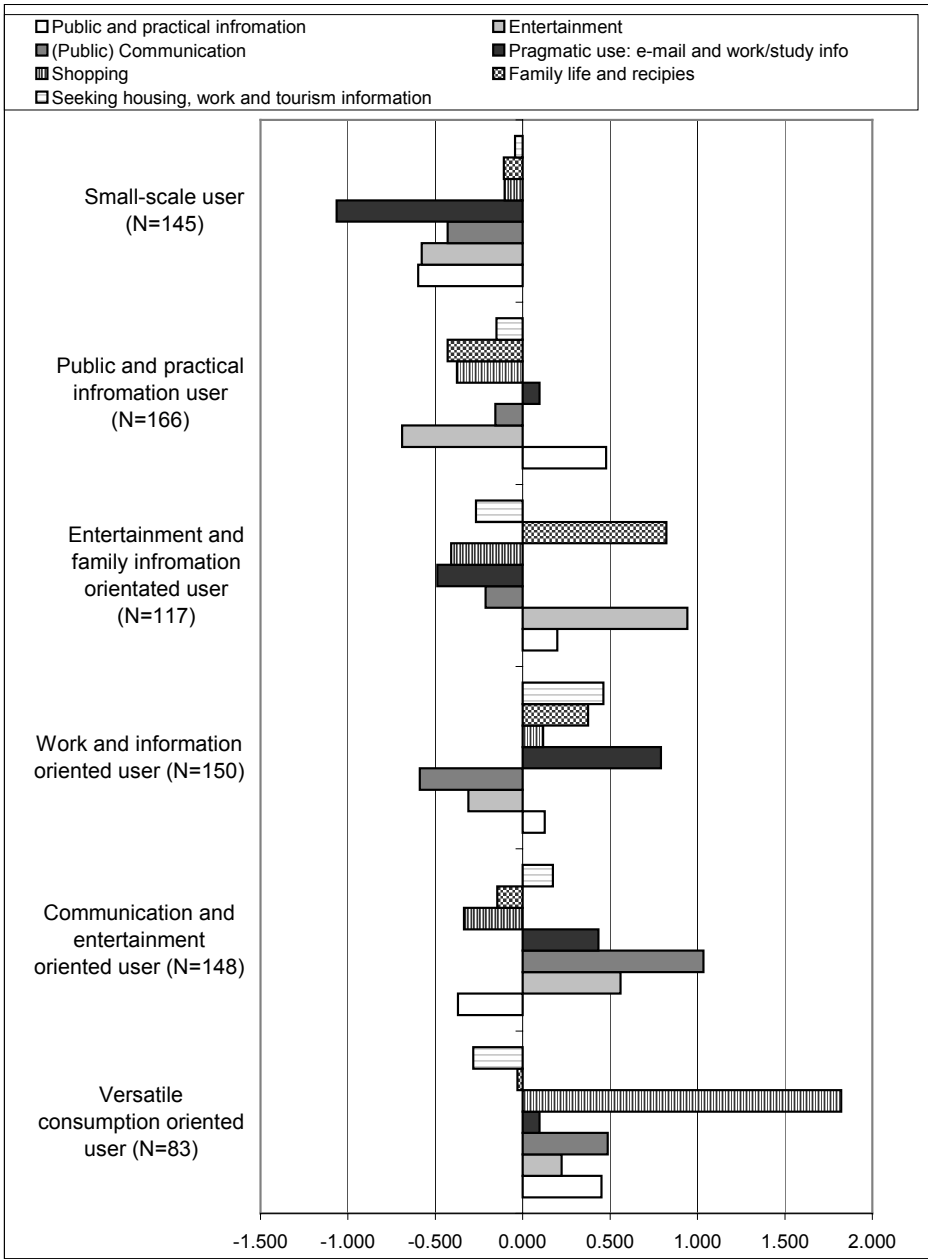
Looking at the lifestyles of individuals gives us a better understanding of their backgrounds at the larger, quantitatively measurable level. Although media ethnography provides in-depth analyses of each particular adoption situation, if lifestyles as quantitative variables are linked with the analysis, an understanding of the technology and individuals interactions may be enhanced. Obviously, a survey based approach does not have the depth and richness of media ethnographies, but in combination, these two methods can still provide a valuable understanding of individuals’ positions and backgrounds from which information and communication technologies are adopted.

I would argue that individuals’ behaviour and activities can be seen as aspects of virtual lifestyles. We are using the Internet in the roles we ourselves

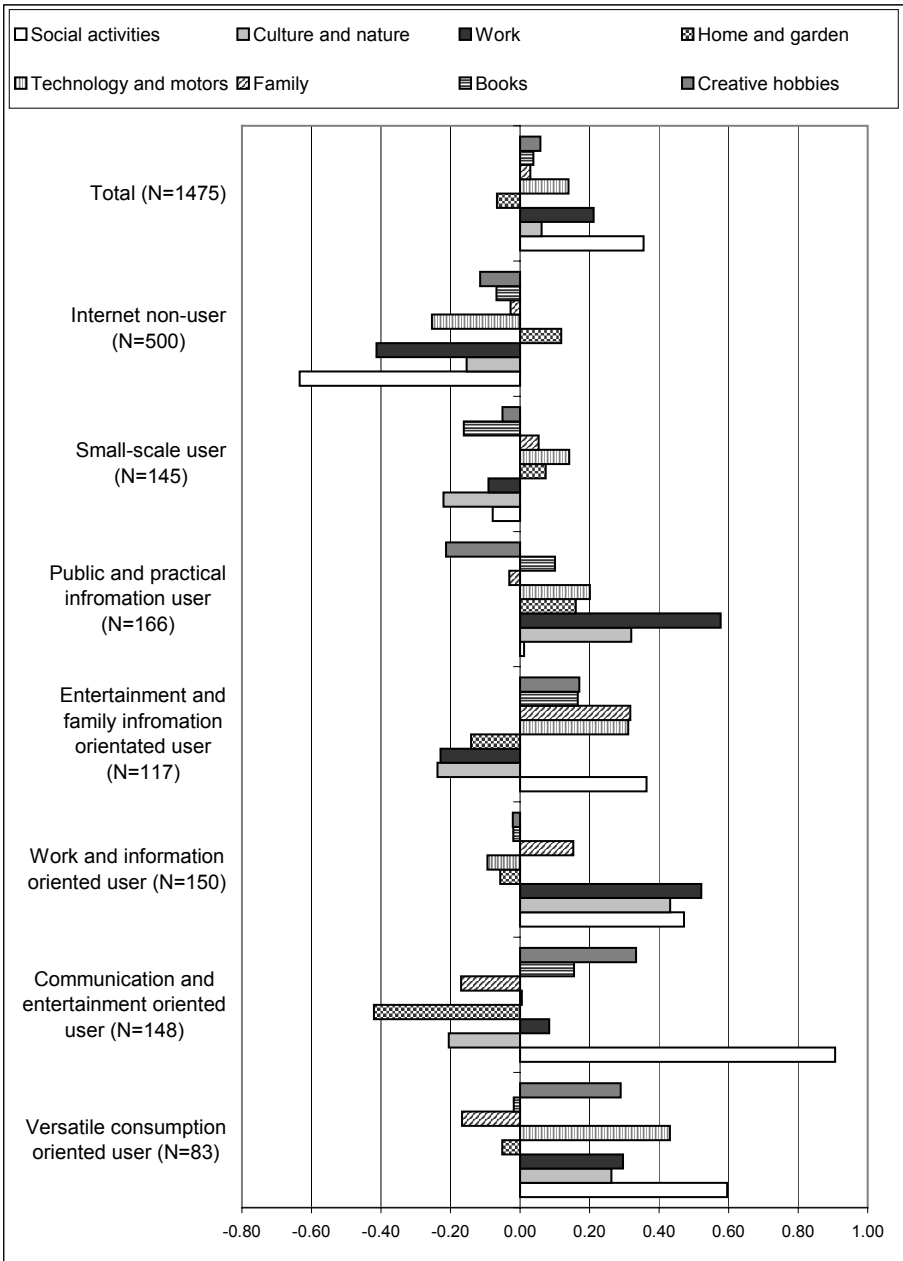
have assigned to it, and in many aspects, these roles form virtual lifestyles. As an example, studies **III**, **IV** and **V** look at the Internet user clusters that were identifiable from the 2003 survey data. Internet user types from 2003 were: ‘Versatile interactive user’, ‘Multiple information user’, ‘Communicator’, ‘Private-life centred services user’, ‘Participator’ and ‘Small-scale user’.

Although Internet user typology from the 2005 survey has not currently been published, I will briefly present the material here. In the appendix, Table 1 gives an overview of different Internet-related activities grouped to different factors. These factors were used as basis for K-means clustering, in order to identify Internet user clusters. Figure 4 gives an overview of the factors comprising different user clusters that can be compared with results from Study **III**. Here we can see that in the almost 3 years that separate the two data collections, and in spite of the fact that more than 20 additional activities were added to the survey, the basic typology of uses is still visible. The most prominent changes are the rise of consumption-related activities among the most versatile users — for them the Internet has gained importance as a place to buy things or to do research on possible purchases. In that sense, the Internet has gained importance as a location of social settings that are related to purchasing. As the activities on the chart are listed on a scale of how frequently people use different services, then another change that can be seen is that people who use the Internet for communication and entertainment are more active than people who use the Internet for work-related activities, compared to 2003 when the trend was the opposite. In the 2005 typology, entertainment and family-related use was more visible, mostly because there were more family-use related questions in the survey.

The overview of users shows that Internet usage on its own is clearly becoming a less important psychobiography factor, whereas the way the Internet is used reflects quite interestingly the disposition of the individual in the virtual domain of psychobiography. It shows that the bridging of the digital divide between users and non-users is clearly not as relevant any more, so more attention is needed on aspects of what people do with the Internet.



**Figure 4:** Factor composition (Appendix, Table 1) of different Internet user clusters (2005)



**Figure 5:** Lifestyle factor (Appendix, Table 2) weights within the Internet user clusters (2005)

To investigate how existing lifestyles and internet usage typologies are related, Figure 5 illustrates data from 2005. Here lifestyle variables are systematized using factor analysis (see Appendix, Table 2) and it can be seen that each Internet user cluster has lifestyle aspects that are more dominant. If we look at the total means of the lifestyle clusters, then we can see that the variance is not large, whereas in comparing different Internet user clusters, the variance increases significantly. Internet non-users have less active lifestyles, as most of the factor means are negative.

When analysing different lifestyle types in connection with the Internet user clusters, we can see that the more active members of society have found suitable activities on the Internet. Through analysis of their lifestyles, we can see that in the Estonian context, in 2005, people who were not using the Internet had a dominant home and garden-related lifestyle factor. One way of providing such people with incentives for using information and communication technologies might be to highlight the benefits to aspects of their existing lifestyles.

Examining existing lifestyles can help us to understand the possible barriers for some people that hinder their technology use. On the other hand, when existing lifestyles are researched together with Internet user typologies (aspects of virtual psychobiography) it can also help to investigate the way people extend their existing lifestyles into virtual space. People use the Internet according to their prior understandings and preferences, to support their existing lifestyles. Another matter of discussion is how lifestyles are formulated together with the technologies, where the younger generation is growing up in social settings where the information and communication technologies are not negotiated, but incorporate aspects of adults' lifestyles. In that aspect, true ICTs-generations are still in formation. The implications for related changes in society have yet to be investigated.

## 4.2 Domain of situated activities

The domain of situated activities deals with interactions with other people in face-to-face situations, but it can also be extended to communicative situations mediated by technology, or where the technology can be considered as an interaction partner. This idea is similar to actor network theory (Latour, 1997; Feenberg, 1999) as it gives an active role to the technology within the society, but still refrains from determinism. The question for this domain is: **What is the character of the technology-related transformations of social interactions?** My aim here is to discuss two types of changes within the situated activity domain that can be related to technology development and to people adopting technologies. First, I would like to discuss the consequences of extending situated activities online, and second, I will briefly discuss the changes in social interactions when the information and communication technologies become interaction partners.

Layder's (1997) analysis concentrates on the situated activity domain in order to justify the importance of face-to-face interactions in general social activities. In his 1993 book, where the main focus is on the different domains as locations for research, Layder talks about situated activity in the context of the dynamics of the interaction. The dynamics of interaction has been the object of study in this research project, in studies **I** and **II**, where I look at the interactions in specific computer-mediated communication settings. Layder (1993) also stresses the importance of researching situated activities, with keen attention on the settings. The distinction between social setting and the situated activity, in discussion of the situated activities, itself is increasingly blurred. Studies **I** and **II** look at the reception and discussion of crisis news in the online environment, and regard the online environment as the setting for news reception and, at the same time, regard the discussions of news as the situated activity.

It is important to understand to what extent and how situated activities are extended to the virtual domain. If, in the domain of contextual resources, the Internet is considered to be an important channel for information provision, but does not feature as the channel in the information environment of the individuals, then macro level information provision can be fairly advanced, but the individual benefits are not noted.

The results of studies **I** and **II** indicate that Internet-based channels can have different roles in the informational context of the people using them. Newspapers and portals provide up-to-date information. Commentaries in the crisis situation are used to acquire complementary information, thus forming the setting of news reception. Talkers and chat rooms provide space for discussion and further analysis of the situation, creating additional news-related situated activities.

A previous study of everyday life in chat rooms (Vengerfeldt, 2001) indicates that news is also discussed in non-crisis situations, although its importance is not so high on the agenda. This shows that news-related situated activities can be computer mediated in the everyday context, thus contributing to the understanding of the content and nature of the situated activity domain.

There are among the transitions that the situated activity domain has been through are the changes towards more written communications. E-mails, SMSs, instant messaging, chat rooms, forums, mailing-lists and so on are used with increasing frequency for interpersonal communication between individuals within larger and smaller groups. This has made more aspects of the situated activity domain written, yet in many of the synchronous communication channels (chat rooms, instant messaging) the underlying nature of the interaction has remained oral. This creates new aspects for the situated activities domain that were worth further investigation.

The situated activity domain itself has lost some of its initial elusiveness, as the result of the increasing number of written situated activity instances. If people meet and talk, then the situated activity domain influences them through those one-time interactions — memories, photos or transcriptions of the domain

can be saved, but the initial interaction moment has passed. In the context of the online environments and computer-mediated communications, the situated activity takes place in writing and the results can be easily stored and referred back to. This also enables the visibility of the domain for research purposes. Analysing the content of online discussions can help for instance to understand aspects of public opinion formation in virtual space.

How the less elusive situated activity domain changes social interactions in the future is yet to be investigated as the generation of people who use the internet mostly for communication related purposes (studies **III**, **IV** and **V**) is young.

The more that the roles and aspects of the social domains are provided, extended and duplicated by information and communication technologies, the more we can expect social and cultural changes to take place. Mobile phones are technologies that have acquired multiple roles in the situated activity domain as they are present as the social setting of many situated activities and they are also partners in communication situations.

The situated activity in Layder's concept is mostly in the presence of the different parties; in the context of information and communication technologies, this presence is increasingly virtual. In study **VI**, attention is on mobile phone use for purposes other than communication. Thus, when in Study **V** the mobile phone can be seen as part of the social setting, mediating situated activities, then in study **VI** the mobile phone can be seen as a partner in the activities.

Study **VI** also provides a tentative classification of mobile phone applications. We can see that the role technology takes in the situated activity can be mediating of transactions or information-related — retrieving or providing. The everyday usage of mobile phones as watches, wallets, cameras or notebooks illustrates the depth and variety of the roles technology can play. We are more used to analysing the roles of computers (e.g. Study **V**, computer-users typology), but as even simple user interface technology like mobile telephony can also have different functions beyond communication and can be an important aspect in understanding social interactions.

### **4.3 Domain of social settings**

Layder's understanding of social settings is diverse — it is important that social settings form the context of situated activities, and that they maintain some of their integrity after the interaction is over. In the context of cybersociety, there have been claims that the computer-mediated communication setting only remains active as long as there are people inside it. Barlovian cyberspace is described as a place where the telephone conversation takes place (Jordan, 1999). Over the years, computer-mediated communication has been researched



as it has formed the social setting for many communities (Jones, 1998; Smith and Kollock, 2001).

The key question for this domain is: **How does information and communication technology-related change establish and influence social settings for the user?** First I will continue the discussion that is closely related to the situated activity theme by investigating what kinds of virtual extensions of social settings can be seen in the computer-mediated environment. Second, I will briefly discuss how different social settings are changed by the acquisition of computers.

I will, in this overview, discuss the findings from studies **I** and **II** from the perspective of computers as settings. In study **VIII**, I have used the example of instant messaging and I will discuss how MSN and other instant messaging technologies are changing social settings. I will also look at the overview from study **IV**, where we can see some of the ways that social settings have changed in the face of information technologies.

The findings of studies **I** and **II** show that even the computer-mediated environment can present different social settings. While news in online newspapers presents and represents the official and institutional view of the events, discussions in chat rooms are more informal. Commentaries in online newspapers also complement the discussions and the social setting is more formal and structured. Chat rooms and Internet Relay Chat (IRC) channels provide a unique opportunity to analyse informal social settings, but the analysis is not intrusive. Studies **I** and **II** provide examples of news reception and discussion in an informal context, illustrating the different roles of these kinds of virtual settings. In study **I** the concept of the traditional sender has clearly changed due to the implementation of ICTs. Internet chatrooms and commentary pages, besides being a source of information, also become gathering points for information and opinions. Study **II** shows people relating personal experiences, finding relief in jokes and sharing the feeling and support of the community through Internet chat rooms.

Study **VIII** uses the example of instant messaging technologies as one possible social setting for interactions between individuals. When we look at the use of instant messaging technologies over the years 2003–2005, we can see the increasing number of people using them. In Table 4.1, we can see how different Internet user groups have different uses for instant messaging technologies. Although in initial applications of MSN and other instant messaging technologies they might have been more used among teenagers as fun communication channels for interactions with each other, now we can see that the percentage of people in each user cluster using instant messaging technologies varies. There are also people whose use is mainly work oriented, but they use instant messaging every day, indicating that this communication tool might have more than purely entertainment value.

**Table 4.1:** Use of instant messaging technologies in different Internet user groups (2005)

	Versatile consumption oriented user	Communication and entertainment oriented user	Work and information oriented user	Entertainment and family information oriented user	Public and practical information user	Small-scale user	Total
No. users	83	148	150	117	166	145	810
Almost every day	31%	47%	24%	27%	6%	1%	22%
A few times a week	21%	21%	16%	23%	11%	2%	15%
A few times a month or less	36%	20%	17%	19%	19%	12%	19%
Never	12%	11%	43%	31%	64%	86%	44%

The computer-mediated communication setting is equally important on the oral and written levels. In discussion of the communication situation, the domains of social setting and situated activity will again be blurred, as one could argue that chatting using instant messaging technologies (or in the future Internet telephones) is inherently located within the situated activity domain as each of these ‘exist’ only between the parties involved in the chat. For instance, elsewhere I have found that chatrooms have their own rules and protocols of conduct which remain intact beyond each situated activity (Vengerfeldt, 2001). This can be an indication that although each chat situation is unique and by definition belongs in the domain of situated activity, environments created by chat technologies belong to the domain of virtual social settings.

A second aspect of changes in the social settings is that in user-technology interaction, the changes can also be brought about within real life social settings. In study IV we argue that when investigating the digital divide and Internet usage, the institutional use of the technology should also be examined. That is because often institutional use can be an indicator of the changing social setting and contextual resources. As an example, study IV looks at how different enterprises use ICTs, in year 2001 24% of the Estonian enterprises use the Internet for marketing their products and 23% for enabling better access to their catalogue products and price lists. This shows that for that one quarter of companies, social settings of making business had been changed by use of ICTs. At the same time 70% of the surveyed enterprises used the Internet to communicate with their clients (Study IV), showing that they have changed

social settings for that kind of interactions by adding Internet as one of the “places” where client communication can take place.

As another example, we can see how usage of ICTs has influenced the social setting of media consumptions. The study **IV** analyzes new media from the point of view of media systems, showing how the traditional media was among the first to go online and through online newspapers, radio and television changed the social setting of media reception.

An aspect of study **IV** looks at the public and private use of new media from the institutional aspect. Here the boundaries between social settings and contextual resources are even more blurred, but, for instance, in the public sector the use of new media technologies has provided additional communication channels and opportunities for communicating with governed subjects. As by definition the laws governing municipalities and their information provision belong to the contextual resources domain, at the same time the actual websites providing the information are changing the social settings of the people through changing the environments where interactions with governing municipalities take place.

Schools and educational institutions are an important aspect of social settings. Study **IV** presents data from 2001 relating to the availability of information and communication technologies in school. We can see that already for a number of years, information and communication technologies have been available. The question for another investigation is to see to what extent these technologies are being used in the classroom setting and what kinds of further changes have occurred.

Study **IV** also gives an overview of information technology use in the private sector. This is important because the workplace is often the place where computers are first used and accessed — providing the necessary social setting for technology adoption processes. Enterprises that are connected to the Internet create their own virtual social spaces that people can use — for information retrieval, transactions and purchases. Study **IV** discusses the particular role of banks in the development of the Estonian information society, as they can be identified as having an important influence in advancing Internet use and creating meaningful content for virtual social settings. Banks have strong connections with Estonian ICTs market, as they have been investing in this sector, providing jobs and buying services from developers. Banks have helped creating meaningful content for the Internet users and also provided gateways to other Internet-services (Kerem, 2003 in Study **IV**). Through sponsorship in public-private ICTs training partnership initiatives and training in bank offices, people have been provided with first-hand experiences of Internet use encouraging Internet adoption.

Private enterprises through the provision of social settings and marketing their use create incentives to use information and communication technologies. We can also see from the virtual lifestyles (discussed in section 5.1) that people are increasingly ready to adopt online shopping as an aspect to be incorporated

into their lifestyles. Social settings created by private enterprises are used increasingly by Internet users.

Although study IV has shown many ways that public and private institutions create virtual social settings, only looking at the psychobiography domain, social, cultural and economic capital (study III) and attitudes and opinions (study V) helps us to understand some of the aspects that hinder or support the use of these domains. The factor analysis of different attitudes (study III) shows attitudes summarised under the heading 'fear': "Using computers and Internet scares me" and "Internet alienates people" are most significantly represented in the older age group (factor score 0,28). The highest income group and youngest age groups disagree most with the attitudes summarised under the category 'fear' (factor scores respectively -0,21 and -0,17) (study III). This shows that people who might benefit most from the possibility of doing online shopping or online transactions are the most afraid of these possibilities, whereas people who have more resources are more readily to accept these options.

#### 4.4 Domain of contextual resources

The domain of contextual resources is understood as a set of rules, regulations and institutions that govern the whole society. The institutional aspect is governed by mediating institutions of government, business, media and cultural institutions. The focus for this section is: **How do institutional aspects influence the contextual resources of the user-technology interactions?** Illustrative elements of institutional aspects have been given as the context for understanding the results of seven of the eight studies. The discussion about contextual resources is about political and policy related issues, private institutions and media.

The relatively fast developments of the technology-related contextual resources domain of Estonian society rely on many different factors. The political influence has been briefly discussed in study VIII. Estonian information policies have been generally aimed at technological advancement. Less attention is paid to social uses and the integration of information and communication technologies in everyday life (Veenpere, 2004). Information policies can be seen as messages which aim to show why information and communication technologies are good for people and what benefits they bring. Different available skills and public information are also important aspects of the information policy that reinforce the role of the mediating institutions. Information policy has over the years become more concrete, looking at possible interactions between information policy and other policies. The problem with Estonian technology-related contextual resources is that there is no single governing institution, but several different entities between which lies the implementation of information policy. Therefore, the communicative aspect that

would bring the understanding of contextual resources closer to users and non-users of the technology is often lacking.

As discussed above, banks have been the most active institutions influencing both social settings and contextual resources in Estonia. Study VIII also discusses the role of the changing banking system on the developments of contextual resources. In the context of user-technology interactions, banks have taken active roles in training future Internet users (study VIII) and giving them cost-related incentives to use Internet banks.

In the area of mobile services, public and private institutions have operated together to provide a wide variety of services that form social settings in the mobile communications area (study VI). Here again contextual resources and social settings are strongly interconnected, as mobile services are becoming social settings for users, but the institutions that have initiated them are within the domain of contextual resources.

Another institution that has been important in influencing contextual resources related to influencing public opinion and beliefs is the media. Study VIII also discusses the importance of media research and the fact that media are very much under-researched when it comes to the portraying of information and communication technologies. Media is an important factor in shaping the domain of contextual resources, as the mediation of the society is increasingly important. Kanger (2005) discusses the difficulties related to the investigation of the term ‘information society’. He notes that the concept of the information society is considered self-sufficient, that it does not need further definitions and that it is considered applicable to Estonian society. This kind of approach strongly influences the social context of individuals. The main themes in the Estonian newspapers were technology and economy centred (Kanger, 2005), showing that if we consider the media as a reflection of contextual resources in Estonian society, then we can see that contextual resources are focused on providing the technology, but not so much in providing the support for the technology users.

When investigating Internet users, we also have to take into account institutional users as they are important agents in providing contextual resources for individual use. Public authorities that provide public services online and private enterprises using the Internet for e-commerce form aspects of virtual contextual resources.

There are many more different aspects within the contextual resources domain that have been studied elsewhere, for example, international comparisons between different countries (study IV), but as these studies are less concerned with the user aspect of the technology–user interactions and more concerned with the economic and technological aspects, I will not discuss those studies further.

## 5. DISCUSSION

The user–technology interaction is the focal point of research within each of the domains and it is vital to remember that neither of these should be seen as the driving force of the other. Interactions where individuals as well as technology are actors are instead considered to be places where changes in society happen. Through changes in practices of individuals, sooner or later, things also change on other levels of the social domain. This thesis has investigated sociological factors (e.g. technology as an aspect of lifestyle, social processes in the online environment) that can be seen in social processes today. Because we have not had these technologies in our everyday lives before in history, we can argue that these are some of the changes in our social lives.

The comparison of lifestyles of Internet users and non-users done here does indicate that there are changes in the social fabric that are related to information and communication technologies. We are not, in this case, measuring the number of home computers or the availability of the technologies in particular settings. Instead, by looking at how people live, we can see that information and communication technologies, such as computers, the Internet and mobile phones, have different roles in individuals' everyday lives.

The fact that technology and its users are in interaction, enables us to talk about the changes at the individual level that can bring about changes at the social level. Instead, this thesis has aimed to take actual social processes as the focus and, through them, discuss some of the possible changes that have taken place. The changes are not directed by the technology, but are brought on by the individuals themselves. This shows that there are many problems with information society discussions; as they are inspired by common technologically determinist view of thinking, they do to account for individual choice.

The focus of this thesis has been on the individual. It is, however important to note that the individual operates within the information environment and brings with them all the other social domains. At the same time, the social domains are changed, because the individual operates within them. Thus, from an analytical point of view, this interaction has enabled me to discuss social processes through the lens of the individual.

Figure 7 summarizes the results of the studies by giving an illustration of technology–user interaction within the different social layers of the information environment. We have seen changes in lifestyles in the domain of psychobiography where technology has been incorporated with particular lifestyle aspects and not with others. Internet user typologies can be seen to have traits of virtual lifestyles, as they reflect the individual's behaviour outside information and communication technologies.

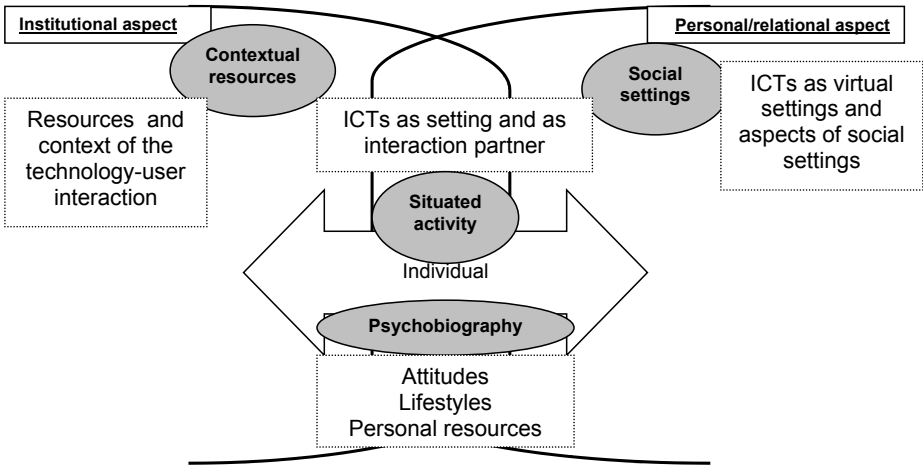
Information and communication technologies have inspired many beliefs and attitudes in society, which are being, to differing extents, agreed with by individuals. Many of these attitudes are undergoing changes as technology–user interactions are still in flux.

Information and communication technologies form many aspects of personal capacities. Investigations of capitals has shown that the interaction is twofold — people with more economic, cultural and social capital are more able to find different uses for the Internet, but ICTs can also support the formation of additional capital through mediating knowledge and social contacts. This, however, cannot be assumed, as the uses people make of the technology are connected with many different aspects of social life.

The situated activities domain consists of three aspects: who is communicating, where they are doing it and what they are communicating about. We have been investigating technology-related changes in two of those aspects. Technology has become a partner in many of the interactions in Estonia. I have also discussed the implications of the technology as a context for these situated activities, namely the written nature of the interactions and diminished elusiveness of this domain. There is less discussion about the content of the situated activity domain, although we can see that there are more formal and informal situated activity possibilities in virtual space.

Information and communication technologies also play a role in the formation of social settings, as many of the interaction locations of the virtual situated activity domain have become social settings for group meetings. Interaction with ICTs also influences existing social settings as they can be used to justify and reinforce some of the processes.

Contextual resources have been discussed from the policy, media and institutional context. Most of the influences are on the social settings and situated activity domains through which people have connections with the institutional aspects of social life.



**Figure 6:** Technology and user interaction within the different layers of the information environment

Looking at differences in Internet use, we can determine that Internet use does not stand apart from existing psychobiography elements. Instead, based on our individual personality and biography, we inhabit the Internet to suit our preferences. The complexity and multiplicity of information and communication technologies enables individuals to choose different uses and applications. For some, the Internet is merely a tool to perform certain actions or to seek some particular sort of information, to others the Internet is a virtual social setting.

The discussion of technology–user interactions goes in parallel with discussions of the digital divide. Carpentier (2003: 101) identifies the core of the political digital divide discourse that is based on importance of access, increased levels of information, communication and other socially valued benefits through used of technologies and lack of access and use will result in dichotomous society of ‘haves’ and ‘have-nots’. Through these we can see that information and communication technologies are given symbolic power to bridge differences in an otherwise divided society. Regarding social, cultural and economic capitals, we can ascertain that even though Internet users have more of those capitals, we cannot conclude that this is a benefit of Internet use. Rather, we can say that people with less capital are adopting information and communication technologies at a slower rate of uptake and as the numbers of Internet users increase so Internet usage reflects the divisions and variations of society.

When locating the changes in the domain of situated activities, the discussion must be on several levels. We talk about situated activities that take place in the computer-mediated environment. Here the computer-mediated environment becomes the social setting for the situated activities, providing visibility and stability. When Layder (1997) discusses situated activity, he suggests that it is elusive and unstable as it consists of individual conversations. The domain of situated activities mediates domains of psychobiography and social settings, impressing and changing both of them. In the virtual extension of the situated activities domain, due to the written nature of the domain, some of the elusiveness disappears. In that context, online forums and commentaries become visible places, and examples of the formation of some aspects of public opinion. Chat rooms, instant messaging or IRC channel discussions and other situated activities in the online environment that are synchronous and immediate in time, often have their discussions logged and saved by individuals or groups for future reference. Emails, forums, mailing lists and other asynchronous online communication tools maintain traces of the communication, either in the personal or the public domain. The influence of these processes on interpersonal communication and social relationships should be investigated further, especially as the generation that is most used to technology-mediated communication is still growing up.

Characteristics of public opinion are formulated in such written discussions of the situated activity domain and are maintained for future reference. Aspects of human nature that are exaggerated are quite commonly found in the virtual



situated activity domain (perhaps because parties in the virtual domain do not face the same constraints found in non-virtual domains) and may seem rude and make participants feel ignored or attacked. In Estonia, this ‘publicness’ has raised a discussion about regulation of the virtual activity domain (<http://www.leim.ee>). The visibility of the situated activity domain is unique and any discussion about its rules and regulations is welcome; however, the discussion has been overblown. Self-regulation mechanisms at the level of each individual situated activity context may be more appropriate, but need time to be fully established.

The situated activity domain can also be analysed and discussed in the context of changing interaction partners. As discussed above, the parties of the virtual situated activity situations are aware of each other, but are not in each others’ immediate presence. Increasingly one party in the domain is non-human, being a computer, mobile phone, information system. When we analyse the different roles technology can take in society and the different functions it performs for the individual, we can understand some of the changes in the situated activity domain. Technology as an active partner in the situated activity is not an entirely new phenomenon, but the extent to which technology can perform as an active partner is significantly different now, compared to a time when information and communication technologies were not yet adopted as parts of everyday life.

We can within the social setting domain discuss the role information and communication technologies-related activities plays in changing the social settings. In that sense, if we consider technology as an actor, then organisational structures, work loads or organisational cultures are influenced by (and are an influence on) interactions with such actors. All technologies, in that sense, from tools to workbenches to computers, participate in interactions, changing and being changed by the social setting domain. Sometimes technology assists in imposing practices or conducts that change the power relations in organisations. In that respect, changes in society are measurable quantitatively by counting the numbers of computers in workplaces and public organisations. However, this kind of assessment does not give indications of the various sorts of roles computers play within these organisations. Thus, further indicators and qualitative analyses are required, in order to fully understand the ways social settings operate. Using social theory as a framework has helped to indicate many additional locations and contextualisations needed for technology–user interaction research.

The domain of social settings can also be virtual. We can investigate two types of virtual social settings. On the one hand, we can look at virtual social settings that are extensions of existing social settings — the virtual tax office, virtual shops or other public or private institutions that have virtual spaces with information, communication, distributions or transactions (Angehrn, 1997). On the other hand, we can also look at social settings that have been created within the virtual environment — different online communities that form in forums,

chat rooms, IRC channels and MSN discussions. Virtual online communities are close to the borderline of the situated activity domain and social settings, as the written nature of these communities gives them a stability that oral communication situations do not have; however, they are still mostly used for informal person-to-person interaction.

The political information society concept that has dominated the contextual resources of technology-related aspects for Estonian individuals is in many aspects problematic. The information society is not a new kind of society, but an aspect of current social processes. Keeping this in mind helps us to understand information and communication technologies-related changes — as discussed before changes are not initiated by the technologies, but are formed in interaction with them. The information society concept as it is used currently is far too technology and economy oriented and does not pay enough attention to actual social processes. Should we try to change the information society concept to be more attentive to individual and everyday life, or would it be more useful to find other concepts to explain social changes? My thesis argues that there are changes that are visible and investigatable on the individual level. Social structures are stable and rigid in many aspects and, therefore, further analysis and discussion is needed in order to either add substance to the information society term or to be able to have another name for the social processes. Individual changes have to be linked back to social analysis, in order to investigate and discuss, with conviction, the changes in society.

Investigation of the domains enables us to monitor minor changes that take place in the social life and everyday practices of individuals and to connect those changes to larger macro level processes. Quantitative surveys are not always the best ways to monitor changes that can be very small; however, the quantitative approach does help to assess larger processes in society, also taking the individual and their lifeworld as the starting point and focus. Qualitative research methods — interviews and text analysis — help to study other aspects of the individual life for which surveys are too general a tool. A combination of different methods: surveys, interviews and text analysis, can give the best results in analysing multilayered aspects of social life.

The micro level analysis of the individual shows stability and persistence — that technology is incorporated and domesticated in the existing lifestyle context is just one of many aspects that influence its development. The information and communication technology is often used as a tool to realise existing interests and lifestyles, as can be seen by the existence of the different Internet user types. Minor changes in lifestyle that come from negotiations with technology do change overall social patterns. Therefore, future studies are needed to better understand the different levels of the changes within all social domains. An analytical approach that takes into account the different layers of all social domains is a valuable way to proceed with the analysis of technology–user interactions.

## 6. CONCLUSIONS

The aim of this study has been to investigate technology users and uses within the different layers of the information environment. The data presented in the empirical section of the thesis, and in the following studies gives a sample of the possible aspects. It shows some notions and ideas about the possible nature and locations of these changes. The theory of social domains and the information environment are taken as the framework to summarise the different aspects of technology–user interactions presented in the eight studies comprising this thesis. Each of these studies provides results regarding the particular domains and performs as an indication of possible research points. I will summarise the main conclusions by coming back to the initial research questions posed in the preface of this introduction and then supporting that with the results on each of the sub-questions.

The conclusions for the two main questions are as follows:

**(1) What are the social implications of user-technology interaction within the different layers of the information environment?** The empirical analysis of individuals' interactions with information technology shows that there are changes in individuals' lives and social life that can be associated with information and communication technologies and located within different social domains. Instead of universal transformations, technology related changes are based on the different individual application influenced by attitudes, lifestyles and capitals. Institutions apply technology to form social settings and influence the contextual resources of the individuals. The situational activities domain that mediates contacts between individuals and also institutions has technology as a partner or as a context of the interaction.

**(2) How are different social domains extended into virtual space?** The empirical analysis of social domains has shown that different social domains have extensions into virtual space that do not form a separate society, but are aspects of the same social domains in virtual computer networks. Virtual extensions of the domains need maturation and clarification, as interactions with the social world are continuing to form.

**We can conclude by analysing how information and communication technology participates in the formation of the psychobiography domain that:**

- Analysing the domain of psychobiography leads us to locate different attitudes, values and changes in the practices that enable people to deal with information and communication technologies through using them in different functions (studies **III**, **IV**, **V**, **VII** and **VIII**).
- Internet and computer-related beliefs are a reflection of people's acceptance of these technologies as communication channels and as channels for opinion expression (studies **V**, and **VI**).

- The Internet and computers are commonly used as news and information channels, for learning about the news and even more for following the news and for seeking information (studies **I** and **V**).
- Social, cultural and economic capitals give additional dimensions to analysis of the psychobiography domain of individuals. However, although the current level of analysis does not enable us to see causal relations between Internet use and the level of capitals for the individual, we can still see strong relationships (studies **III** and **V**).
- Information and communication technologies also form aspects of social capital through providing communication opportunities between friends and acquaintances and facilitating the formation of support groups. ICTs also support cultural capital development through providing additional sources for information and education. However, using the technology is still related to their existing levels of capital (study **III**).
- Internet user typologies or virtual lifestyles help us to better understand the multifaceted nature of Internet use and virtual extensions of the psychobiography domain (studies **III**, **IV** and **V**).
- Lifestyles are connected with technology use as they form the context within which technologies are adopted and influence which aspects of technology we enjoy most (study **VIII**).

**The technology-related transformations of social interactions that were found were:**

- The situated activity domain changes and becomes less elusive — its written traces in virtual settings provide the domain of situated activity with stability and analyzability, which enables us to gain a better understanding of the roles it has in opinion formation and other social functions (studies **I** and **II**).
- Information and communication technologies have become partners in the situated activity domain for individuals, for some aspects of institutional communication (studies **IV**, **V** and **VI**).

**The following changes within the established social settings and some of the new social settings related to technologies were identified:**

- The social settings domain can have extensions into the virtual space. In addition, the technology can influence conduct in the existing social settings (studies **I**, **II**, **VI** and **VIII**).
- Virtual social settings have different natures, depending on whether they are informal channels or associated with institutional channels (studies **I** and **II**).

- Instant messaging technologies have changed from informal playful communication channels to channels that can have a variety of roles for different users (study VIII).
- Online situated activities are on the border line of becoming social settings; if they have been established for a long period, they tend to have their own rules and protocols (study II).
- Through their use of technologies, different institutions provide various virtual settings for users, providing incentives for technology use and changing conduct in and protocols of social settings (studies V and VI).
- Attitudes within the domain of psychobiography influence the use of technology-related virtual social settings.

**Some of the ways in which the institutional aspects influence the contextual resources of user–technology interactions were identified as:**

- Estonia has had information society policies since 1994; these have mostly been technology and economy oriented. Policy influences are stronger within the context of institutional aspects and less so towards the individual.
- Banks have played an active role in providing contexts for online activities as well as incentives for individuals to start to use information and communication technologies (studies IV and VIII).
- There are a number of mobile services provided by public and private institutions that mostly use mobile phones to enable people to communicate with the institutions. In this, the mobile phone is both a partner in the communication and a mediator of the communication (study VI)
- The media are playing an active role in influencing public perceptions about information and communication technologies. Estonian media have focussed mostly on technological and economic aspects of user–technology interactions and not so much on user aspects (study VIII)

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## APPENDIX

**Table 1: Factor analysis of different Internet uses (N=975), 2005**

	Public and practical information	Entertainment	(Public) Communication	Pragmatic use: e-mail and work/study info	Shopping	Family life and recipes	Seeking housing, work and tourism information
Political information	0,701		0,207				
Economic and financial information	0,639		0,103	0,201			
Legal information	0,638		0,115	0,115	0,159	0,139	
Reading newspapers	0,580		0,124			0,152	
Information about public offices	0,572			0,351	0,161	0,131	0,279
Weather information	0,514	0,271				0,248	
Communicating with public offices	0,492	-0,113		0,479	0,198		0,201
Bank transactions and information	0,462			0,232	0,170	0,110	0,266
Tax and other official forms	0,405				0,199	0,104	0,299
Buying products, comparing goods and prices	0,326	0,153	0,153	0,167	0,308	0,147	0,198
Downloading music		0,848	0,224	0,152			
Downloading movies		0,829	0,189				
Uploading photos		0,647	0,267	0,258		0,124	
Playing online games		0,463	0,228				0,104
Listening to Internet radio	0,191	0,446	0,188	0,134		0,139	
Reading jokes and comics	0,218	0,436	0,220			0,162	
Instant messaging		0,430	0,314	0,366		0,123	
Seeking bus and train information	0,171	0,358		0,322		0,239	0,164
Watching TV via the Internet	0,191	0,348	0,163			0,241	
Communicating in chat rooms		0,347	0,347			0,181	0,196
Dating services		0,316	0,206		0,160	0,111	0,198
Writing online commentaries		0,327	0,727				
Communicating in online portals, reading comments	0,250	0,218	0,665	0,101			
Reading and commenting on blogs	0,100	0,239	0,594	0,114	0,160	0,133	
Communicating in forums		0,314	0,590	0,205	0,116		0,114
Participating in online polls		0,208	0,561	0,205	0,129		
Writing one's own blog and homepage		0,200	0,322		0,151	0,172	
Erotica	0,171	0,195	0,318		0,176	-0,149	0,170
E-mail	0,276	0,187	0,185	0,655			
Information related to studying	0,154	0,161	0,160	0,556			
Mailing lists	0,199	0,143	0,197	0,542	0,148		
Information related to profession	0,515			0,520			
Seeking hobbies related information	0,259	0,201	0,257	0,273	0,133	0,191	
Using library services	0,165	0,215		0,284		0,143	0,177

	Public and practical information	Entertainment	(Public) Communication	Pragmatic use: e-mail and work/study info	Shopping	Family life and recipes	Seeking housing, work and tourism information
Buying from online shops	0,156				0,813		
Participating in online auctions		0,105	0,148		0,576		0,126
Ordering books and magazines	0,110			0,191	0,575	0,156	
Buying tickets	0,205			0,372	0,433		0,227
Sending a fax over the Internet	0,199	0,166	0,147	0,140	0,296	0,119	
Information related to family and children	0,154					0,693	0,134
Medical and health information	0,288	0,116			0,108	0,653	0,178
Seeking recipes	0,124	0,189				0,619	
Seeking housing (flat, house)	0,188		0,115		0,191	0,215	0,408
Booking a hostel, hotel or car for travel	0,216		0,109	0,274	0,373		0,387
Tourist information	0,273			0,292	0,232	0,173	0,315
Seeking employment		0,216	0,157		0,188	0,171	0,250

Extraction Method: Principal Axis Factoring.

Rotation Method: Varimax with Kaiser Normalization.

<sup>a</sup>Rotation converged in 14 iterations.

**Table 2. Factor analysis of lifestyles (N=1475), 2005**

	Social activities	Culture and nature	Work	Home and garden	Technology and motors	Family	Books	Creative hobbies
Going to restaurants, cafes, bars	0,739	0,208	0,146					
Going to clubs, raves, discos	0,725						-0,115	0,128
Having good times among friends	0,602	0,125	0,115	0,135				
Watching movies from (video, dvd, computers)	0,555			-0,124	0,294		0,159	0,222
Going to movies	0,532	0,380		-0,115				
Computer related hobbies	0,530		0,151	-0,135	0,241		0,116	0,175
Training, sports, gymnastics	0,484	0,176	0,224		0,108	0,141		0,136
Visiting friends and relatives	0,442	0,109		0,215			0,151	
Taking care of ones looks (massage, beauty salon, solarium)	0,436	0,172	0,134		-0,158	0,354		
Travelling	0,419	0,410	0,237	0,117	0,175			

	Social activities	Culture and nature	Work	Home and garden	Technology and motors	Family	Books	Creative hobbies
Photography, filming, recording videos or music	0,392	0,116	0,143		0,344	0,136		0,307
Gambling (Casinos, slot machine)	0,285						-0,102	0,145
Going to the theatre	0,225	0,641	0,195	0,179			0,110	
Going to classical music concerts	0,119	0,598				0,100		0,198
Going to exhibitions		0,587	0,188	0,107			0,188	0,155
Going to jazz, folk, rock concerts	0,389	0,400	0,141					0,131
Camping, trips to nature	0,218	0,296	0,186	0,165	0,181	0,161	0,180	
Attending seminars, workshops, conferences	0,242	0,288	0,786					
Attending work meetings	0,188	0,225	0,691	0,107				
Reading work related literature	0,130	0,305	0,388	0,106	0,179		0,386	0,147
Cleaning and home decorating				0,576		0,424	0,140	
Gardening	-0,230	0,108		0,570		0,206		
Renovation and building				0,521	0,362	0,147		
Handy-craft				0,417		0,179	0,188	0,334
Lotto	0,250			0,266				0,139
Technical hobbies (including cars)				0,101	0,753	-0,120	-0,143	
Car and boat rides in free time	0,331			0,106	0,596	0,109		
Taking care of family and relations	0,114			0,162		0,678		
Activities with children			0,116	0,199	0,130	0,449		
Preparing food				0,256	-0,229	0,431	0,187	
Going to church and religious meetings	-0,156	0,233				0,255		
Activities with pets	0,112			0,171		0,172		0,104
Reading fiction		0,185				0,133	0,716	
Going to libraries	0,120	0,182	0,160		-0,186		0,468	0,139
Solving crossword puzzles				0,241		0,146	0,283	0,122
Drawing and painting	0,260	0,107						0,613
Collecting	0,102	0,174			0,102		0,113	0,431
Playing music, singing	0,325	0,227	0,159			0,153		0,327

Extraction Method: Principal Axis Factoring.

Rotation Method: Varimax with Kaiser Normalization.

<sup>a</sup>Rotation converged in 10 iterations.

## SUMMARY IN ESTONIAN

### Infotehnoloogia kasutajad ja kasutusviisid Eesti infokeskkonna eri kihtides

Info- ja kommunikatsioonitehnoloogiate (IKT) kasutajate ja kasutusviiside uurimine on viimastel aastatel järjest enam hoogu kogumas. Valdkonda iseloomustab erinevate distsipliinide ja meetodite paljusus. Teemaatikaga on Eestis siiski doktoritöö tasemel vähe tegeletud ja antud väitekiri on panus valdkonna uurimisse ja edendamisse Eestis.

Käesoleva töö eesmärgiks pole välja selgitada, mida info- ja kommunikatsioonitehnoloogiate kasutamine teeb inimesega; selle uurimuse keskmeks on inimesed, sotsiaalsed käitumised ja suhted erinevates infokeskkonna kihtides. Tehnoloogiat käsitletakse kui tööriista, keskkonda, vahendit ja vahendajat, mitte kui eesmärki omaette. Inimeste igapäevaelu vaadeldakse läbi infokeskkonna prisma, jaotades see üksikisiku tasandiks, suhete tasandiks, personaalseteks ja institutsionaalsetesk aspektideks (Joonis 3) (Lievrouw, 2000, 2001). Paralleelselt kasutatakse samade elementide analüüsiks sotsiaalsete kihtide mõistet (Layder, 1993, 1997).

Antud doktoritöö peamiseks eesmärgiks on: **analüüsida infotehnoloogia kasutajaid ja kasutusviise infokeskkonna erinevates kihtides**. Väitekiri koosneb kaheksast IKT kasutusviiside ja kasutajate uuringust, mille kaudu sissejuhatuses analüüsitakse erinevatel ühiskonna tasanditel toimuvais muutusi. Uurimuse fookuses on üksikisikud, situatiivsed ja sotsiaalsed aspektid suhtes tehnoloogiaga. Tööl on kaks suuremat uurimisküsimust: (1) **Millised on kasutaja-tehnoloogia interaktsiooni sotsiaalsed tagajärjed erinevates infokeskkonna kihtides?** (2) **Kuidas erinevad sotsiaalsed kihid laienevad virtuaalsesse ruumi?**

Väitekirja sissejuhatuses on ülevaate akadeemilisest kontekstist, kuhu uurimus asetub. Töö keskendub Eestile, kus info- ja kommunikatsioonitehnoloogiatest rääkimine on seostatud sageli 'infoühiskonna' nimelise nähtusega. Antud doktoriväitekirja kontekstis on see mõiste kasutusel kui avaliku ja poliitilise retoorika element, mis raamistab ühiskonda, milles toimuvad protsessid on antud uurimisprojekti vaatluse all. Käesolev töö ei ole nõus 1994. aastal esitatud infoühiskonna definitsiooniga, kus ühiskondlikud muutused allutatakse tehnoloogilistele arengutele (Eesti Informaatiikanõukogu, 1994) ja seega pole eesmärk mõõta seda, kui kaugele on Eesti oma arengus infoühiskonda jõudnud. Pigem püütakse analüüsi käigus leida üksikisiku ja igapäevaelu tasandilt muutusi, mille olemasolu annaks vajadusel võimaluse rääkida ka suurematest ühiskondlikest muudatustest.

Rääkides infotehnoloogiate, üksikisikute ja ühiskonna vahelistest suhetest on tihti peale küsimuse all ka nende omavaheliste mõjutuste suund. Töös ei pooldata tehnoloogilise determinismi vaateid, sest sellise vaatenurga järgi pole

inimestel ega ühiskondlikel protsessidel tehnoloogia mõjutamise võimalust. Uurimus keskendub aga kasutajate ja tehnoloogia vahelisele interaktsioonile, sobides seega kõige paremini esindama neutraalse tehnoloogia seisukohti, kuid töö on ka sotsiaalse konstruktivismi mõjutusi (Wyatt, 2000).

IKT kasutajatega tegeleb digitaalse lõhe paradigma, kuid kuna antud töös on tehnoloogia positiivne mõju kriitilise vaatluse all, siis on pigem fookuses tehnoloogia kasutuse mitmekülgus, mitte eristus kasutajate ja mitte-kasutajate vahel.

IKT kasutajatega ja kasutusviiside mitmekülgusega tegelevad ka domesti-katsiooni uuringud, kuid antud käsitlus erineb neist mitmes olulises aspektis. Esiteks ei ole fookuseks IKT kasutamine mingis konkreetses kasutuskontekstis, vaid selle kasutamise ilmingud erinevates sotsiaalsetes kihtides. Teiseks olu-liseks erinevuseks on üksikisikute kasutuse massitasandi analüüs, mitte etno-graafilistel meetoditel põhinev lähenemine.

Disseratatsioon koosneb kaheksast eelretsenseeritud artiklist ja sissejuha-tavast tekstist. Iga üksiku publikatsioon eesmärgid on küll olnud erinevad, kuid nende tulemusi analüüsitakse sissejuhatuse raames inimese ja tehnoloogia vaheliste suhete individuaalsetest ja sotsiaalsetest ilmingutest lähtuvalt.

Artiklid kasutavad erinevaid andmeanalüüsi võtteid ja erinevaid andmeid, toetudes peamiselt kolmele suurele üle-eestilisele küsitlusele (**III–VIII** uurimu-sed); ja ühele mitme-meetodilisele uurimisprojektile, kus analüüsitakse küsi-mustike, intervjuude, meedia- ja *online*-tekste (**I** ja **II** uurimused). Lisaks on artiklites käsitletud empiiriliste andmetena meediaanalüüsi (**VIII** uurimus), tudengite esseesid (**VI** uurimus) ja statistiliste andmete teisest analüüsi (**IV** uurimus).

Töö sissejuhatuseks esitatud teoreetiline raamistik käsitleb Derek Layderi sotsiaalsete kihtide teooriat ja Leah Lievrouw infokeskkonna teooriat. **Teoree-tiline lähenemine on valitud põhimõttel, et ühiskonna uurimine nelja eri-neva kihi: psühhobiograafia, situatiivsete tegevuste, sotsiaalse keskkonna ja kontekstuaalsete ressursside kihi kaudu annab hea võimaluse leida olulisi muutusi, mis võiksid olla põhjustatud inimese-tehnoloogia suhetest.** Info-keskkonna teooria väärtuseks on ühiskonnaprotsesside dünaamika ja kihtide vahel toimuvate sotsiaalsete protsesside parem selgitamine. Sissejuhatava artikli käigus pakutakse välja analüütiline raamistik, mille abil on võimalik kaardistada institutsionaalseid ja personaalseid infokeskkonna aspekte, indiviidi ressursse ja tema suhteid infokeskkonna aspektide vahel (Joonis 3). Teoreetilises ja analüütilises raamistikus on kesksel kohal indiviid, kelle psühhobiograafia kiht pakub võimalust vaadelda indiviidi lähtudes tema psühholoogililisest isiksusest (psühho-) ja tema sotsiaalsest arengust (-biograafia). Indiviid on interaktsioonis end ümbritseva keskkonnaga situatiivsete tegevuste kihis, kuhu kuuluvad kõik inimeste vahelised suhtlussituatsioonid ja mis on seetõttu hajus ja kergesti muu-tuv. Antud analüüsi käigus on seda kihti mõistetud ka info- ja kommunikat-siooni tehnoloogiate poolt vahendatud suhtlemissituatsioonide kontekstis, sa-muti on lähtutud põhimõttest, et ka tehnoloogia võib olla suhtlemissituatsioonis



partneriks (näiteks tehnoloogia kodustamise situatsioon). Sotsiaalse keskkonna all mõistetakse inimese lähemat ja isiklikumat tegutsemiskeskonda, sotsiaalseks keskkonnaks on sõbrad, perekond, töökoht, sotsiaalsed institutsioonid, mis erinevalt situatiivsete tegevuste kihist on stabiilsed ja jätkusuutlikud ka siis, kui interaktsioon on läbi. Kontekstuaalsete ressursside kihina mõistetakse ühest küljest infokeskkonna instutsionaalset aspekti–valitsust, ettevõtteid, meediat ja kultuuriorganisatsioone, kuid samal ajal tähistab see ka üldisi ühiskondlike norme, väärtusi ja arusaamu, mida need institutsioonid vahendavad.

Oluliseks teoreetiliseks mõisteks on ka küberühiskonna või küberruumi mõiste, mis antud töö kontekstis tähistab sotsiaalseid tegevusi virtuaalses ruumis, mille moodustavad arvutivõrgud. Oluline on see, et selle töö käigus ei käsitleta küberruumi iseseisva globaalse ühiskonnana, vaid sotsiaalsed kihid ulatuvad virtuaalsesse ruumi ja uurimuse üheks ülesandeks on leida, kuidas need virtuaalsed laiendused toimivad.

Väitekirja teises osas esitatud publikatsioonid analüüsivad erinevaid elemente ülalpool loetletud kihtidest. Sissejuhatuse Tabel 3.1 annab kokkuvõtva ülevaate erinevate empiiriliste tööde jaotumisest kihtide analüüsi kontekstis. Lähtudes kihtide ja infokeskkonna teooriast on võimalik kahte suuremat uurimisküsimust täpsustada konkreetseks küsimuseks iga kihi kohta:

- a) **Kuidas osaleb info- ja kommunikatsioonitehnoloogia psühho-biograafia domeenis?**
- b) **Millised on muutused sotsiaalsetes suhetes, mida saab seostada info- ja kommunikatsioonitehnoloogia kasutusega?**
- c) **Kuidas info- ja kommunikatsioonitehnoloogiaga seotud muutused loovad ja mõjutavad kasutaja sotsiaalset keskkonda?**
- d) **Kuidas institutsionaalsed aspektid mõjutavad kasutaja-tehnoloogia interaktsiooniga seotud kontekstuaalseid ressursse?**

Dissertatsiooni raames analüüsin psühho-biograafia kihi tunnustena arvutite ja internetiga seotud arvamusi ja hoiakuid (V ja VII uurimus), Internetikasutajate tüüpe ehk virtuaalset elustiili kui psühho-biograafia domeeni laienemist virtuaalses keskkonnas (III, IV, V ja VIII uurimus) ja sotsiaalset, kultuurilist ja majanduslikku kapitali kui interneti kasutajate ressursse (III uurimus). Situatiivsete tegevuste kihi raames analüüsin informatsiooni kasutust *online* keskkonnas (I ja II uurimus) ja mobiiltelefonide mitmekülgset kasutust (V ja VI uurimus) ja kommunikatsiooni situatsiooni partnerina (VI uurimus). Sotsiaalse keskkonna kihi elementidena vaatlen jututubasid ja *online* ajalehti, kui sotsiaalset keskkonda uudiste vastuvõtu ja arutelu situatsioonideks (I ja II uurimus). Lähemalt analüüsin, millist rolli mängib kiirsõnumite vahetamise tehnoloogia (MSN, ICQ jt) sotsiaalse keskkonnana (VIII uurimus). Lisaks on vaadeldud tehnoloogia kasutamist erinevates sotsiaalsetes keskkondades (IV uurimus). Kontekstuaalsete ressurssidena on sissejuhatavas artiklis käsitletud poliitikat ja meediat

infokeskkonna mõjutajana (VIII uurimus) ja erinevaid institutsioone kui infokeskkonna kontekstuaalsete ressursside kihi kujundajaid (IV uurimus).

Analüüsid seda, kuidas IKT osaleb psühhobiograafia domeeni kujunemises, võime järeldada:

- Psühhobiograafia domeeni analüüsimine aitab meid leida hoiakuid, väärtusi ja muutusi praktikates, mis võimaldavad inimestel paremini toime tulla info- ja kommunikatsioonitehnoloogiatega, rakendades neid erinevates funktsioonides (III, IV, V, VII ja VIII uurimus).
- Inimeste interneti ja arvutitega seotud arvamused peegeldavad seda, kuidas neid tehnoloogiad on omaks võetud kommunikatsiooni ja arvamusalalduse kanalitena (V, ja VI uurimus).
- Internet ja arvutid on levinud uudiste ja informatsioonikanalid uudistest teada saamiseks, kuid veelgi enam uudiste jälgimiseks ja ise info otsimiseks (I ja V uurimus).
- Sotsiaalne, kultuuriline ja majanduslik kapital pakuvad täiendava dimensiooni inimeste psühhobiograafia domeeni uurimiseks. Kuigi praegune analüüs ei võimalda meil leida põhjuslikke seoseid internetikasutuse ja indiviidi kapitaliseerituse vahel, on siiski võimalik näha tugevaid seoseid (III ja V uurimus).
- Info- ja kommunikatsioonitehnoloogiad toetavad sotsiaalset kapitali, pakkudes kommunikatsiooni võimalust sõprade ja tuttavate vahel ja tugirühmade teket. Samuti pakuvad IKT-d võimaluse kultuurilise kapitali edendamiseks avardades võimalusi informatsiooni ja hariduse saamiseks. Samas on tehnoloogiate kasutamine siiski seotud olemasoleva kapitaliseerituse tasemega (III uurimus)
- Interneti kasutajatüübid ehk virtuaalsed elustiilid aitavad meil paremini mõista internetikasutuse mitmekülgset iseloomu ja psühhobiograafia väljendumist virtuaalses ruumis (III, IV ja V uurimus).
- Elustiilid on seotud tehnoloogia kasutusega, kuna nad moodustavad konteksti, mille raames tehnoloogiaid kasutusele võetakse. Lisaks mõjutavad elustiilid, milliseid tehnoloogia aspekte me kõige rohkem hindame (VIII uurimus).

**Sotsiaalsetes interaktsioonides toimunud muutustest on võimalik tehnoloogia kasutamisega seostada järgmisi:**

- Situatiivse tegevuse domeen muutub, sest selle kirjalik kuju, mis on virtuaalses keskkonnas, annab kihile stabiilsuse ja analüüsivuse. See omakorda aitab paremini mõista situatiivse tegevuse mõju arvamuse kujunemisele ja teistele sotsiaalsetele funktsioonidele (I ja II uurimus).
- Info- ja kommunikatsioonitehnoloogiad on muutunud üksikisiku jaoks situatiivsete tegevuste partneriks mõningates institutsionaalse kommunikatsiooni situatsioonides (IV, V ja VI uurimus).

**Sotsiaalsete keskkondade uurimisest võib leida mõningaid tehnoloogia kasutamiseiga seotud muudatusi olemasolevates sotsiaalsetes situatsioonides ja uusi virtuaalseid sotsiaalseid keskkondi:**

- Sotsiaalsete keskkondade kihil on laiendused virtuaalsesse ruumi. Lisaks sellele saab tehnoloogia mõjutada ka olemasolevate sotsiaalsete keskkondade toimimist (**I, II, VI ja VIII** uurimus).
- Virtuaalsed sotsiaalsed keskkonnad on erinevad, sõltuvalt sellest, kas on tegemist mitteformaalsete kanalitega või on need seotud institutsionaalsete kanalitega (**I ja II** uurimus).
- Kiirsõnumite vahetamise tehnoloogiad on muutunud mitteformaalsest ja mängulisest kommunikatsioonikanalist kanaliks, millel võib kasutajatest lähtuvalt olla erinevaid rolle (**VII** uurimus).
- Piir virtuaalsete situatiivsete tegevuste kihi ja sotsiaalsete keskkondade kihi vahel on hägune; kui situatiivsed tegevused on toimunud piisavalt kaua, siis on neil oma reeglid ja toimimismehhanismid, mis on omased sotsiaalsetele keskkondadele (**II** uurimus).
- Tehnoloogia kasutuse kaudu pakuvad institutsioonid erinevaid virtuaalseid keskkondi, pakkudes stiimulit tehnoloogia kasutuseks ja muutes olemasolevate sotsiaalsete keskkondade toimimist ja protokolle (**V ja VI** uurimus).
- Psühhobiograafia domeenis olevad suhtumised ja hoiakud mõjutavad tehnoloogiaga seotud virtuaalsete sotsiaalsete keskkondade kasutust.

**Uuringutest selguvad mõned võimalused, kuidas institutsionaalsed aspektid mõjutavad kasutaja-tehnoloogia suhteid ümbritsevaid kontekstuaalseid ressursse:**

- Eesti infoühiskonna poliitika on olemas juba 1994. aastast; need on ennekõike tehnoloogia- ja majanduskesksed. Poliitilised mõjutused on tugevamad institutsionaalsete aspektide suhtes ja vähem tugevad üksikisiku suhtes.
- Pangad on mänginud olulist rolli, pakkudes *online* tegevuste jaoks konteksti ja ka stiimuleid üksikisikutele info- ja kommunikatsioonitehnoloogiate kasutamiseks (**IV ja VIII** uurimus).
- Erinevad mobiilteenused, mida pakuvad avalikud ja eraettevõtted, kasutavad mobiiltelefone ennekõike võimaldamaks inimesel suhelda institutsioonidega. Sellistes olukordades on mobiiltelefon nii suhtluspartner kui ka kommunikatsiooni vahendaja (**VI** uurimus)
- Meedia mängib aktiivset rolli mõjutades avalikke hoiakuid info- ja kommunikatsioonitehnoloogiate suhtes. Eesti meedia on kasutaja-tehnoloogia suhtes keskendunud ennekõike tehnoloogilistele ja majanduslikele aspektidele ja mitte nii väga kasutajaga seotud aspektidele (**VIII** uurimus).

Eelnevast ülevaatest saame teha ka järeldusi kahe põhiküsimuse suhtes:

**(1) Millised on kasutaja-tehnoloogia interaktsiooni sotsiaalsed tagajärjed erinevates infokeskkonna kihtides?**

Inimeste ja tehnoloogia vaheliste suhete analüüs näitab, et üksikisiku ja sotsiaalse elu tasandil on muutusi, mida saab seostada IKT-ga. Neid muutusi on võimalik leida erinevatest sotsiaalsetest kihtidest. On näha, et tehnoloogiaga seotud muutused pole ühesed kõigi inimeste jaoks, vaid on seotud erinevate individuaalsete rakendustega, mis info- ja kommunikatsioonitehnoloogiale leitakse. Kasutusviise mõjutavad hoiakud, elustiilid ja kapitalid. Institutsioonid rakendavad tehnoloogiat moodustades sotsiaalseid keskkondi ja mõjutavad indiviidide kontekstuaalseid ressursse. Situatiivsete tegevuste domeenis, kus toimuvad kontaktid indiviidide, aga ka institutsioonide vahel, on tehnoloogia diskussiooniparnteri või interaktsiooni kontekstina.

**(2) Kuidas erinevad sotsiaalsed kihid laienevad virtuaalsesse ruumi?**

Sotsiaalsete kihtide analüüs näitab, et erinevatel sotsiaalsetel kihtidel on laiendused virtuaalsesse ruumi, mis ei moodusta eraldiseisvat ühiskonda, vaid on sama ühiskonna sotsiaalsete kihtide aspektid virtuaalses keskkonnas. Virtuaalsed domeenid vajavad kujunemiseks ja küpsemiseks aega, sest paljud sotsiaalsed protsessid on jätkuvalt kujunemisejärgus.

## **PUBLICATIONS**

## **The September 11 Attacks on the US in the New Interactive Media Space in Estonia**

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PILLE VENGERFELDT

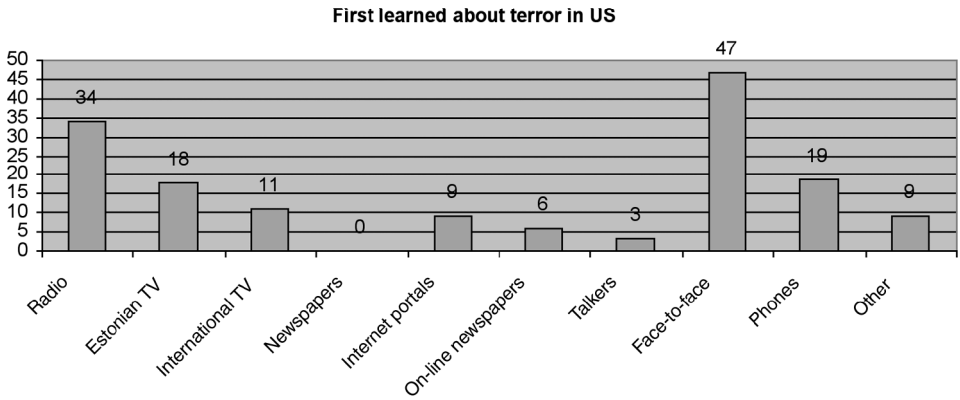
**ABSTRACT** *This paper examines how Estonians dealt with the news concerning the September 11 attacks in the new electronic communication space of the Internet. This work will summarize people's discussions on the Internet relating to the September 11 attacks by outlining the different narratives that carried people's attitudes and knowledge. The paper aims to show that the Internet was used, not only as a medium for obtaining more information about the attacks, but also as a medium for discussion and crisis support. This research is based on: (1) a survey amongst Tartu University students and follow-up semi-structured interviews; (2) an analysis of the comment pages on Estonian electronic newspapers; and (3) an analysis of three chat logs from Estonian talkers.*

**Keywords:** Internet, September 11 terrorist attacks, interpretative communities.

### **Introduction: The Internet in Estonia**

Estonians have always been very proud of their Internet usage. Estonia is in fifteenth place out of 95 countries in Europe and the surrounding area in an Internet connected hosts list.<sup>1</sup> This is the highest place among post-communist countries. Information and communication technologies (ICT) have been a rapidly developing field in Estonia. It is often thought in post-communist Estonia that high development in ICT will guarantee the nation's success in the Western world. Lauristin and Vihalemm summarized it well: 'The rapid introduction of e-society in Estonia has given a chance for a small post-communist country to make a "shortcut" to the advanced postindustrial society and to make use of the new opportunities for economic and social development'.<sup>2</sup>

The strong development of ICT in Estonia springs from several highly important and interrelated factors: a small territory and a society that is homogenous in terms of population; a supportive political, economic and cultural environment; and an openness to new trends in technology. In 2001, Estonia had a population of 1.4 million people of whom 32% (448,000) claimed to use the Internet on a monthly basis and 17% (238,000) claimed daily use. This



**Figure 1.** Where Tartu University students learned about the September 11 terror in the US.

compares with a 1997 monthly usage rate of 6% and a 1997 daily usage rate of 3.5%.<sup>3</sup>

### Overview of the Paper

This paper reports on studies of what people in Estonia talked about following the September 11 attacks. The goal is to outline different narratives and describe the attitudes and knowledge expressed therein. Both institutionalized and non-institutionalized narratives were studied. Newspaper narratives, Internet chat sites, questionnaires, and interviews were employed in this multifaceted study. The paper will show that the Internet was not only a medium for information gathering but was also a medium for discussion and support in crisis situations.

Institutionalized opinion was determined by analyzing articles published up to one week after the terrorist attacks on the United States in the two largest daily newspapers in Estonia: *Postimees* and *Eesti Päevaleht*. Both papers have news sites that are updated throughout the day.

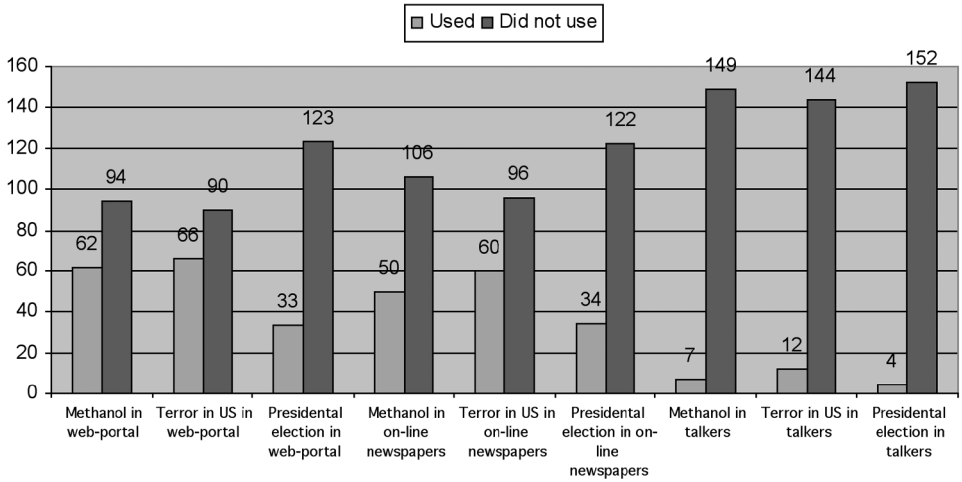
Non-institutionalized opinion was determined by evaluating the comment pages from the same two newspapers, the log files from two Estonian Internet chat rooms, and log files from two IRC (Internet Relay Chat) chat channels. In those chat rooms and IRC channels altogether around 200 different people are represented.

A questionnaire was conducted of 156 Tartu University students who study medicine, philology, journalism and communication, and informatics. In addition, semi-structured dyadic interviews were conducted with seven students who had answered the questionnaires, that they used the Internet during the September 11 events.

### News Gathering

The questionnaire among Tartu University students indicated that the primary source for US terror attack news was person-to-person contact (Figure 1). This can be explained by the traditional crisis news diffusion patterns as this kind of news places high on the everyday communication agenda.<sup>4</sup>

Using the Internet channels to follow the news events



**Figure 2.** Using the Internet channels to follow the news events.

Questionnaires conducted among Tartu University students followed three main events that took place in September. On September 9, the first victims of poisonous methanol drinking died in Pärnu. Altogether 68 people died and around 200 were hospitalized because of drinking methanol that they mistook for illegal alcohol. (As some comments pointed out: in percentages 68 people from 1.4 million is a larger percentage than the victims in the US.) September 11 saw the terrorist attacks on NYC, and on September 21 there were presidential elections that were won by one of the least expected candidates which caused great turmoil among the younger generation.

The Internet, however, proved to be a very important source for follow-up news. The international crisis not only caused people to search for news on the Internet (Figure 2) but also saw people turn to the Internet to discuss and comment on the news. As can be seen from the data, the use of chat rooms was also higher in the crisis situation. The same phenomena showed also from the interviews. The news of the US terrorist attacks was the most commented upon news items in the on-line editions of the newspapers *Eesti Päevaleht* and *Postimees*.

As a medium, the Internet provides an interesting opportunity for the development of an engaged and active polity. Whereas news sources for the English speaking Internet user and newspaper editors are the same and crisis situations such as the terrorist attacks require constantly updated information, Internet users can follow the news in the international media and on this basis form a discussion forum.

In contrast, the Estonian newspaper editors have to take time to translate the news. Given the continuous demand for speedy information in crisis situations, there is a noted lack of critical analysis and only space for more and more standardized news text from all kinds of sources. Active Internet users who frequently use either the comment option with newspapers or portals or participate in online chat rooms have an opportunity to develop critical and analytic approaches to news stories. They do not have to take the time to translate the news—all the news items referred to are in English but it is discussed in the



Estonian language and in the Estonian cultural space. In this case the Internet gave people the possibility of expressing themselves and to receive adequate and quick feedback to their expressions.

### **Institutionalized View on the September 11 Attack**

Online versions of Estonian newspapers are used as the reflectors of institutionalized opinions. Four general topical themes are discerned; ‘National Tragedy’, ‘Who is to Blame?’, ‘New War’, and ‘Estonia Is Ready to Go and Help America’. Although many other topics were under discussion, these four were the most significant. Each topic is discussed below.

#### *National Tragedy*

There were a great deal of official and often propagandistic materials from the USA. Within the confines of this topic nothing serious and nothing critical is discussed, rather this topic outlines the overall reaction to the tragic events—sadness, compassion, and constant update of the events. Some headlines, for example, are:

**World mourns for the people lost in the terrorist attack in US**—people have brought flowers and candles to the highly secured embassies to mourn for the unknown number of people lost in the terrorist attack yesterday (*Postimees*, September 12, 2001).

**The Symbols of US crumbled in the dust** (*Eesti Päevaleht*, September 12, 2001).

**Since today, the world will not be the same!** . . . I think that since today, the world will not be the same—everything is changed (*Eesti Päevaleht*, September 12, 2001).

#### *Who is to Blame?*

Different approaches abound under this subheading: from quick official headlines, saying that we will hunt the guilty in some newspapers, to the extent that some newspapers even publish Nostradamus interpretations.

**Bin Laden is suspected**—The person behind the air terror attacks is thought to be one of the most feared terrorists, Osama bin Laden who lives in Afghanistan at the moment (*Postimees*, September 12, 2001).

**Internet is to blame: let’s bomb the Internet Service Providers!**—Today’s British newspaper *Daily Telegraph* blames the Internet in supporting terrorist attacks suggesting the bombing of Internet service providers who do not agree on banning encrypted e-mails (*Eesti Päevaleht*, September 17, 2001).

**Nostradamus’s predictions: does third anti-Christ rise its head?** (*Eesti Päevaleht*, September 12, 2001).

*New War*

Within this topic many Estonian experts discuss the attack from the perspective that it could lead to a third world war. The possible WW3 is not about just killing people or a nation protecting/gaining territory, it is war against the unknown. It is a war against terrorists, who have different values and different understandings; they have different ways of fighting that are unbelievable for Western thinking. For instance, the first headline in *Eesti Päevaleht* was 'World War III'. The newspaper editor, instead of reacting as a professional, behaved as a human being and spread the panic. But the ideas of 'new war' also lead to offshoot opinions, such as those from psychologists discussing the attacks as prompting a possible inner war for human beings.

**Modern war era has begun**—Modern war is not just war for nation's survival. The following days will show if the US will start the war not only against the terrorist camps but also against the state order in pariah states (*Postimees*, September 13, 2001).

**War in us**—There is a saying, party in us. Now we have depression. We have a war spirit in us—we would like to bomb, to revenge! Party is in the past, at least for normal people (*Postimees*, September 21, 2001).

*Estonia is Ready to Go and Help America*

This topic consists of several statements by politicians and officials who say that, in general, Estonia is ready to help the US in its need should help be requested. But it also shows the importance and great impact that the terrorist attacks had on Estonians and as the officials saw this a possibility for themselves to promote Estonia and its activities by stating everywhere how very much they support anything the US undertakes.

**Government decided to hoist national flags as flags for mourning** (*Postimees*, September 12, 2001).

**If needed Estonia is ready to help America**—Estonian Rescue Board is ready to send a rescue team consisting from up to 40 members to United States, should major power ask for it (*Postimees*, September 12, 2001).

**Internet Narratives**

To compare and demonstrate differences between the institutionalized and non-institutionalized reactions to the September 11 incidents, the same four categories are used to gather narratives regarding what people discussed on the Internet. An attempt is made to demonstrate not only how opinions in the talking culture differed from official statements but also to show how the discussion topics are centered around more than mere news gathering and dividing: they also include discussion, support, emotions, and sharing.

Institutional news uses different news sources without comment and critique in that everything is taken for granted. The Internet gives non-news professionals the opportunity to follow the same news channels on-line concurrently with the news

media. As media institutions then need to translate, and sometimes edit, the news, people who use IRC or chat rooms make these more effective news channels. They refer to the news item and use the possibility to express themselves on the topic. This creates for a short while a very large-scale communication and discussion space where people use computer-mediated communication.

### *National Tragedy*

The main keywords here would be emotional compassion. This narrative also includes the idea of show business; the whole event is referred to as a movie that has no positive end. As the chat room logs were recorded without asking permission, the citations are without names.

September 11, 2001, 17:34: 'Methanol, Pentagon, WTC . . . Life as in moving pictures:—only that there is no Bruce Willis coming' (IRC channel).

September 12, 2001, 19:13: 'Now a regular American can see that America can not be saved by three men, one black, one president, one dork as they have it in the movies' (IRC channel).

September 11, 2001, 17:14: 'World end countdown has started' (Chat room).

### *Who is to Blame?*

There were many different opinions here. At some point people began discussing the idea that maybe the US deserved the attack, that it was an attack against the Western culture and ideology that the US supposedly stands for. Other blame targets range from a worldwide Jewish conspiracy to cosmic turmoil. Although these blame targets can at some point be taken seriously most of these speculations seemed to be sarcastic mocking of the headhunt the US was organizing.

September 11, 2001, 13:02: 'or Japanese kamikaze who got inspired by Pearl Harbor' (Chat room).

September 11, 2001, 16:43: 'Actually, it is just panic caused by evil hackers' (IRC channel).

### *New War*

Questions posed in this narrative include how to fight a new war and how to prepare for a new war. Many parallels are drawn with previous wars. People express their fears regarding the possible war.

September 12, 2001, 01:05: 'By the way, when the first news came, that first houses exploded in Kabul, then it made me feel a little bit creepy, that Christianity versus Islam has begun' (Chat room).

September 11, 2001, 14:56: 'Palestine will be crushed, there will only be China in front of Jews' (Chat room).

September 11, 2001, 13:27: 'Damn, if it will be found out who organized this bang then there will probably be WW3' (Chat room).

*Estonia is Ready to Go and Help America*

This is considered to be ridiculous and pandering to the US. This is one point on which the commentators appear to be unanimous. It is quite clear that the commentators do not believe that Estonia has any kind of help to offer to America.

September 12, 2001, 16:15: 'I don't know how to put it, things that happened in US were astonishing. And they shadow everything that happened in Estonia. But still, there should be national mourning for things happening in Estonia. Actually, it makes me wonder, why this has not already been done' (*Postimees* on-line comment).

September 12, 2001, 19:21: 'Where do we mourn people who died in Pärnu Aren't they people? For the government some Americans are holier than the local people, it can clearly be seen, whose interests are being served' (*Postimees* on-line comment).

September 26, 2001, 20:10: 'Everyone wants to be friends with Americans, Lithuania offered America their air space, but that seems to be almost everything there' (IRC channel).

## **Discussion**

Communication researcher Denis McQuail notes that 'in practice, the interactive potential of new technology is as likely to strengthen the position of the media "sender" as to serve the "empowerment" of receivers. The greater potential for interactivity of new electronic media is actually a force for consolidation of the traditional audience since it opens up new possibilities for active relations between senders and receivers'.<sup>5</sup>

We can see, that in the case of September 11 news, the concept of the traditional 'sender' has clearly changed due to the implementation of new technology. People have more chances to look up the news and relate to it quicker in the Internet context. As the interviews reported in this paper indicated, in a crisis situation all kind of channels are opened up to obtain more information: TV, radio, Internet, newspapers—all are equally opened for more and more information. The Internet chat rooms and comment pages at newspapers and portals often prove to be more than just information sources. They tend to be gathering points for different news sources and opinions. Participants of the chat rooms and comment pages turn into their own news gatekeepers, gathering and spreading the news among their own group. This phenomenon can be very well seen in the chat rooms where news is referred to with Web addresses and then is commented and discussed upon. The Internet is at every stage what McQuail refers to as an interpretative community. 'Media use is typically situation specific and oriented to social tasks that evolve out of participation on "interpretative communities".'<sup>6</sup>

Here the community interpretations go further than just interpreting concrete news pieces, as the terrorist attack is referred and interpreted in the local context.

As Internet researcher Robert Arpo says: ‘Texts are always produced and interpreted using norms, values, and world views that draw their respective meanings from specific communities’.<sup>7</sup> Also the Internet audiences as interpretative communities have greater opportunities as they use the common interaction space to bring these interpretation factors together.

In crisis situations where information is rare and not so reliable, larger inner cultural norms and values are used to interpret the information. That is why WW3 is suspected as soon as a major power is attacked. As a small country that is battered by wars, Estonians are extra sensitive and fearful on war issues. The cultural context also explains why the idea of Estonia helping the US is so ridiculous—for in the everyday context Estonians at some point even debated on the need for a military at all. New media gave excellent space in informational vacuum situations to support people through the common stereotypes, norms and values, and the increased possibility of sharing their ideas and emotions.

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## The Internet as a News Medium for the Crisis News of Terrorist Attacks in the United States

*Pille Vengerfeldt*

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*In Estonia, conventional mass media is delayed because of the need to translate from English. Thus the role of the Internet will be increasingly important in such countries.*

*Pille Vengerfeldt looks at how people in Estonian cyberspace dealt with the tragic news of the September 11 terrorist attacks on the United States. The role of the Internet in receiving, discussing, and reacting to the news of the attacks is examined through survey, interviews, and text. She also compares different channels, such as online newspaper and chat rooms, to determine the similarities and differences of dealing with the news. She concludes that although Estonia is far away from United States, the terrorist attack still caused a lot of disruption in Estonian cyberspace. This shows that the Internet indeed can bring world events closer to everyone.*

### Relevance of Researching New Media

NEW MEDIA” IS A LOADED TERM THAT refers to a variety of new technologies but also has a larger political connotation. We speak of the digital divide as something dividing people and nations: those who have better opportunities to cope with their lives due to access to the new media and others who don’t. But in a small country like Estonia, the new media also carry the heavy burden of hopes, for instance, helping the country bridge the differences with more advanced societies. As Lauristin and Vihalemm put it, “The rapid introduction of the e-society in Estonia has provided an opportunity for a small post-communist country to take a ‘shortcut’ to being an advanced postindustrial society and to make use of the new opportunities for economic and social development” (Lauristin and Vihalemm 2001).

With such heavy expectations of the new media, the research done in this field aims constantly to show the relevance and importance of the subject. Although new media carry the name (and thus also the connotational framework) of media, in essence they are much more. The audiences of the new media are called users, giving them a more active role in participation and consumption than the audiences of the traditional media have.

This chapter aims to broaden the field of new media studies and connect them with traditional media studies. It aims to compare the new media environment with traditional news environment. There has not been much material published in which the new media have been viewed as a news reception context—a social context for adding values to traditional audience processes.

The aim here is to use the media coverage of the terrorist attacks in the United States on September 11 as a basis for researching audience reception processes. This study looks at the new media as an environment in which all kinds of media consumption can take place and where the reception process can be analyzed through written traces that users leave behind.

The issues raised in this chapter include how can one research Internet communities in their process of interpreting the news? And from the content side, is there a difference in news content in different new media channels?

### New Media Audiences as Interpretative Communities

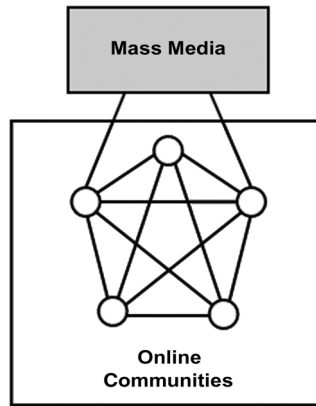
The object of this study is the September 11 news in the Estonian new media space. It is analyzed through a survey and interviews with students of Tartu University, and through text analysis of a sample of the new media environment in Estonia: the online forum of the largest daily newspaper, *Postimees*, and its online commentary forum and two Internet relay chat (IRC) channels #estonia and #linux.ee.

Communication researcher Denis McQuail notes in *Audience Analysis* (1997) that

in practice, the interactive potential of new technology is as likely to strengthen the position of the media “sender” as to serve the “empowerment” of receivers. The greater potential for interactivity of new electronic media is actually a force for consolidation of the traditional audience since it opens up new possibilities for active relations between senders and receivers. (McQuail 1997, 147)

This chapter attempts to show that, in the case of September 11 news, the new technology enables interpretative communities to meet in virtual reality. (See figure 11.1.) People have more opportunities to access the news and relate to it more quickly through the Internet. As research indicates, in a crisis situation people open all kinds of channels to obtain more information: TV, radio, Internet, newspapers. (See, for instance, Cohen et al. 2002; Rogers and Seidel

2002.) The Internet chat rooms and comment pages at newspapers and portals may prove to be more than just information sources, possibly gathering points for different news sources and opinions. Previous experience shows that participants in chat rooms and comment pages turn out to be news gatekeepers for the community. They gather and spread the news among their own groups. A hypothesis was raised to see if this phenomenon can also be seen in the chat rooms. The Internet makes it possible to cite news items with web addresses; then these news items can be commented on and discussed. If the hypothesis can be proven, then Internet communities can be viewed as interpretative communities. “Media use is typically situation specific and oriented to social tasks that evolve out of participation in ‘interpretative communities’” (McQuail 1997, 19). Community interpretations can go further than just interpreting concrete news pieces; the terrorist attack is referred to and interpreted in the local context and new information is added to traditional media sources. A shared interpretation process can be viewed as a process through which a common understanding of the news develops, empowering users of the new media in dealing with the news. (See also Poulsen 2002.)



**FIGURE 11.1**  
Online Communities as Media Audiences

### Methodology: Combination of Different Methods

The aim of this research is to show how the Internet gives added value to the reception of crisis news. For that, three methods are selected: survey to show what kind of role the Internet played in crisis news reception; interviews to help understand people’s opinions about the issues; and text analysis to see what actually happened in the new media environment.

First, a survey was used to determine the context of media use among students of Tartu University in order to see if the new media played any role in



the crisis news situation. The survey also attempted to create the context of the new media environment to see how its qualities as a news source are rated in relation to other sources. One hundred and fifty six students from the departments of philology, informatics, medicine, social sciences, and media and communication studies participated in the surveys. The questionnaires were distributed in the classes and some were left in libraries to be filled out.

The second method used was dyadic semistructured interviews. This was basically a follow-up to the survey, even containing some of the same questions. Seven pairs of students who had used new media sources actively during the crisis were selected for interviews on the basis of their answers to the survey. In the interviews, people had a chance to expand and comment on the questions and results of the survey.

The third part of the data was gathered through text analysis. During the period from September 11 to September 19, 2001, electronic sources were monitored to gather data from the largest daily newspaper in Estonia, *Postimees*, and its online commentary forum and two chat rooms.

*Postimees* has had an online version since 1995. Currently the news is updated throughout the day. Analyzing articles in *Postimees* helps reveal the traditional pattern of news and, as most of the articles are also in the paper version of the newspaper, *Postimees* can be viewed as a representation of the traditional media. Analysis shows the topics used in the paper and it provides good reflective material to be compared with other sources.

The *Postimees* online commentary forum, in which people can comment in real time on the news that is published in *Postimees*, can be viewed as a virtual community that meets in electronic space based on the actuality, context, and content of the news. *Postimees* online commentators can be regarded as people who read the newspaper (a newspaper audience) and leave imprints in textual form in the new media environment of their news reception process.

Chat room logs were also a valuable source for this kind of research as they helped us conduct a virtual observation of what happened during those days in a relatively closed community. As the news in question was regarded as very important throughout the world (most people knew about it and talked about it), the logs helped to make clear how the news was actually discussed among people—they are like recordings of actual and authentic conversations in virtual space.

### Text Analysis as Exploration of Method

The challenge of the method is that traditionally content analysis is made with equal-sized objects, but this time, the items of the content analysis are from different sources and therefore of different natures.

In our text analysis three things were analyzed: who spoke, what was said, and when. The idea was to compare those items across different genres in

order to compare them as news environments. Text analysis consisted of three steps: qualitative, quantitative, and then once again qualitative.

First, a rough qualitative analysis was made in order to select content analysis categories. Altogether thirty topics and fifteen subtopics were identified in analyzing the September 11 attack. This part of the analysis was a preparation phase for the actual work.

Next, a content analysis was conducted on comments, dividing them into previously selected categories. This part was used to set up the timelines and quantitative content comparison.

### Problems with the Content Analysis Categories

As the units for the comparison were rather difficult to set up, there are two levels of analyzed objects. First there were utterances—single items in content analysis that have their own category markings: who the speaker/writer was, what the content was, and when it was said. The utterances in IRC chat room logs were separate comments produced by a speaker. This might have been one sentence, one word, or one paragraph. They were separated by the speakers themselves as they pressed <enter> somewhere in the flow of communication, thus separating one statement from another. This probably can be compared to taking a breath in oral communication. In the *Postimees* online comments forum, one utterance is one single comment, varying in length from one-word exclamations to one page of reasoning. But they are clearly distinguishable by the intent of the commentator and in general their length is also comparable to the chat room utterances. The difficult part of using this method was deciding the length of the utterance in the newspaper. Finally, through discussion with a colleague with expertise in text analysis, we agreed that using the lead paragraph as the utterance unit for *Postimees* would be a good idea. This solved a number of problems. First, it is comparable in size. It also contains the leading thought of the article and is the most read (according to different theories about online newspapers; see, for instance, Hall 2001; Rich 1998). The total number of analyzed utterances can be seen in table 11.1.

**TABLE 11.1**  
Sample for the Text Analysis

<i>Channel</i>	<i>Number of Total Utterances</i>	<i>Number of Utterances on Terrorist Attacks in the U.S.</i>
<i>Postimees</i> articles	1,412	406
<i>Postimees</i> editorials	2,957	1,022
IRC #linux.ee	28,498	3,187
IRC #estonia	34,802	1,850
Total	67,669	6,465

### Problems with Comparing the Sequences of the Content Analysis

The second level of the analysis also presented a problem. In traditional content analysis the sequence of the objects is comparable, but in the new media environment, where there is a constant flow of information, it is more difficult to separate it into comparable pieces. The notion of a traditional twenty-four-hour day cannot be used because in IRC chat rooms communication is an ongoing process and is also quite active at night. Cutting it at midnight might result in cutting off someone's discussion in the middle of a sentence. So the idea of a news day was suggested by my colleague Veronika Kalmus. As everyone needs to sleep and as the chat rooms analyzed mostly involved Estonians, who are all in the same time zone, the idea was that there was bound to be a "night"—a natural pause in the continuous communication flow. That "night" is also present in newspapers, comment forums, and chat rooms—although occurring at a slightly different time. In newspapers it was from midnight until eight o'clock, but in chat rooms it was from 3:00 or 4:00 A.M. until 8:00 or 9:00 A.M. Dividing the utterances into news days made it possible to compare the results of the content analysis across channels. As each utterance is marked with a time stamp, it is easy to divide the flow of communication into different news days.

### Problems with Identifying the Author of the Utterance

Log files, articles, and comments all have time identifiers of the talker. The talker is best identified in the newspaper, where the identity of the author of the article is clear. In the chat rooms under observation, in spite of the doubts of different Internet research classics (see for instance Turkle 1997; Rheingold 1993), the real identity of the people could easily be tracked and therefore the speaker could be a content analysis category. The most difficult problem was to identify the speaker in the online communities. Further investigation into anonymous online comments might involve the question of how often people change their nicknames to ones that already exist. The hypothesis here is that people either use one concrete nickname throughout their comments or change them randomly, according to the situation. Therefore we hoped that people would not take nicknames that were already in use. This still leaves the problem of how to identify/count those who randomly switch their identities, but in content analysis, we can also limit the sample to nicknames that are used several times.

After the content analysis was completed, the third step was to qualitatively review all utterances assigned to different categories and summarize some of what was talked about in broader categories. The qualitative revision process also provided the opportunity to compare the different discourses in different channels.

### Timelines as Part of the Text Analysis

As each content analysis category also had a time stamp, a timeline analysis of the texts became possible. Timelines are well known in historical analysis, where they are used to map the historic processes of longer-term events. Media often use timelines to create a conclusive overview of a complicated event. In the case of this analysis, it is important to highlight the differences between the two kinds of timelines. One type might be called event lines as they record the date of different events. Others might be called news timelines, as they cover the sending and receiving process of the news. After the text analysis, it was possible to draw together four different timelines, one for each channel, so that the news timeline for the terrorist attack in the United States in *Postimees*, *Postimees* editorials, and the IRC channels #Estonia and #linux.ee could be compared in terms of speed, density, and variety.

### The Internet as a News Medium: Where Students Found Out about the News

The terrorist attack news follows the classical news diffusion pattern (Ganz 1983; Bantz, Petronio, and Rarick 1983), the most important source being other people in face-to-face conversations (see table 11.2). The next most common source is radio and the third is local television. A total of 10 percent of respondents claimed to have learned about the news in new media space such as online newspapers, portals, and chat rooms. The reception of the news is very much context related. Terrorist attacks on the United States had occurred around 3:00 P.M. in Estonia, when most people were at work and students were on campus. This probably accounts for the high level of face-to-face news reception. As can be seen in table 11.2, local television and Internet channels together had the same proportion of people using them as the first source. This indicates that, at least among students, television and the Internet played equal roles.

### What Channels Were Used for the Follow-Up on the News

Assuming that learning about the news is a rather random activity and depends on the situation and context, where and when the news is received, then following the news is a matter of choice. We can also see how people regard electronic channels—do they use them in a crisis situation and how important do they consider them to be?

In the case of the terrorist attacks (see figure 11.2), all sources are mentioned as being used to follow the news. Almost everyone (133 people out of 156) used local television to follow the event. Radio and newspapers were the

**TABLE 11.2**  
**How Estonians First Learned of the**  
**Terrorist Attack on the United States**

Source	Number of People Mentioning Source
Friends and family	47
Radio	34
Friends over phone	19
Estonian TV	18
International TV	11
Newspapers	9
Internet portals	6
Newspapers in the Internet	6
Chat rooms	3
Other	9

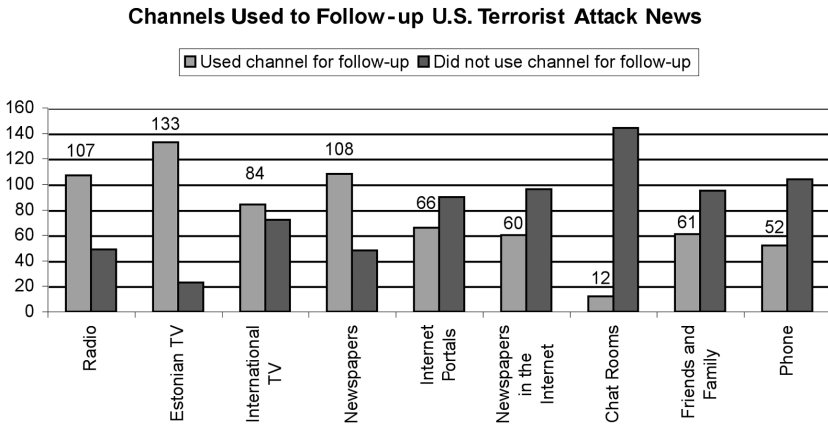
next most commonly used sources. In looking at the different sources people mentioned in the open questions, it is clear that in this case the range of different sources was wider. For instance, the Internet portals were not limited to local Estonian portals but included foreign news portals. The chat room logs show that people who were using one IRC channel usually used not only Estonian but also another, preferably American, portal to get first-hand information.

In general, although traditional channels were used more heavily in following the news than new media channels, around one-third of my respondents used the Internet in following the news. This shows that, for this group, the Internet is an important and reliable news source. In order to present the results of the content analysis, four figures help compare agendas, topics, time density and variety in four different channels.

### Results of the Content Analysis

In order to present the results of the content analysis, figures 11.3, 11.4, 11.5, 11.6 help compare agendas, topics, time density, and variety in four different channels.

Each figure represents one channel: with the top five most-used categories on one axis and the days of the event on the other axis. The cylinders on the figure show how many utterances were made on each topic each day. Where there is no cone, this means that the topic was not mentioned in discussion

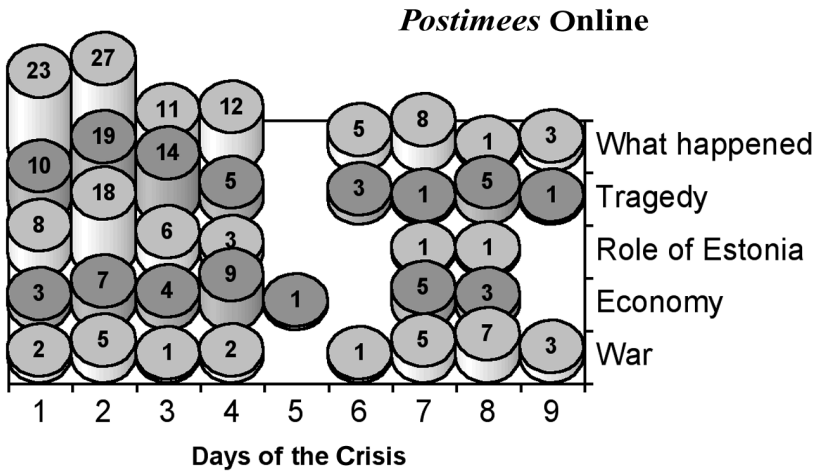


**FIGURE 11.2**  
Channels Used for Follow-up

that day. As can be seen in the figures, the four channels have some similarities and differences in their agendas. From the thirty categories, thirteen were represented in the top five agendas of the four channels.

### Similarities of the Content of Different Channels

What happened is that the most-used category is present in all channels and in *Postimees* Online and IRC channels. It is also first in their agendas. Under this category everything that reports about different activities is filed. This reporting is done in a neutral manner. The high position of this category shows that IRC chat rooms have acquired an almost news agency–like quality in reporting events to members of the community. *Postimees* Online comments do not have a great need to report the events as they rely on the newspaper to perform that function. But in this channel the role of media category is in the highest position and within this category it is possible to find links to other media sources and critiques of existing ones. As *Postimees* itself does not refer often to other sources, this topic is very low in their agenda, but it is there as self-reflection to analyze the media’s role in this crisis. This category also shows the variety of different channels that chat rooms used to provide the community with information. In the combination of those two categories—what happened and role of media—it is possible to see the gatekeeping nature of chat room community members and how the chat room itself becomes a news agency for its members.



**FIGURE 11.3**  
**Content Analysis Results of *Postimees Online***  
*Note:* The numbers in the circles are how many utterances were made for each topic.

The next most actively used category is tragedy. This contains all compassionate utterances related to the sadness of the event. This tone is more represented in traditional media and online commentaries. Other channels also express their compassion but do not deal with those issues as extensively.

The topic somewhat related to the issues of tragedy is jokes. Making fun of the issues—funny pictures, stories, and speculations—helped people deal with the tragedy more easily and the online communities offered plenty of possibilities for this kind of shared experience. As there are more jokes in chat rooms and fewer in online comments, this might mean that in chat rooms people feel more connected to each other, and the closer relationship enables them to use jokes as a tool to get over the tragic events.

### Complementary Nature of *Postimees* Comments

In the *Postimees* commentary forum, the topics relevant to helping people get over the tragedy are the content categories “revenge,” “arrogance of the United States,” and “terrorism.” All these categories cover different aspects of the same topic. Under “revenge,” people speculated on what the United States would do with the culprits and how they would punish them. In the

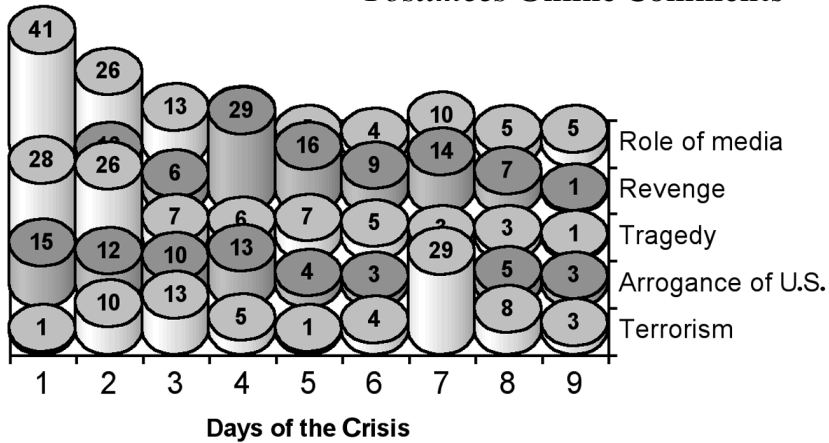
*Postimees* Online Comments

FIGURE 11.4  
Content Analysis Results of *Postimees* Online Comments

“arrogance of the United States” category people discussed whether a major power has the right to use particular kinds of methods to punish culprits. There are people who said that maybe the United States deserved what happened, while others scolded them for such opinions and disrespect for the tragedy and dead. The issue of possible arrogance is also present in the chat rooms, where the revenge and activities of the United States are also often joked about. In online comment forums, the topic is discussed in a little more serious tone.

The “terrorism” content category covers discussions about the background of the event, issues about terrorists’ worldviews, and how they are connected to issues of Islam. People discussed those issues in a serious and educated manner, to some extent filling the gaps left by the traditional media, which failed to cover background issues in depth.

It is interesting to see how these three categories filled gaps in the traditional media that come from the lack of genres. Although the traditional media also tried to cover the background of the conflict and discuss the issues of terrorism and war, the comments in the online forum and chat room hinted that they were not very successful. Therefore the audience in the forum combined their interpretative knowledge in discussion and covered the background of the tragedy in their own way.



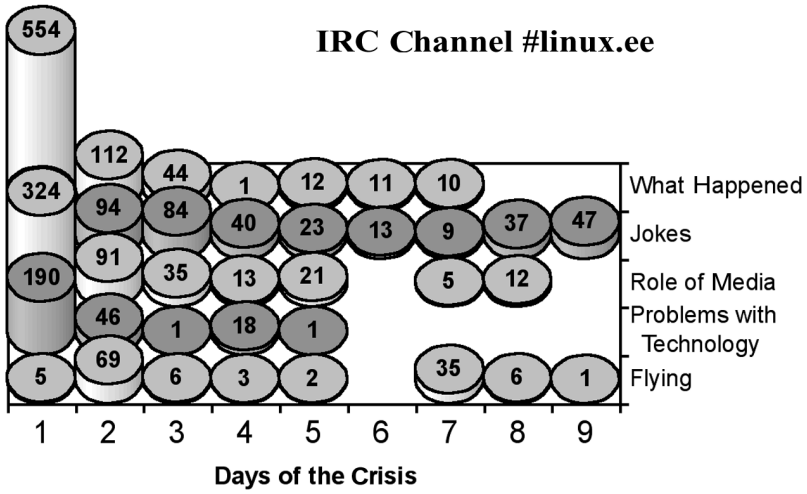


FIGURE 11.5  
Content Analysis Results of IRC Channel #linux.ee

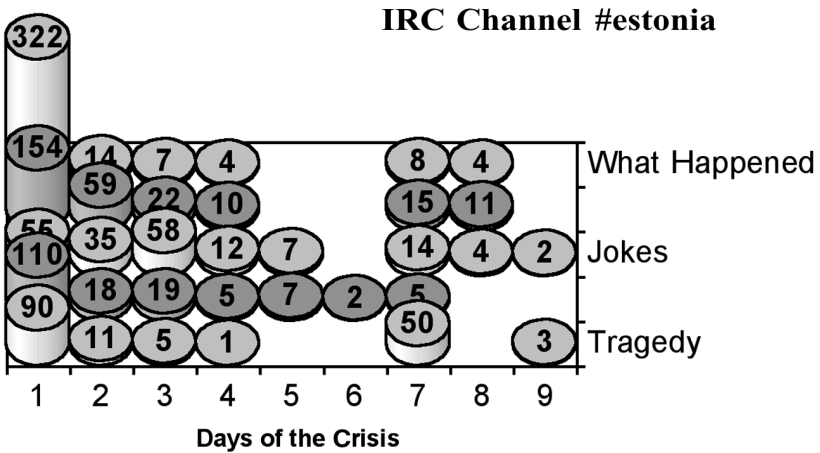


FIGURE 11.6  
Content Analysis Results of IRC Channel #estonia

## News Characteristic for the Traditional Media

The “war” category is related to the three content categories and is connected with the way that traditional media discussed the issues of the terrorist attacks in editorials. Traditional media reported on actual war activities much less than might be anticipated. Rather they attempted to discuss the possibility of a third world war and what might be the contending powers in the case of such a crisis.

A very interesting category for the traditional media is the “role of Estonia.” Sources for this category were local people in authority who used the media to report on how they sent notes of condolence to someone in the United States. Another main theme here is how Estonia is ready to assist the United States in rescue operations, and so on. Other channels responded rather critically to this kind of self-promotion. This category is strongly related to Estonia’s wish to join NATO.

Economy is also a category often present in the traditional media, as the “economy” topic includes discussion of how the crisis influenced economic changes.

## Interactive Role of Chat Rooms

The “personal experience” category is mostly represented in one chat room. This topic revealed the interactiveness of the new media. In IRC #estonia this category revealed instances of support and comfort given to a regular member of the chat room, who was in New York at the time. The IRC channel was used to keep in contact with people. The member in New York asked friends to call her family, to help her to search the Net, and used people on the channel as her personal support network to help her through the crisis. This category was also present in other channels, but there it took the form of self-expression rather than support.

“Problems with technology” is a content category that looks at technology-related issues: what kind of pressure this attack posed on technology as the source of more information. Here the broken Internet connection, speed and availability of the news sites, and online video streams were discussed. This category helps reveal what kind of role the Internet played in this crisis for technology-oriented people. The last category in the #linux.ee channel is called “flying,” and it is used to illustrate discussion about planes, learning to fly, and flight simulators.

## Density of the Utterances in Different Channels

Timeline methodology makes it possible to compare the agendas of the different channels in relation to time. From the four figures we can see how the different channels have different densities in the discussion of the issues of the September 11 attacks. While chat rooms had very active discussions on the first days, the discussion seemed to die down later. The most enduring interest community seemed to be the one that formed around *Postimees* Online. They posted different utterances on almost all topics and their interest did not seem to fade as events developed. Even in *Postimees*, within nine days of the terrorist attack there was significantly less news. Seemingly *Postimees* commentators found a topic with community-forming strength and, at least for the nine days under consideration, some kind of community formed.

## Conclusion and Notes for Further Research

In conclusion, *Postimees* and *Postimees* Online comments are complementary channels—comments filling in the gaps of traditional media with analysis and discussion (figures 11.2 and 11.3). The IRC channels are similar, giving information and support to community members from a perspective that seems most relevant to their communities (figures 11.5 and 11.6).

Topics in the newspaper are dominated by the source of the news—the agendas of the what happened, tragedy, and economy topics were set by international news agencies, while the agenda of the role of Estonia category was set by the state. Topics in the chat rooms seemed to form out of the needs and interests of the chat room communities.

There are also theoretical and methodological perspectives that this research opened. First, the Internet provides us a unique opportunity to explore the creation of the news from different perspectives. The chat room logs, although quite demanding in terms of workload, provide us valuable online recordings of real discussions previously unavailable to researchers. Carefully selected chat rooms that the researcher knows well enough to be able to distinguish cynical comments and jokes from real opinions could be used in further investigations as a valuable source of people's everyday conversations. At least in the case in question, the chat rooms and discussions were in no way edited, arranged, or directed. The researcher can, after announcing his or her presence, remain as a more or less active participant in the community, as long as he or she remains impartial. This would provide a unique opportunity to peek into people's workplaces and homes to see what they talk about, without researcher influence. We could argue about the validity of the data from a practical perspective, as one might claim that the existence of computer mediation influences

the way people think and talk. But my seven years of experience in participatory investigation of both online and offline situations convinces me that the data available from chat room logs is appropriate and valuable material worth considering, not only as a method of researching cyber communities but also as an opportunity to research everyday life and practices. It is worth analyzing whether opinions vary in relation to the channel through which they are presented. A possible hypothesis here would be that the opinions of people do not vary so much in relation to the channel, but more in relation to the participants. Therefore it is possible that opinions given in online space are closer to personal communication than those given in the presence of a researcher.

Second, online comments help us see how important news events have the power to unite people through discussion and by providing a valuable forum that fills the gaps left by traditional sources. It is important to investigate what kinds of topics online communities gather around. What kinds of events influence people's opinions enough to encourage them to share those opinions extensively in online forums? As this research has shown, online comments provide an opportunity to share support and information. Often those online communities attract educated people whose opinions are worth considering and add something extra to the traditional news reception process.

Third, the timelines method is an interesting methodology that provides an opportunity to look at the development of the news over time. It is possible to see when new strands are brought in and, with extensive ethnographic study, we can also see how the news is built. With the timeline pictures presented here, we can determine the most important influences and where they fall in the daily scale. However, the method itself should provide a much more detailed overview and is certainly worth testing through further research.

The interesting points mentioned above about how online communities received the news and how they discussed it call for a model to describe audience processes in the new media environment. A model is needed to describe news reception online, as well as community formation. This model should show the added value of how the Internet enabled communities to gather in the face of crisis news. It would be interesting to consider what kinds of news facilitate the gathering of online communities in the newspaper's online space. Another point of interest would be what kind of news attracts people's attention enough to start discussions in chat rooms. That could give newspapers valuable feedback and would enable researchers to explain some of the aural processes that are otherwise out of reach.

A model that would describe the new media audience processes would be a valuable addition to audience analysis, as this would make it possible to see the audiences as active participants in the news reception process, a reception process where traces of the interpretation are left in the same environment and those traces are used by other people, giving added value to other audience members.

The data presented indicate that this attack was important and interesting to the people of Estonia as well as the rest of the world. Our small nation neglected its own tragedies and turned its face toward the suffering major power. While the traditional media relied heavily on the data provided by the United States, the new media used all sources possible to provide balanced discussion and compassionate support for the people who suffered most.

### Note

An earlier version of this chapter was originally published as Pille Vengerfeldt, “The September 11 Attacks on the U.S. in the New Interactive Media Space in Estonia,” in *Prometheus* 20, no. 3 (2002): 229–36.

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## **BEHIND THE DIGITAL DIVIDE**

### *Capitals and user practices*

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**Abstract.** This paper will look at Internet users in Estonia from the perspective of capitals – economic, cultural and social. Internet users will be dealt with from three angles: first, users and non-users; second, computer adopter categories (early adopters, mid-way adopters and recent adopters); and, third, the Internet will be split into categories and user typologies will be examined. We found that economic capital is the most influential in differentiating Internet users, yet cultural capital and social capital are also important. We conclude that differences in use and non-use, and different user practices can be discussed via the notion of ‘digital choice’.

### **1. Introduction**

Internet users have been compared within the context of different qualities, in a significant body of research. There have been more and less optimistic views about the influence of the Internet on people. This paper will look at Internet users in Estonia from the perspective of Bourdieu’s concepts of economic, cultural and social capitals. Internet users will be dealt with from three perspectives: first, users and non-users; second, computer adopter categories (early adopters, mid-way adopters and recent adopters); and finally, Internet user typologies will be examined, splitting the Internet into categories. Rapid and relatively successful Internet adoption in Estonia makes this country an interesting case for research.

### **2. Theory**

In this section of the present article we outline approaches to Internet user research from the user/nonuser, adopter category and user typology perspectives. We also discuss previous studies on Internet use and social capital, and point out why we think Bourdieu’s approach to capitals is valuable in the context of the current article. To bridge the methodologies, we will outline the composition of capitals as they have been used for this project.

A common (quite often the only) political and economic approach to Internet research is to identify the number of people now using the Internet. In Estonian Internet studies, these kinds of statistics have been presented by survey companies such as Baltic Media Facts and Emor. These statistics are also commonly used for international

comparisons (e.g. EUROSTAT, OECD, World Bank). Although valuable for comparisons and larger indices, this approach alone is insufficient for the purposes of the research reported here.

As the number of Internet users has been increasing over the years, the speed of adoption might be seen as more in-depth indicator of Internet users. In addition, it is a way for Internet researchers to identify different user categories (e.g. Howard, Rainie and Jones, 2002), drawing on earlier innovation theories that focus on the adoption of inventions – a much older research approach, which has been used since the 1940s. One of the best-known innovation theorists, Everett Rogers, has claimed that “titles of adopter categories were once as numerous as diffusion researchers themselves” (Rogers, 1995: 242). A method of adopter categorization proposed by Rogers (1962), based upon the s-shaped curve of adoption, has since gained the dominant position (1995: 242-243).

Rogers presents an adopter categorization based on innovativeness, divided into five adopter categories: (i) innovators; (ii) early adopters; (iii) early majority; (iv) late majority; and (v) laggards (1995: 246-247). The speed of Estonian Internet adoption from 1991 to 2003 is shown in Figure 1.

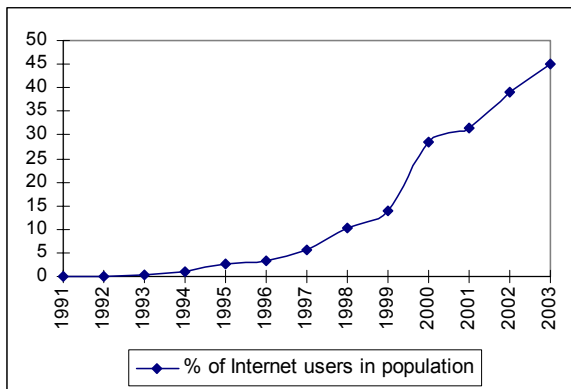


Figure 1. Speed of Internet adoption in Estonia (sources: Eurostat and Emor)

In our study, the adopter categories are based on how long a person has used computers. The categories are based on the empirical material and are: (i) early adopters (using computers for more than 6 years); (ii) mid-way adopters (using computers for 2-5 years); and (iii) recent adopters (using computers for less than 2 years); but as the computer users were still less than 50% of the respondents by the time of the study, these categories correspond to Rogers’ innovator, early adopter and early majority categories.

An even more detailed look at Internet users has been initiated by social scientists, who have been attempting to develop detailed tools to research Internet users, and have, therefore, composed user typologies. There have been both qualitative research (e.g. Bakardijeva-Smith, 2001) and quantitative-data based (e.g. Katz and Rice, 2001; Howard, Rainie and Jones, 2002) user typologies developed. Different uses and users also appear in Miller and Slater’s already classic ethnography on Internet use among Trinidadians (2000). Shah, Kwak and Holbert suggest:

As Kraut *et al.* (1998) assert, theories about the social effect of “new media” must consider more than the “attributes of the technology alone”, because people can use the Internet in a variety of ways and for a range of ends (2001:142).

One way of identifying Internet users in more detail is discussed by Anderson and Tracey (2001):

It is in the context of these uneven growth patterns that the debates about exclusion and inclusion – whether by age, economic capital, or geography – take place (e.g. see Patterson and Wilson, 2000).

Although it is tempting to reify these debates in socioeconomic terms, to do so overlooks the importance of social and cultural capital. Therefore, we have attempted to identify other categories to help us to compare the differences in socio-demographics with capitals. Our choice of the main theorist about capitals was Bourdieu as he has developed the most comprehensive system of capitals, which allows us to take into account several of the measures needed to incorporate into the same discussion economic, social and cultural issues.

The idea to research capitals in relation to Internet use is not entirely new, as some researchers have also combined Internet use with questions about social capital. Shah, Kwak and Holbert (2001) argue “that informational uses of the Internet are positively related to individual differences in the production of social capital, whereas social recreational uses are negatively related to these civic indicators” (2001: 141).

Wellman *et al.* (2001) also look at the question of whether the Internet does increase, decrease or supplement social capital. Among other things, they point out that the Internet supplements real-life relations; heavy Internet use can be associated with increased participation in voluntary organizations and politics. However, they conclude that “although we have shown that the Internet affects social capitals, the mechanisms are unclear” (Wellman *et al.*, 2001: 451) and call for further, more detailed research.

The problem with these approaches for the current research is that when defining social capital, they use the research of Robert Putnam (Putnam, 2000), who refers to social organization, such as trust, norms and networks that can improve the efficiency of society by facilitating coordinated actions. Putnam’s use of social capital is far more organisation-oriented. In an email quoted by Wellman *et al* he says: “I think you are a wild-eyed optimist to think that person-to-person networks are just as good as, if not better than old-fashioned door-to door (or rather face-to-face) networks” (2001: 439). As Putnam has been used with very mixed results, we decided to apply a different approach and use Bourdieu’s theoretical framework, thus enabling ourselves to make comparisons with cultural and economic capital and analyse the capital structures together. A coherent use of Bourdieu allows us to orient ourselves towards private parts of people’s lives, whereas if we used Putnam; we would open ourselves up to a discussion about the public sphere.

## 2.1. INDEXING CAPITALS

In applying the concept of capital to this research project, we have used capitals mostly in the functional sense. As the notion of capital is very complex, and each capital consists of a number of different factors, we have had to combine various questions. In calculating capitals, we have used the indexing method, which calculates the sums of different questions into capital indices. Indices were then were normalized to five: (i)



very little; (ii) below average; (iii) average; (iv) above average; and (v) very much. The following will give an overview of how we define capitals for this research project, providing both theoretical and empirical definitions.

### *2.1.1. Economic capital*

As Bourdieu has defined his cultural, social and symbolic capital to be in opposition to, and to stand out from, commonly used economic capital, he doesn't provide elaborate definitions. In general, he sees capital as rationally manageable, like one of its realisations, money, making it easy to calculate and predict (Bourdieu, 1994). He sees economic capital to be mostly financial assets, but his main point about various forms of capital is that they should be recognised as having value and they can be traded or exchanged (Webb *et al.*, 2002: 109).

In order to calculate financial assets, we did not use the measure of net –income, as people's purchasing power (and thus their economic assets) differ. Instead, we use the notion of economic capital as a purchasing power index. We asked whether people felt they had enough money for different purchases (for example, for food, clothes, utilities, books, recreation and car expenses), the list of 23 questions was then normalized to a scale, from "1" (missing) to "5" (very much).

### *2.1.2. Cultural capital*

Cultural capital is seen by Bourdieu as "primarily legitimate knowledge of one kind or another". Cultural capital is a form of value associated with culturally authorised tastes, consumption patterns, attributes, skills and awards. Within the field of education, for example, an academic degree constitutes cultural capital (Webb *et al.*, 2002). Cultural capital can be measured in three forms, relating to: (i) individuals (as their educated character, knowledge, accents, dispositions to learn); (ii) objects (such as books, qualifications, 'knowledge machines' such as computers); and (iii) institutions (such as libraries, schools and universities).

Although cultural capital has been operationalised in various ways, for this research project, cultural capital (normalized to the 1–5 scale discussed above) is the sum of the following indices, which we use in order to normalize the impact of different single questions: a cultural participation index consisting of eight different activities such as like going to theatre, movies, concert, singing, dancing, participating in creative activities; a cultural activities index consisting of 16 different activities such as keeping a diary, writing poetry or stories, making songs, singing or participating in plays, playing an instrument, taking photographs, hand crafting; a diversity of cultural interests index consisting of music (items), film (items) and book (items) interest lists; and a cultural resource index consisting of years spent in school, language skills index and cultural resources available in the childhood home<sup>1</sup>.

### *2.1.3. Social capital*

Social capital is defined by Bourdieu (1977: 503) as a "capital of social relationships" which will provide, if necessary, useful 'supports': a capital of honourability and respectability, which is often indispensable if one desires to attract clients in socially

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<sup>1</sup>Component indices for cultural capital were normalized to a scale from "1" (very little) to "4" (very much).

important positions, and which may serve as currency, for instance, in a political career (Field, 2003:14–15).

Bourdieu refined this concept later as a “sum of resources, actual or virtual, that accrue to an individual or a group by virtue of possessing a durable network of more or less institutionalised relationships of mutual acquaintance and recognition” (1992: 119).

As measuring social networks on their own is a relatively complicated research task, we could not afford to do this in an already massive data collection. Therefore, in order to sum the resources of social capital, we used the system of indices. Social capital was measured through the number of friends, relatives (24 locations) and colleagues (24 locations) all in foreign countries counted. An identity question was used to count how many social groups one could identify oneself with (in total 13 groups were used, e.g. friends, family members, people with shared experiences and tastes). Respectability was identified as “how often your friends and relatives ask for your advice”<sup>2</sup>.

### 3. Methodologies: Survey

The current study is part of a larger survey conducted in Estonia in December 2002 to January 2003. To overcome the limits of a quantitative methodology, the survey design was very wide-scale and complex. The survey covers a range of topics from individual’s views towards changes in their personal life and in the society at large, their habits and everyday practices: cultural activities, consumption, participation in politics and the public sphere, questions about trust, values and identities and, finally, media consumption, usage of computers and the Internet. The basic idea behind the survey was that in contemporary society, media in general are important resources for cultural and social capital for the audience. At the same time, patterns of media use reflect social and cultural divisions in society.

Similarly to Bourdieu, the research design was based on close contact with the research subject – Estonian society. The members of the research team have long experience in various fields of research and methodologies. The questionnaire was developed through numerous meetings and field tests, which took more than a year. In-depth survey design was combined with complex data collection methods, in which the written questionnaire was supplemented by face-to-face interviews.

The sample included 1000 Estonians and 500 Russian speakers living in Estonia, which is representative of the population of Estonia. The study was based on the questionnaire filled in by the respondent him/herself, and an additional interview carried out by an interviewer.

A proportional model of the population was used according to the existing urban-rural population within regions of Estonia. To compile the sample, a stratified two-stage sampling method was used. First, the universe was divided into 150 sampling points all over Estonia according to the model. Primary sampling units were settlements (towns, country towns, villages) chosen by random sampling with a proportional likelihood related to the size of the settlement (number of inhabitants according to the National

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<sup>2</sup>Component indices for social capital were normalized to a scale from “1” (very little) to “4” (very many), except the question about asking for advice, which had a scale from “1” (rarely) to “5” (very often).

Registry address list). In every unit, other secondary sampling units – people – were chosen. In the apartments/private houses that were included in the sample, the so-called young-men-rule was applied (the youngest man between the ages of 15 and –74 years, who was at home was interviewed. If there were no men of that age at home, then the youngest woman between the ages of 15 and –74 years was interviewed). Additionally, a quota according to the native language was used (determined separately for each sampling point).

#### 4. How the Internet Is More and More Divided

In the following pages we will look at the different measures of Internet users as outlined in the theoretical chapter and compare them to elementary socio-demographics, such as gender, age and native language, and then show how capital and capital compositions influence the Internet-user measures in focus. In each category we present a table of socio-demographics and a graph of capital compositions.

##### 4.1. DIVISIONS INTO USERS AND NON-USERS

Table 1 provides an overview of the socio-demographic composition of Estonian Internet users.

*Table 1.* Socio-demographics: Internet users and non-users

	Users	Non-users
<b>Gender (<math>p&lt;0,01</math>)</b>		
Men	47,4	52,6
Women	39,4	60,6
<b>Age (years) (<math>p&lt;0,01</math>)</b>		
15–24	78,0	22,0
25–34	55,7	44,3
35–44	46,4	53,6
45–54	36,8	63,2
55–64	18,3	81,7
65–74	4,4	95,6
<b>Native language (<math>p&lt;0,01</math>)</b>		
Estonian	47,4	52,6
Russian	35,2	64,8
<b>Total</b>	<b>43,1</b>	<b>56,9</b>

Gender issues have been one of the most prominent issues in digital divide discussions. As has been found in world research (World Internet Project), Estonian women use the Internet a little less than men, but as has been noted elsewhere (Thomas and Wyatt, 2000) the access gender gap is closing.

The most important difference is with age: the highest usage percentage is among younger groups and there are just a few Internet users among the elderly. Estonia has an

ethnic division, Russian native speakers use the Internet somewhat less than Estonian native speakers.

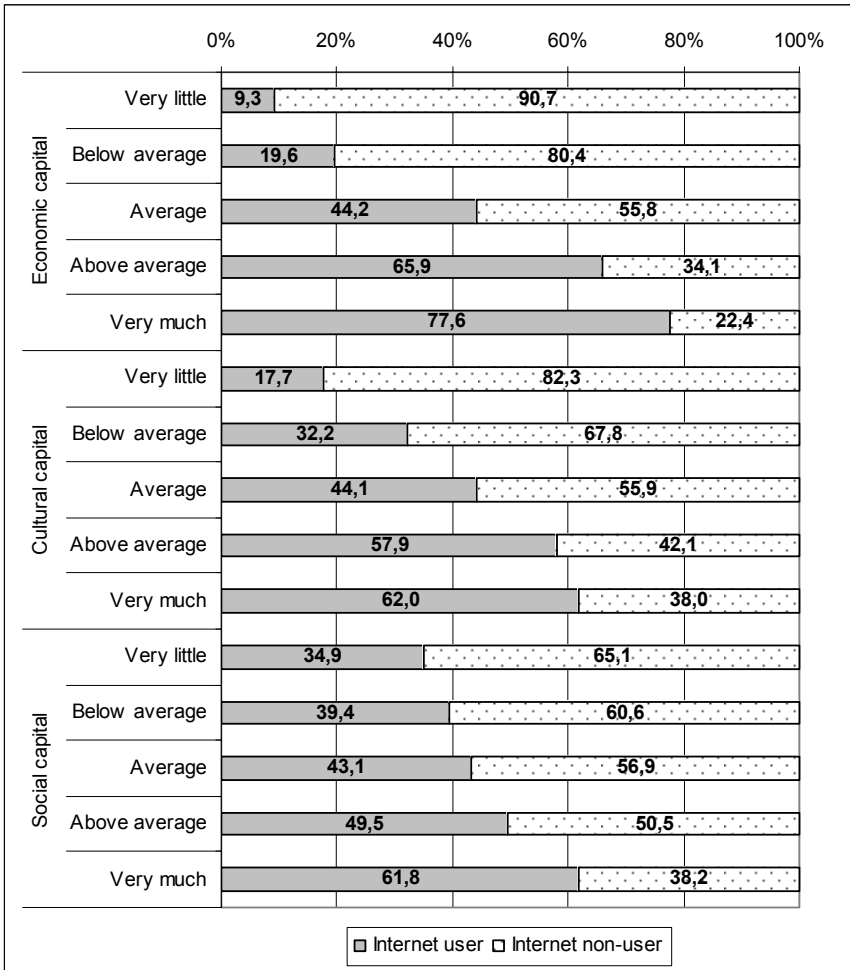


Figure 2. Comparison of Internet users and non-users according to social, economic and cultural capital ( $p < 0,01$ )

Figure 2 illustrates general tendencies of Internet use at higher levels amongst the higher capital compositions. The most visible differences are in the distribution of economic capital, where amongst those with very little, less than 10% actually use the Internet. These tendencies, although less sharply defined, are also visible within the other capitals. When looking at the groups with average economic, cultural and social capitals, a very similar breakdown of users and non-users of the Internet can be seen within the overall distribution.

#### 4.2 DIVISIONS BETWEEN EARLY STARTERS AND THOSE WHO ARE STILL CATCHING UP

Table 2 describes computer adopters according to length of use. In the gender split, there are a few more early and mid-way starters amongst men, but as these statistics are associated with a  $p$ -value of more than 0,05 the statistical significance of this finding can be questioned.

*Table 2. Socio-demographics: length of use*

	Started recently	Started mid-way	Started early
<b>Gender (<math>p&gt;0,05</math>)</b>			
Male	19,1	67,8	13,1
Female	25,6	62,9	11,5
<b>Age (years) (<math>p&lt;0,01</math>)</b>			
15–24	12,6	82,5	4,9
25–34	26,1	60,0	13,9
35–44	26,5	53,8	19,7
45–54	26,1	58,6	15,3
55–64	26,1	56,5	17,4
65–74	46,7	53,3	0,0
<b>Native language (<math>p&lt;0,01</math>)</b>			
Estonian	19,3	66,6	14,1
Russian	29,4	62,3	8,3
<b>Total</b>	<b>22,3</b>	<b>65,4</b>	<b>12,3</b>

It is important to note that more early adopters are amongst middle-aged generations and younger people have caught up within the mid-way period. It is good to see that among the over 65s there are approximately 47% of recent adopters. We hope that the spread amongst the elderly groups has just begun.

Figure 3 illustrates that the sum of the means of the different capitals is higher amongst those who started using computers earlier and lower amongst those who are recent starters. The means of the different capitals are higher in each type of capital separately as well. Comparing this with the previous figure 2, one might anticipate that people with lower capital compositions are starting to use the new technologies.

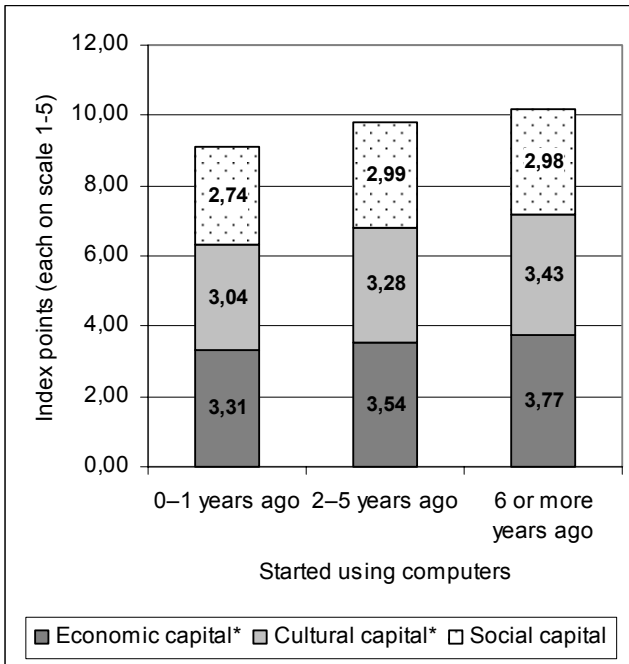


Figure 3. Composition of capitals by when an individual started using computers; comparison of means, (\* $p < 0,01$ )

#### 4.3. DIVISIONS IN DIFFERENT USE PRACTICES

Internet practices were composed by factor analyses of 23 questions about how often people use the Internet for listed services. Respondents were given three options: (i) often; (ii) sometimes; and (iii) never. From the factor matrix (see Appendix I) five factors were identified: (i) information; (ii) communication; (iii) portal; (iv) personal information; and (v) purchases. Using these factors with Two-Step Cluster analysis we produced Internet user clusters as can be seen in Figure 4.

Clusters are identified by the factors that they consist of. Versatile, interactive users use the Internet for everything, except, for them, the informational factor of the Internet is relatively less significant. Multiple information users use the Internet mostly for information purposes: economic, financial, legal and political information, and information regarding studies and professional occupation. These users also use the Internet for bank transactions and submitting government forms. Communicators are very active in using chat rooms, online-forms, games, mailing-lists, instant messengers and dating services. Private-life-centred services users are active in searching for dwellings, looking for jobs and travel information. Participators, more than others, use the Internet for reading and writing comments in portals, forums and news groups. They also use search engines more than average. Small-scale users use nearly everything on a relatively small scale.

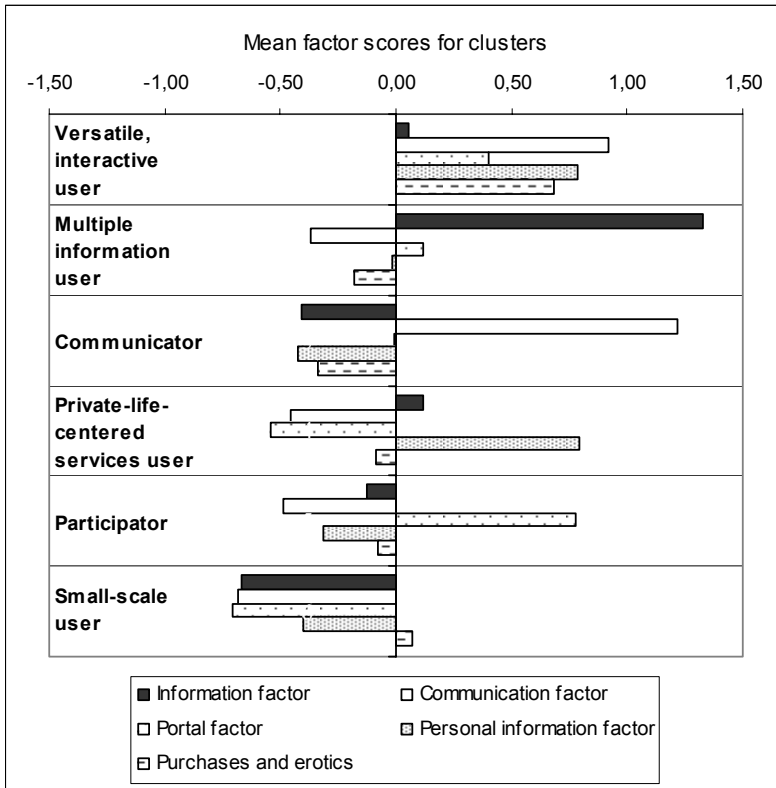


Figure 4. Factor composition of different Internet user clusters.

Using those clusters, we investigated the different use practices and examined them more closely. Table 3 characterises different Internet users by socio-demographics. In Table 3, we can see that the two smallest groups are Private-life-centred services users and Versatile, interactive users; there are only a few more Small-scale users.

As gender issues have been the focus of many Internet research projects, mostly from the access point of view (e.g. Pew Internet and American Life, World Internet Project, Anderson and Tracey, 2001), but also from use-practices point of view (e.g. Howard, Rainie, Jones 2002), we can not neglect the fact that women's Internet use is somewhat less oriented towards participation and interactions and somewhat more oriented towards private-life-centred services.

Age, which is the most important differentiator of our sample, also differentiates use practices. Most of the Communicators are 15–19-year-olds. Similarly, a large proportion of the Versatile, interactive users are amongst 20–29-year-olds. The elderly people make up a greater proportion of small-scale users and private-life-services users.

Differences between Estonian and Russian native speakers are mostly due to Estonians being more information centred and Russians being more communication centred.

Table 3. Socio-demographics: different Internet users

	Versatile, interactive user	Multiple information user	Communicator	Private-life- centred services user	Participator	Small- scale user
<b>Gender (<math>p&lt;0,01</math>)</b>						
Male	63,5	43,1	46,3	35,8	62,1	47,7
Female	36,5	56,9	53,7	64,2	37,9	52,3
<b>Age (years) (<math>p&lt;0,01</math>)</b>						
15–19	18,6	6,1	49,2	1,5	27,7	9
20–29	48	25,2	26,4	37,5	25,2	12,1
30–44	25,4	42	15,5	38,4	28,2	37,8
45–54	5,5	19,8	7	16,1	11,6	24,5
55–64	2,5	6,8	1,9	5,3	7,3	9
65–74				1,2		7,5
<b>Native language (<math>p&lt;0,01</math>)</b>						
Estonian	72,1	76,6	61,2	75,7	76,1	70
Russian	27,9	23,4	38,8	24,3	23,9	30
<b>Total</b>	<b>14,3</b>	<b>15,9</b>	<b>17,7</b>	<b>13,9</b>	<b>18,2</b>	<b>20</b>

The capital compositions of different Internet user groups (Figure 5) show that Multiple information users have the highest sum of capitals, whereas the smallest sum is with the Small-scale users. Yet, the different capitals are not distributed evenly.

Multiple information users have the highest level of economic capital, while Small-scale users have the lowest level. The highest level of cultural capital (although only by a margin) is in the Private-life-centred services users, whereas the lowest level is in the Communicators (who, at the same time, have the highest level of social capital). Small-scale users have the lowest social capital. Participators and Versatile, interactive users don't stand out.

## 5. How Capital Matters: Directions for Further Research

As the Estonian case illustrates, individuals with more capitals at their disposal have been able to adopt the Internet earlier and for a greater variety of different functions. It can be seen that economic capital is the most influential, yet cultural capital also differentiates Internet users in several ways. The following question arises: it is because more than half of those who have high economic capital also have high cultural capital?

Economic capital may dominate because, in a society in transition, economic capital may have overly important symbolic value. However, we can see that amongst Internet users who have recently started, there are more people with lower capital (all, economic, cultural and social), which indicates that the Internet is becoming widespread. According to the Estonian Internet users' s-curve (see Figure 1), one can see that we have reached the early majority stage and we are still waiting for the late majority to catch up. The late majority at the moment is less capitalised than the group who already use the Internet. For further research, it would be interesting to see whether



Internet use will increase or lower the average capital composition of Internet users. Another dynamic that should be researched is the kinds of Internet-use practice the new-comers adopt. Current data shows that there are a somewhat higher proportion of recent adopters amongst Small-scale users and communicative-relationship-oriented users. Those two use types also show the lowest capitals.

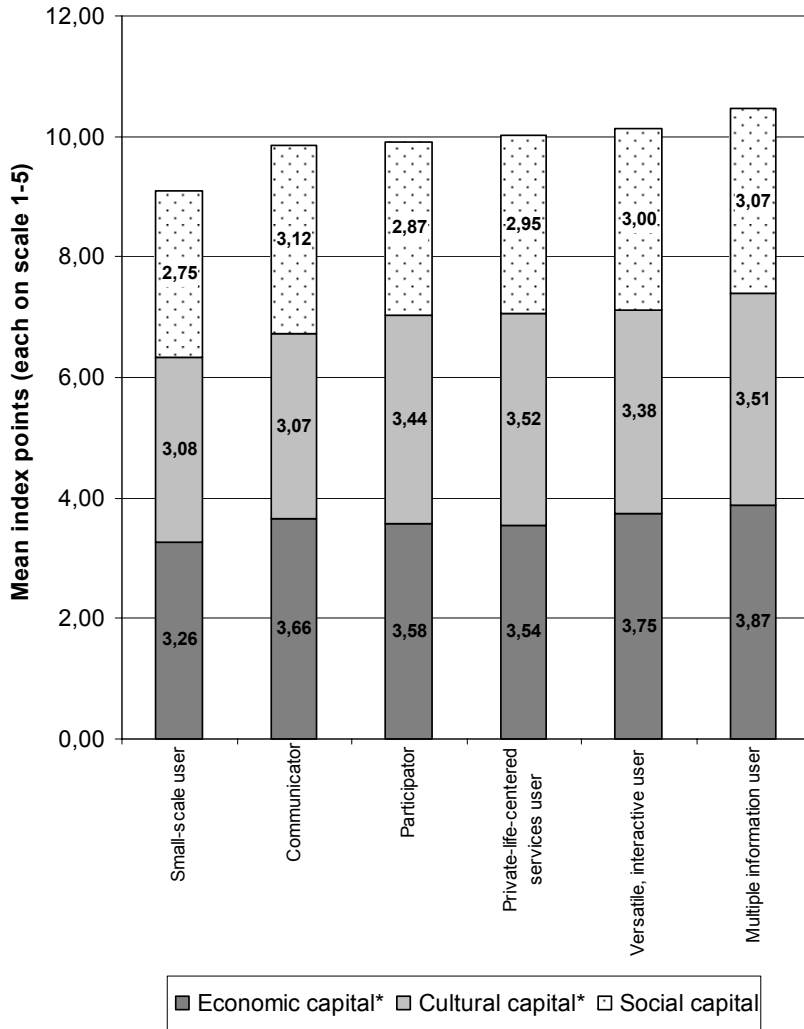


Figure 5. Composition of capitals of different Internet use practices ( $*p < 0,01$ )

Looking at the digital divide discourse that has been occurring in Estonia (Kalkun and Kalvet, 2002), one can see that the Estonian late majority and late adopters have already been labelled as Passive People and Blue Collars, which are somewhat

judgemental terms. It seems that they have already been classified as laggards who need extra pressure to join Internet users. Yet, when we compare these groups using capitals, we can also talk about the issue of digital choice (a term introduced by W. Dutton<sup>3</sup>). This shows that people with lower capital are making choices about where to apply their resources. Amongst the non-users, there are also people (even if in the minority) whose resources would permit them to adopt the Internet, but they have made a choice not to do so at this particular point in time.

The digital-choice discussion also applies to early adopters. The majority of them have high economic and cultural capital, enabling them to take economic risks in regard to technology failure and cultural risks in terms of dealing with “unpopular” technology. The Internet has increased in symbolic capital very quickly over time, thus making it possible for groups who are not so free to take risks to adopt new technology with significantly lower risks of failure. Early and mid-way adopters have also made technology cheaper and, due to the network effect, more valuable for those who adopt it later. This again supports the digital-choice argument – those adopting the technologies now have potentially more knowledge about them and their potential, with lower capital investment. An individual would have had to have very high cultural capital to know about the Internet in the early 1990s and a significant amount of economic capital (or access to organisations with economic capital), in order to access it.

According to the trickle-down view, there might be inequalities of access and use during the early stages of a technology but it is assumed that these disappear, or are at least much more reduced, as the technology becomes much more widely diffused (Thomas and Wyatt, 2000: 26). The absolute increase in numbers of Internet users will necessarily lead to less inequality (Thomas and Wyatt, 2000: 30)

For further research, it would be interesting to compose more elaborate indices of Internet connectedness, summarizing different scopes and practices of computer and Internet use, and values and gratifications received from Internet use (as in Jung, Qiu and Kim, 2001).

The current research project will be expanded with qualitative follow-up surveys to see what exactly makes up the capital of earlier adopters and whether the capital composition can be seen to change over time with Internet use.

According to Bourdieu, different forms of capitals play crucial roles in the reproduction of dominant social relations and structures, for instance, “cultural capital of knowledge is inequitably distributed, tending to favour those who occupy positions and dispositions that provide access to these socially legitimated and valued ways of knowing, knowledge becomes a marker of distinction and social privilege” (Webb *et al.*, 2002:110).

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<sup>3</sup> Oral presentation in Oxford Internet Institute Doctoral Summer School, 2003

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### Appendix I: Factor analysis of services used with Internet ( $n = 550$ )

Rotated Factor Matrix	Factor				
	Information	Communication	Portal	Personal information	Purchases and erotica
Economic and financial information	<b>0,701</b>		0,177	0,106	
Legal information	<b>0,690</b>			0,126	
Professional information	<b>0,667</b>		0,207	0,164	-0,133
Submitting tax returns and other official applications	<b>0,642</b>				0,215
Bank transactions and bank information	<b>0,556</b>			0,139	0,247
Political information	<b>0,539</b>		0,306	0,136	
Information related to studies	<b>0,408</b>	0,223	0,345	0,136	-0,298
Information about health, family relations and children	<b>0,367</b>	0,133	0,194	0,211	
Chat rooms	-0,126	<b>0,850</b>	0,103		
Participating in chat rooms and forums		<b>0,834</b>	0,156		
Playing online games		<b>0,471</b>	0,188		0,210
Dating services		<b>0,424</b>	0,132	0,302	0,141
Participating in mailing lists	0,125	<b>0,414</b>	0,288	0,131	
ICQ and MSN – instant messenger	0,152	<b>0,404</b>	0,276		
Reading comments from portals	0,111	0,169	<b>0,663</b>	0,108	0,156
Forums and newsgroups	0,184	0,271	<b>0,596</b>		
Writing comments in portals		0,268	<b>0,503</b>		0,263
Search engines	0,295	0,248	<b>0,477</b>		
Looking for a dwelling (house, flats)	0,283			<b>0,639</b>	0,112
Looking for a job	0,204	0,118	0,128	<b>0,490</b>	
Travel information	0,393			<b>0,455</b>	
Purchases and auctions	0,155	0,120	0,118		<b>0,381</b>
Erotica		0,230	0,129	0,158	<b>0,323</b>

Extraction Method: Principal Axis Factoring, Rotation Method: Varimax with Kaiser Normalization.

## UUS MEEDIA EESTIS

Pille Vengerfeldt ja Pille Runnel

### 8.1. Mis on uus meedia

#### 8.1.1. Sissejuhatus

Uut meediat on väga raske defineerida, kuna tegelikult ei ole ühtki iseseisvat aparati või tehnoloogiat, mida selle mõistega tähistada saaks. Isegi sagedasti kasutatav lühend IKT märgib info- ja kommunikatsioonitehnoloogiaid mitmuses. Tavakasutuses räägime uuest meediast ennekõike kui arvutitest ja Internetist. Laiemas kasutuses hõlmab see endas ka muid digitaalselt tekitatavaid ja või edastatavaid signaale, muuhulgas näiteks mobiilsidet, mängukonsoole, reklaamisüsteeme, digitaalset telefonisidet, erinevaid interaktiivseid süsteeme, infokioskeid ja muud.

Uueks meediaks on varasematel aegadel nimetatud ka muid meediume. Nii oli 1950. aastatel "uus meedia" televisioon, enne seda aga raadio ja telegraaf. Alates 1960. aastatest on uus meedia hõlmanud pidevalt avarduvat rakenduslike kommunikatsioonitehnoloogiate kogumit (McQuail 2003: 25).

Käesolev peatükk annab ülevaate uuest meediast ennekõike Interneti tähenduses. See ei tee aga olukorda üldse mitte lihtsamaks – Internet on pärisnimi, mis tähistab ülemaailmselt arvutivõrgustikku, mis töötab TCP/IP protokollil. Väikese tähega kirjutatult tähistab "internet" aga erinevaid ülemaailmseid arvutivõrke.

Kommunikatsiooniteaduslikust vaatepunktist on Internet erilaadsete kommunikatsioonikanalite mitmekülgne kogum ja multimediaalne publitsereimisvahend, mis võimaldab edastada või vahetada nii tekstilist, helilist kui ka pildilist infot (joonis 8.1). Interneti osaks on nii staatilise ülesehitusega visuaalset ja tekstilist infot kombineerivad veebiküljed (WWW) kui ka reaajas toimuv multimeediatiseeritud otsesuhtlus kahe inimese või paljude

#### Kiil 8.1. Mis on uus meedia

- Arvutid ja Internet
  - Mobiilside
  - Mängukonsoolid
  - Reklaamisüsteemid
  - Digitaalne telefonside
  - Muud interaktiivsed süsteemid
  - Infokioskid
- jpm

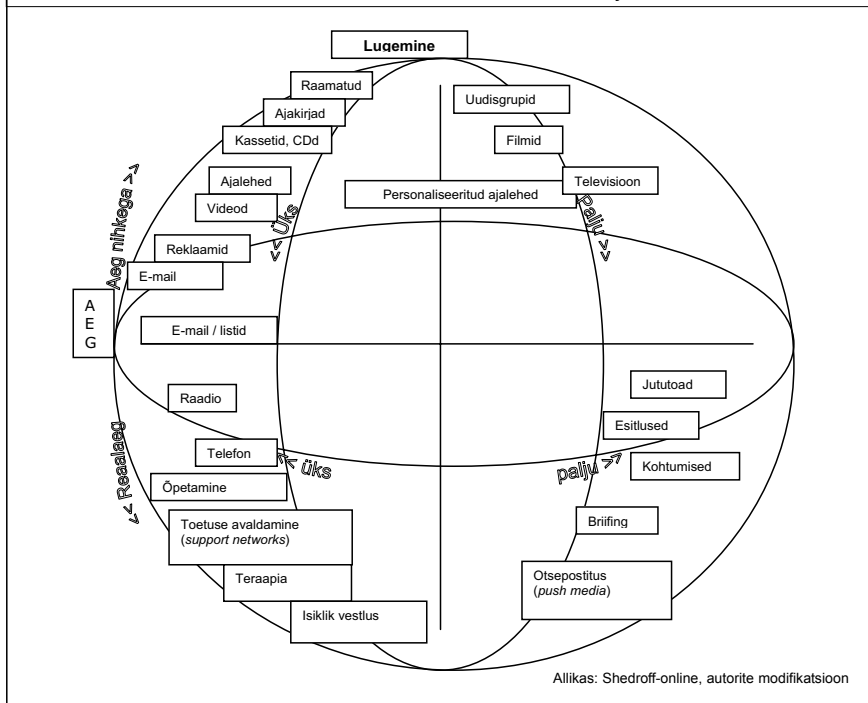
eri osavõtjate vahel (eri vormides nagu videokonverentsid, MSN, veebitelefonid jms). Näiteks võimaldab e-mail ühelt poolt kahe inimese privaatset suhtlust, kuid samaaegselt on e-mail ka vahend väiksema või suurema rühma omavaheliseks suhtlemiseks. E-mailitsi on võimalik olla ka piiramatult arvuga osalejate ning sõnumiloojate listi telijaks.

Hoolimata Interneti mitmekesisusest on siiski teoreetikuid (vt pikemat käsitlust McQuail 2003), kes kõhklevad Interneti omaette meediumiks nimetamisel, väites, et hoolimata iseloomulikest tehnoloogiast, tarbimisviisist, sisust ning teenuse ulatusest, on siiski tegemist vaid marginaalse massikommunikatsiooni vahendiga.

Meediauurijad Morris ja Ogan (1996) nimetavad Interneti mitmenäoliseks massimeediaks, mis sisaldab mitmeid erinevaid konfiguratsioone ja mitmekülgset kommunikatsiooni. Selle mitmekesised vormid näitavad interpersonaalse ja massikommunikatsiooni seotust.

Kui lähtuda massikommunikatsiooni mudelist, näeme, et Internet mängib traditsioonilise massikommunikatsiooni allikas-sõnumi-vastuvõtja mudeliga, paigutades seda ajalt traditsioonilistesse muustritsetesse, kuid vahel ka täiesti uutesse konfiguratsioonidesse. Interneti vahendatud kommunikatsioonis võib sõnumi vastuvõtjate arv varieeruda ühest inimesest kuni potentsiaalselt miljoniteni (vt Morris & Ogan 1996).

Joonis 8.1. Visuaalne taksonoomia erinevatest kommunikatsiooni ja interaktsiooni vormidest



Osa Internetiga seotud kommunikatiivsetest struktuuridest on avaliku juurdepääsuga – kättesaadav potentsiaalselt ükskõik kellele, samas kui teistele kanalitele võib juurdepääs olla piiratud.

Interneti teel vahendatav sõnum võib esineda paljudes vormides, näiteks reglementeerimata vaba vestluse kujul (nt Interneti jututubades), traditsioonilise ajakirjandusteksti kujul (mille loomisel ja vahendamisel osalevad ka toimetajad), või kollektiivselt loodava teksti näol (nt hobikogukonna foorum). Igas arutivahendatud kommunikatsiooni etapis võib varieeruda kommunikatsiooni mudel, vorm, žanrid ja koodid. See teeb Interneti kommunikatsiooni vaatepunktist n-õ katusterminiks, mille alla koonduvad äärmiselt varieeruvad kommunikatsiooni vormid.

### 8.1.2. Mis teeb tänasest digitaalsest meediast uue meedia?

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Sotsiokultuurilisest aspektist vaadatuna on selleks esmajoones uued tekstilised kogemused: uued žanrid, tekstivormid, hüpertext, mis loovad uusi väljendusviise ning uusi suhteid subjektide vahel.

Lisaks nimetatakse karakteristikutena uue meedia kasutajaid, tarbijaid, uusi tehnoloogiaid endid ja selliseid kogemuslikke muutusi nagu uued identiteedid; kogukonnad; bioloogilise keha ja tehnoloogia vahelised suhted: virtuaalsus; kehalisus, samuti uued organisatsiooni ja tootmise mustrid (Lister jt 2003: 12). Uue meediaga kaasnevateks nähtusteks on eelkõige arvuti vahendatud kommunikatsioon ning uued meediatekstide levitamise ja tarbimise viisid, virtuaalne reaalsus ning olemasolevate meediavormide muutus (Lister jt 2003: 13).

Uue meedia määramisel eristatakse peamiselt viit olulisemat eristavat tunnust.

**1. Digitaalsus.** Andmeid edastatakse, töödeldakse ja säilitatakse ühtede ja nullide kujul, mis võimaldab neid kiiremini ja kergemini töödelda, kasutada neid mittelineaarselt ja säilitada neid väga väikeses ruumis. Lisaks toob digitaalsus kaasa meedia dematerialiseerumise.

**2. Interaktiivsus.** Märksõna tähistab meedia-kasutaja aktiivset kaasatust meediasse, võimalust osaleda meediasisu loomisel. Mõiste ei iseloomusta mitte ainult uut meediat, kuid just uue meedia puhul on võimalik rääkida kasutajate rollide paljususest. Uue meedia keskkonnas on interaktiivsus

**Kiil 8.2. Uue meedia määratlemise tunnused**

- **Digitaalsus** – andmeid edastatakse, töödeldakse ja säilitatakse ühtede ja nullide kujul.
- **Interaktiivsus** – meediakasutaja aktiivne kaasatus meediasse.
- **Hüpertekst** – tekst, mis on sisemiste viidetesüsteemide kaudu mitte-lineaarne.
- **Hajusus** – uue meedia fragmenteeritus nii meedia-tekstide tootmises kui ka tarbimises.
- **Virtuaalsus** – metafoorsed kommunikatsioonikatsioonivõrgustikes asuvad ruumid; ruum, milles online-kommunikatsioonis osalejad tunnevad end olevat.

defineeritav eriti kahel viisil: a) protsess, mis annab kasutajatele õiguse kontrollida informatsiooni esitusjärjekorda; b) uudiste tootja ja tarbija vaheline aktiivne suhtlus (tagasidie olemasolu).

**3. Hüpertekst.** Uue meedia puhul räägitakse hüpertekstist kui tekstist, mis on sisemiste viidetesüsteemide kaudu mittelineaarne ja kus tekstiosade (või tekstide) vahelised seosed saavad hüperlinkide kaudu nähtava vormi. Hüpertekstuaalsuse mõistega on seotud ka erinevate meediumide omavaheline koondumine ehk konvergens, mis tähistab võimalust tekste, pilte ja helisid edastada ühe ja sama meediumi kaudu.

**4. Hajusus.** See märksõna tähistab uue meedia fragmenteeritust nii meediatekstide tootmises kui ka tarbimises. Hajusus viitab muuhulgas ka uue meedia detsentraliseeritusele, individualiseeritusele ja igapäevaelu sulandumisele.

**5. Virtuaalsus ja virtuaalne.** Need märksõnad on uue meediaga seotud ennekõike virtuaalse reaalsuse mõiste kaudu, mida loovad uued pildi ja simulatsioonitehnoloogiad ning mille all mõistetakse ka metafoorseid kommunikatsioonikatsioonivõrgustikes asuvaid ruume. Virtuaalse reaalsusega märgitakse ka ruumi, milles online-kommunikatsioonis osalejad tunnevad end olevat.

### 8.1.3. Interneti arengu algusaastad Eestis

Kui püüda saada ülevaadet Eesti uue meedia keskkonna arengust, selgub, et olemasolevad ülevaated on peamiselt tänase hetke kesksed. Esimesi ülevaateid on hakatud kirjutama alates 1997.–1998. a, kuid nendes puudub faktidele orienteeritud täpne tagasivaade varasemale. Nii võib öelda, et Eesti infoühiskonna-alane eneseteadvus on tegelelenud peamiselt tulevikku vaatamisega ja varasema jäädvustamine on digitaalse meediumi hoolde usaldatud. Tulemuseks on aga tihti see, et olnut saab vaid umbes meenutada.

Kõigepealt lühike ülevaade infotehnoloogia varasest arengust Eestis. Eesti infotehnoloogia arengut on vedanud peamiselt haridusametused. Nii oli näiteks Nõo Keskool esimene üldharidus-

kool kogu NSV Liidus, kus oli arvuti ja arvutitunnid.

Esimene kontakt ülemaailmse arvutivõrguga FidoNet (kommuteeritavatel telefoniliinidel põhinev amatööride arvutivõrk) oli Eestis 1989. a lõpus, mil käivitati esimene postkast. Järgmisel kevadel liitus Eesti Soome kaudu ka ülemaailmse FidoNeti<sup>1</sup> võrguga. Kuigi tegemist pole tehnoloogilises mõttes Interneti eelkäijaga, märgitakse seda sündmust siiski olulise sammuna Eesti info- ja kommunikatsioonitehnoloogia arengus. Augustis 1990 alustasid Küberneetika Instituudi töötajad Interneti elektronposti kasutamist. 1991. a tehti Tartu Ülikoolis, Eesti Biokeskuses ja ajalehes *Postimees* esimesed TCP/IP katsetused (põhiline protokolliperekond Interneti püsühenduste jaoks). Samal aastal jõudis elektronposti ühendus esimesse kooli – Tartu I Keskkooli.

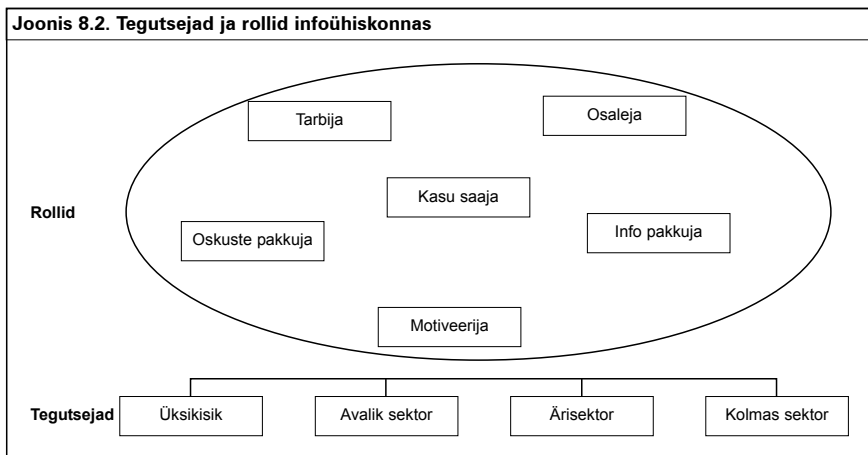
1991. a moodustati Eesti Hariduse ja Teaduse Andmeside võrk, mis sellest ajast peale on koordineerinud Eesti Interneti arengut, pakkudes ühendusi teadus- ja haridusametustele, ning mis veelgi olulisem – ka .ee domeeninimesid jagades.

Eesti Interneti alguseks võib lugeda 26. märtsi 1992, sest siis käivitus esimene TCP/IP ühendus Eesti ja muu maailma vahel. TA Keemilise ja Bioloogilise Füüsika Instituudi (KBFI) ja Rootsi Kuningliku Tehnikaülikooli (KTH) vahel pandi tööle 64kbit/s satelliidühendus. 3. juunil 1992 registreeris Keemilise ja Bioloogilise Füüsika Instituut .ee domeeni ja sellega sai Eestist ametlikult Interneti liige. Esimesed teise taseme domeeninimed .ee all olid kbfi.ee, goodwin.ee, org.ee, eii.ee, fsoi.ee, ebc.ee, obs.ee, postimees.ee, ioc.ee

Edasi on Eesti Interneti arengut võimalik vaadelda väga mitmel tasandil. Näiteks on EENeti koduleheküljelt võimalik leida Eesti haridus- ja teadusametuste, põhiliselt tehnoloogilist laadi Interneti ajaloo ülevaate (<http://www.eenet.ee/EENet/ajalugu.html>). See on ka üks vähesi järjekindlaid ajalookäsitlusi, mis ulatub välja tänasesse päeva. Enamik muid ülevaateid ja aruandeid algavad, nagu eelpool mainitud, 1997.–1998. aastast ja paljud neist ei ole järjekindlad.

Eesti uue meedia keskkonna arengut võib kaardistada erinevate lähenemisnurkade kaudu, kuid järgnevas ülevaates on valitud kasutajate keskne lähenemine. Kui muude meediakanalite puhul moodustavad auditoriumi peamiselt indiviidid, siis uue meedia auditoriumide puhul on indiviidide kõrval vaja rääkida ka riigi- ja erasektorist. Kuigi arusaam meediaauditooriumist kui passiivsest inimrühmast on ammu aegunud, on

<sup>1</sup> FidoNet on nimetatud leiutaja koera Fido järgi ja selle tehnoloogia eesmärk oli kasutada ära õiseid odavaid telefonitarife automatiseerides elektronkirjade vahetuse.



uue meedia puhul otstarbekam rääkida kasutajatest läbi nende erinevate võimalike rollide ning tegevuste. Joonis 8.2 annab ülevaate kasutajarühmadest ja nende võimalikest rollidest Eesti infoühiskonnas.

## 8.2. Online-ajakirjandus

### 8.2.1. Online-ajakirjanduse kujunemine

Interneti kujunemisel oli keskne roll mitmesugustel spetsialistidel, sealhulgas akadeemilistel kogukondadel ning tudengitel. Massikommunikatsiooni kanalid olid ühed esimesed Interneti kasutuselevõtjad alles siis, kui Internet muutus murranguliselt üldkasutatavaks kommunikatsioonimeediaks. Traditsioonilistel meediakanalitel võis uue kommunikatsioonikanali kasutuselevõtt toimuda paljudel juhtudel n-ö igaks juhuks, kuna ei osatud tajuda selle osa võimalikus elektroonilises konkurentsias ja selle majanduslikku potentsiaali või võimalusi.

Kommunikatsioonitehnoloogiate üldine konvergeerumine muutis ilmsiks, et uut meediat on raske käsitleda massimeediana. Internet ei seostunud pikka aega massikommunikatsiooni uurijate arusaamadega massimeediast ka seetõttu, et üldised arusaamad olid seotud trüki ja elektroonilise meedia mudelitega (Morris & Ogan 1996). Arusaam massikommunikatsioonist muutus tervikuna koos uue meedia ilmumisega pigem seetõttu, et ka traditsioonilise massimeedia auditoriumid muutusid järjest fragmenteerunumaks. Meediauurijail muutus raskeks käsitleda neid massina. Pigem võis auditoriumi näha järjest enam hoopis

kui identifitseeritavate isikute kogumit. Sellisesse vaateviisi kohaselt saab meediana käsitleda ka Interneti.

Traditsioonilisele massimeediale tähendas Interneti kui kanali kasutuselevõtt esmalt traditsiooniliste kommunikatsiooniviiside kopeerimist ja rakendamist elektroonilises keskkonnas. Eialgu säilisid mitmed tavameediale iseloomulikud tunnused (nt igapäevaselt ilmuvate ajalehtede elektrooniliste versioonide 24tunnine ilmumistsükkel). Päevalehtede võrguversioon kopeeris paberväljannet ka sellega, et see ei olnud reaalselt muutuv ega interaktiivne (lugejapoolset tagasisidet ei võimaldanud muudu kui traditsiooniliste lugejajakirjade vormis). Võrgukeskkonnas kadusid paberväljande iseloomulikud elemendid (nt ajalehtede võrguversioonid ei sisaldanud jooniseid ja graafikat, kadunud oli ka ülesehitusele iseloomulik struktuur).

Traditsioonilise ajakirjanduse kõrval tuli peatselt käibe online-ajakirjanduse mõiste. Online-ajakirjandus (ka võrguajakirjandus, reaalselt ajakirjandus – *online journalism*) tähistab tänapäeval mitte võrgupeegeldust, vaid “jooksvalt reaalselt sündivat ja tarbitavat ajakirjandust” (vt nt Tähismaa 2003; ka *Online Journalism Review*). Terminiga tähistatakse ajakirjandust, mis luuakse otseselt Interneti tarbeks ning mida ka tarbitakse Interneti vahendusel.

Meediateoreetilisel on online-ajakirjanduse peamine erinevus traditsioonilisest ajakirjandusest kontekstualiseerimine ehk võime rikastada teksti laiema “pildiga”. Selle teevad võimalikuks uue meedia sellised eelpoolnimetatud kesksed tunnused nagu digitaalsus, interaktiivsus, hüpertextuaalsus, hajusus ning virtuaalsus. Online-



### Kiil 8.3 Online-ajakirjanduse peamised erinevused tavalisest ajakirjandusest

- Kontekstualiseeritus ehk võime rikastada teksti laiema pildiga.
- Tarbijakesksus.
- Auditoriumi suurem osalus.
- Dünaamilisus – võime kiiresti, reaaliajasa reageerida toimuvatele muutustele.

ajakirjanduse kontekstualiseeritust võiksid iseloomustada näiteks sellised tegurid nagu tarbijakesksus, auditoriumi suurem osalus ja ka dünaamilisus (võime kiiresti reageerida toimuvatele muutustele).

Online-ajakirjanduse keskmel on traditsioonilise ajakirjanduse vaatepunktist kindlasti online- uudised – spetsiaalselt Internetis avaldamise jaoks loodud ja Internetis tarbitavad uudised. Sisuliselt tähistabki online-uudiste teke järgmist faasi traditsiooniliste meediaväljaannete (eriti siis ajalehtede) internetikasutuses, mil mindi paberväljaande tekstis tisis peegeldamiselt üle paberväljaandes avaldatu ning Internetis avaldatu kombinatsioonile, mille keskmesse tõusis spetsiaalselt Internetile toodetav meediasisu. Väljaande online-versiooni sisu ei kattu tänapäeval enam üks-ühele väljaande trüki-versiooniga. Online-uudised erinevad tavauudistest vormiliselt selle poolest, et online-uudisele võivad olla lisatud mitmed uued võimalused nagu liikuv pilt ja heli. Online-uudist eristavad klassikalisesest uudisest näiteks operatiivsus ja edastatavus reaaliajasa; piiramata maht; multimeedia võimalused; paindlikud edastamisvõimalused; interaktiivsus (vt Tähismaa 2003).

Online-ajakirjanduse teke tõi kaasa ka uuenudis uudiste tootmise protsessis endas: mõnel juhul laiendati toimetuste koosseisu online-toimetajate või ka spetsiaalselt online-toimetusele töötavate reporteritega. Eesti ajalehed on siiaamaani rakenandanud kahte selgemini eristuvat online-uudiste tootmise viisi, millest ühel juhul korraldati ümber põhitoimetuse töö nii, et online-uudiste tootjaks on lehes juba ennegi töötavad ajakirjanikud. Tähismaa (2003) hinnangul käsitlevad ajakirjandusväljaanded online-uudist iseseisva tootena, mis valmib iseseisva kirjutamise ja toimetamise protsessi tulemusena sõltumata sellest, kas teksti autoriks on sama ajakirjanik, kes kirjutab loo ka paberväljaandele, või iseseisev töötaja.

Traditsiooniline elektrooniline meedia otsib online-keskkonnas eelkõige lisaväärtust, laiendust oma programmile. Telekanalide iseloomustab seejuures näiteks mitte reaaliajasa uudiste esitamine (mida samuti kasutajatele pakkuda püütakse), vaid rõhuline meelelahutuslikule poolele, näiteks fännikülgede ja kogukondade loomine, saadetele ja

filmidele lisainfo pakkumine, programmi mõnede osade (esmaajonees omatoodangu) taasvaatamise- või kuulamise võimalused jms. Raadiole on iseloomulik ka spetsiaalsete Internetiraadiote tekkimine, mille programm ongi kättesaadav vaid Interneti vahendusel (vt 5. peatükk, alaosa 5.5).

Maailma online-ajakirjanduse arengut on võimalik lülitada online-keskkonna arenguskeemi, milles eristatakse kolme suuremat arenguastet või lainet: 1982–1986, 1993–2001, alates 2001. a (tabel 8.1).

Esimest perioodi 1980. aastate keskel iseloomustasid traditsioonilise meedia vaatepunktist eelkõige eksperimendid, nt muudest kanalitest pärit uudiste edastamine teleteksti kaudu. Teenus osutus siiski ebaõnnestunuks ja suri 1986. aastaks välja (*Online Journalism Review*). Samal ajal ilmusid ka esimesed infoväravad ehk portaalid, mis spetsialiseerusid Internetis uudiste vahendamisele ja pakkusid esimestena ka suhtlemisvõimalust jututubades. Viimane oligi nende peamine edu tagaja.

Kolmandal perioodil võib Interneti iseloomustada kui laiatarbe kommunikatsioonivahendit. Traditsioonilistest meediatest oli esimesi Interneti rakendajaid raadio, mis üllatuslikult suure edu saavutamisel kasutas ära ilmselt tavahindadega võrreldes ülimaladal sisekulul ja potentsiaalselt piiramatu ülemaailmse leviku.

Online-ajakirjanduse esimene laine tähendas seda, et omanikud kontrollisid kõike ja kasutajail ei olnud toote arendamisel võimalik kaasa rääkida. Teises faasis võitlesid kasutajad kontrolli üle, kolmandas faasis on jõutud kontrolli jagamiseni, kuna võrgustiku omanikud näevad väärtust tihedas koostöös oma auditoriumitega. Teine laine näitas, et võrgustikud ja kasutajad vajavad üksteist ellujäämiseks. Võrgustikud ei ole auditoriumita midagi ja ka teistpidi: paljudel isepublitserrivatel lõppkasutajatel ei oleks midagi öelda, kui neil ei oleks uudiseid, mida võrgustikud toodavad. Enamik blogisid veedab suure osa oma "eetrisoleku" ajast suuremate uudisteorganisatsioonide avaldatud uudiseid kommenteerides. Uudiste tootmine on endiselt jäänud kalliks protsessiks, mis vajab suurt kapitaliinvesteeringut ja professionaalset oskusi. Lõppkasutajatel ei ole vajalikke ressursse selle olulise töö tegemiseks (*Online Journalism Review*).

#### 8.2.2. Traditsiooniline ajakirjandus online-keskkonnas

1990. aastate algusest avasid üksteise järel oma väljaandeid Internetis ka paberväljaanded, koppeerides Internetis lehe sisu. Ajalehe elektrooniline

**Tabel 8.1. Veebirakenduste erinevad arenguperioodid 1982–2004**

Periood	Rakendused	Kontroll
1982–1986	Digitaalne tekst, primitiivne graafika, informatsioonikommunikatsioon (jutood, teadetahvlid), e-pangandus, ostude tegemine, mängud.	Meediakompaniide poolne kontroll. Lõppkasutajate vajadusi peeti enesestmõistetavaks, kasutajate katseid uuenduste pakumisel tauniti, turunduses kasutati konventsionaalseid tegevusi auditooriumi loomisel. Toode oli kättesaadav vaid registreerunud kasutajatele kuutasu eest (u kaabel-TVga samas suurusjärgus).
1993–2001	Digitaalne tekst, arenenum graafika, video, audio, lingid peaaegu piiramatul suuruses andmebaasidesse. E-maili laialdane kasutus. E-kaubandus.	Segu: ühelt poolt suletud võrgustikud, mida kontrollisid omanikud (nt AOL); teisalt avatud võrgustikud, mida kontrollisid meediakompaniid partnerluses lõppkasutajatega, ning väiksemad leheküljed, mida kontrollisid lõppkasutajad ja kolmandad osapooled. Värvavahi funktsioon ajakirjanduses oli jätkuvalt väärtuslik, kuid Yahoo jt arendasid tarkvara, mis võimaldas lõppkasutajal olla ise värvavaht. Personaliseerimist võimaldav tarkvara lasi lugejail otsustada, milliseid uudiseid nad loevad, andes seega kasvatavalt kontrolli lõppkasutajatele ja uudistevahendajatele (nt Yahoo), mis kasvasid traditsiooniliste meediakanalite arvel.
2001–	Digitaalne tekst, arenenum graafika, video, audio, lingid peaaegu piiramatul suuruses andmebaasidesse. E-maili laialdane kasutus. E-kaubandus, veebilogid (blogid), päevikud, mängud, teenused, uudisteteated, muusika ja tarkvara allalaadimine, kohalikud ja kogukondlikud uudised, jututood ja foorumid, kiriateadete vahetus. Konvergens ehk püüe kombineerida online-keskkonda ja traditsioonilist elektroonilist meediat ühtseks uudisteorganisatsiooniks. Enam tähelepanu teenustele ja täiendavale sisule kui tuluallikale ning vähem banneritele ja pop-up reklaamidele. Teenused (nt erakuulutused) on tihti sobitatud lõppkasutaja vajadustega. Kasaskantavate vahendite uued põlvkonnad ja nende järjest ulatuslikum levik, mis avab uusi tuluallikaid.	Suhe võrgustiku omanike ja lõppkasutajate vahel on järjest enam muutumas partnerluseks. Võrgustikud: • On partnerlussuhetes blogijatega ja teiste sõltumatute häältega, kes oma sisu lõppkasutajatele kättesaadavateks teevad. • Arendavad uusi viise, et edastada kogukonnauudiseid ja tekitada sellesse protsessi enam interaktiivsust. Palju kasutatakse lugudega seotud foorumeid ja küsitlusi, et võimaldada kasutajatele omavahelist dialoogi või dialoogi loo autoriga. • Enam tundlikkust lõppkasutajate privaatsuse küsimustes. Luuakse efektiivsemaid reklaamistrateegiaid, nagu <a href="http://nytimes.com">nytimes.com</a> 'i <i>surround sessions</i> , kus reklaamija "omab" kasutajat kogu sessiooni ajal. Kasutatakse paremaid vahendeid, kaasa arvatud uued publitseerimisvahendid, mis võimaldavad reklaamijatel luua oma koopiaid, et reageerida kiiremini kasutaja nõudmistele, eriti suurte oluliste uudiste puhul. Luuakse partnerlussuhteid ( <i>The New York Times</i> ja BBC; Tribune Company ja Knight Ridder) uudiste ja reklaami pakumiseks.

Allikas: *Online Journalism Review*

variant erines paberväljaandest vaid selle poolest, et paberlehe kujundus ei säilinud, tekstid olid enamasti esitatud struktureerimata loendina, samuti võisid nad sisaldada vähem infot kui paberväljaanne.

Sellegipoolest lootsid väljaandjad saada uue elektroonilise kanali abil lugejaid juurde.

*Eesti Päevalehe* esimesed online-numbrid sisaldasid peamiselt uudiseid, hiljem lisandusid ka nädalalõpulisad (osaliselt). 1999. a pakkusid juba nii *Eesti Päevaleht*, *Postimees* kui ka *Sõnumileht* lisaks artiklitele ka esikülje ja teemade olulisemaid fotosid. *Õhtuleht* pakkus 1999. a artiklite tekste täismahus ning trükiversiooni esiküljefotot.

2003. a olid päevalehtede internetiväljaannetes peaaegu täielikud paberväljaande tekstid, lisaks fotod. Neile lisandusid lisaväärtust pakkuvad online-uudised ja -artiklid, mida trükiversioonis ei

leidunud. TÕ ajakirjanduse ja kommunikatsiooni osakonna tudengite uuringus (Auväärt jt 2004) võrreldi online-ajalehe erinevaid funktsioone ja žanrilist variatiivsust (tabel 8.3).

Elkõige ei konkureeri tänased online-väljaanded mitte ajalehtede trükiversioonidega lehtede tavalugejaskonna võitmise nimel, vaid pigem portaalidega.

Tasuta info pakumise laine vaibus peagi, kui selgus, et lisaks info pakumisele tuleb online-väljaannetel sarnaselt trükiversioonile silmas pidada kasumlikkust. Alates 2000. a muutusid mitmed Eesti ajalehtede internetiväljaanded tasuliseks, kuna internetireklaamist saadav tulu ei katnud tehtavaid kulutusi. Online-väljaannetes oli reklaam selge ajani sisuliselt puudunud. Osaliselt võib juurde-pääsupiirangute põhjuseks pidada väljaandjate oletust, et tasuta uudiste avaldamine Internetis

**Tabel 8.2. Eesti ajalehtede internetiversioonide algus, kasutamistingimused 2004**

Väljaanne	Trükkiversiooni peegelduse algus Internetis	Tingimused online-versiooni kasutamisel mais 2004
<i>Eesti Päevaleht</i>	18. okt 1995	Piiranguteta kasutatav.
<i>Äripäev</i>	6. nov 1995	Võimaldab oma veebiväljaandele juurdepääsu ainult tellijatele ja ühepäevapileti ostjatele. Enne kella 14.00 lugemise eest tuleb maksta SMSiga 5 krooni.
<i>Postimees</i>	28. nov 1995	Alates 2002. a lõpust võimaldas online-ajalehte tasuta lugeda alates kella 14st. Mais 2004 taas piiranguteta kasutatav.
<i>Eesti Ekspress</i>	9. aug 1996	Piiranguteta kasutatav.
<i>Õhtuleht</i> ja <i>Sõnumileht</i> / <i>SL Õhtuleht</i>	<i>Õhtuleht</i> 1. märts 1997; <i>Sõnumileht</i> 6. märts 1997	Alates 2003. a algusest võimaldab sama päeva uudiste tasuta lugemist kella 17st. Enne seda on lugemine tasuline (üks päev – 5 krooni SMSiga; üks kuu – 49 krooni pangaülekanega).
<i>Maaleht</i>	27. mai 1999	Piiranguteta kasutatav.

Allikad: Tähismaa 2003; Laasme, Peips &amp; Teder 2004

**Tabel 8.3. Online-ajalehti iseloomustavad tunnused 2004**

2004. a algul; 43 väljaannet

Fikseeritud tunnused	Tunnusele vastavate veebi-ajalehtede hulk
Regulaarne uuendamine	41
Online-uudiste olemasolu	10
Eri pikkusega lugude olemasolu	34
Eri žanridesse kuuluvate lugude olemasolu	34
Online-toimetuse andmete olemasolu	4
Kommentaari kirjutamise võimalus	26
Avaliku foorumi olemasolu	9
Toimetusele teate saatmise võimalus ("Anna vihje" vms)	14
Küsitluse olemasolu	11
<b>Ajalehe liik</b>	
Maakonnaleht	25
Üleriigiline leht	17
Parteileht	1

Allikas: Auväärt jt 2004

vähendab paberväljaande loetavust (ajakirjandusväljaannete kasutusstatistika seda üheselt ei kinnita – vt allpool online-kannibalism, online-väljaannete kasutajaskond).

Kõrgesaar, Makko ja Jöerand (2004) annavad oma tudengitöös ülevaate Internetist kättesaadavate ajakirjade sisust ja lugejatest. Nad järeldavad, et üldiselt on ajakirjade internetileheküljed mõeldud paberväljaande loetavuse suurendamiseks – kõiki ajakirju saab Internetist tellida ja Internetis saab lugeda peamiselt ajakirjade sisututvustusi. Paljudel ajakirjadel on ka foorumid, meilinglistid ja külalisteraamatud, vaid üksikudel on veebist võimalik lugeda täisartikleid.

### 8.2.3 Internetipõhised uued võimalused ja meediažanrid: *we-media*

Lisaks traditsioonilistele meediakanalitele on Interneti osaks tavapärasest erinevad kommunikatiivsed võimalused ja ka žanrid. Internetispetsiifilistel kanalitel pole otseseid eelkäijaid varasemate meediakanalite näol, kuna nende tekkimine põhineb otseselt Interneti enda omadustel. Nendeks on näiteks uudisteportaalid, mitmesugused hobi- või huvikogukondade foorumid või ka laiatarbortaalid. Järgnevalt ülevaade olulisematest internetipõhistest uutest meedia vormidest: *peer-to-peer* (P2P) arendustest, portaalidest, blogiajakirjandusest ja televisiooni ja Interneti integratsioonist.

Interneti ilmumisega on alanud mitmesuunalise digitaalse kommunikatsiooni ajastu, kus audiotuum on kogu protsessi integraalne osa. Žanrite variatiivsuse tekkega kaasneb seegi, et ajakirjandus liigub kaugemale oma jutustavast vormist, traditsiooniline meediatekst kombineerub paljude osavõtjate vahel toimuvate vestluste ning erinevate jutustajate pakutud lugudega.

Toimuvaid muutusi kirjeldab hästi *we-media* märksõna. *We-media* võiks hõlmata endas traditsioonilisi žanre ning meetodeid, aga ka uusi ja isegi seni veel ilmumata kommunikatiivseid vahendeid alates e-mailist kuni veebilogideni, digitaalse video ja mitmesuguste *peer-to-peer* süsteemideni.

Kui Interneti käsitleda osana massimeediast, tekivad kohe küsimused selle kommunikatiivsusest sisust. Kuna sisu tootjatena osalevad erinevad osapooled, on küsimus selles, kes kehtestab agenda. Seepärast on Interneti kui massimeedia keskes usalduse küsimused. Allikate paljususe tõttu hakkab suurel määral varieeruma ka nende usaldusvärsus. Meediauurijad Morris ja Ogan (1996) arvavad näiteks, et kommertslike lehekülgede usaldusvärsus Internetis on üldiselt suurem kui tundmatute lehekülgede oma.

**Kiil 8.4. Uus meedia kui massimeedia: uued žanrid ja formaadid**

- Foorumid
- Kasutaja-autorlusega (*user agent*) lahendused
- Peer-to-peer lahendused
- Portaalid
- Blogiajakirjandus

*We-mediaga* kaasneb auditooriumi keskus ko-gu meediaprotsessis tervikuna. Tavapärasele mas-simeediale seni harjumuspärasel situatsiooni muu-dab Interneti ilmumine eriti just sellega, et senine vastuvõtukeskne auditoorium osaleb aktiivselt sõnumite loomises. See tähendab, et näiteks por-taali ümber koondunud auditoorium tervikuna võib teada potentsiaalselt rohkem kui ajakirjanik.

Traditsiooniline ajakirjandus suhestab end on-line-ajakirjanduse uute võimaluste suhtes ette-vaatlikult. Näiteks online-ajakirjandust uurinud Inno Tähistmaa arvates on neid võimalusi ära kasutades loodud mitmeid Interneti uudiskülgi, mis “justkui meenutavad ajakirjandust, ent kus ei tööta professionaalseid ajakirjanikke ja ei peeta kinni ajakirjanduse põhimõtetest ja eetikanormi-dest”. Siit tuleb tema arvates online-ajakirjanduse arendamise peamine missioon: hoida kõrgele kvali-teete ajakirjanduse lippu. “Just kvaliteet on see, millega ajalehed suudavad säilitada võrgu-uudis-te usaldusväarsust. Kvaliteediga suudavad ajaleh-tede online-väljaanded eristuda isehakanud uudistepakkujatest” (Tähistmaa 2003).

**8.2.3.1. Tehnoloogilised võimalused: peer-to-peer arendused**

Erinevad kogukonnad on Interneti osaks olnud juba Interneti algaegadest peale. Eriti n-õ laiatarbe Interneti puhul on nende tegevus olnud enamasti piiratud interaktiivsusega, näiteks võimalus saata e-maili või võimalus saata teateid Interneti uudis-rühmadesse. Inimesed saavad kanali vahendusel anda üksteisele soovitusi või jagada selle vahendusel üksikuid ideid, kuid üldiselt ei ole neil kont-rolli selle struktuuri ja ülesehituse üle.

Võrgustikke, milles lõppkasutaja osaleb pro-jekti käigushoidmises oma ressursidega (nt jaga-da faile, kulutada sellele oma aega või rakendada selle käigushoidmiseks tehnilisi oskusi), ja mis sõl-tuvad lõppkasutaja panusest, on hakatud nimeta-ma *peer-to-peer* tehnoloogiateks. Nende püsimine sõltub lõppkasutajate ühisest panusest. Tehnolo-ogilisest lahendusest endast on siin kontekstis oluli-sen nende lahenduste sotsiaalne potentsiaal – *peer-to-peer* tehnoloogiate puhul on meediasisu kontroll ja valik erineval määral ja erinevates vor-mides tavakasutajate käes. Lugeja või tarbija võib

ühtlasi olla sõnumi looja nii pakutava tehnoloogi-lise platvormi kui meediasisu kaudu.

Kui tehnilised vahendid võimaldavad infor-matsiooni struktureerida kasutajate lähtudes, ja kui inimesed saavad tehnoloogia administreerimi-sel rakendada nende endi võimeid ja ressursse, tekivad võimalused kasutajate vaheliseks koos-tööks ükskõik millises valdkonnas huvide või teadmiste jagamisel ja edasi arendamisel.

Eesti tingimustes on sellise kasutaja-autorluse-ga (*user agent*) portaaliks [www.minut.ee](http://www.minut.ee), mis toi-mub vabatahtlikkuse põhimõttel. Kasutajad saa-vad ise lisada neid huvitavaid uudiseid ja neid kommenteerida. Samas toimub ka sellises näiliselt demokraatlikkust süsteemis kasutajate kontroll ebasobivate uudiste ja kommentaaride piiramise-ga. Samuti on neid inimesi, kes aktiivselt portaali uuendavad, suhteliselt vähe.

**8.2.3.2. Internetivärvad ehk portaalid**

Traditsiooniline ajakirjandus omandab Internetis uusi vorme ja dimensioone. Internet on teinud või-malikuks ka muudu konservatiivseks peetud aja-kirjandusžanrite uuenemise.

Muuhulgas tõi Interneti ilmumine kaasa tradit-sioonilise meedia ning erinevate infohaldamis-võtete sümbioosi, mille üheks väljundiks on inter-netivärvad ehk portaalid. Oma funktsioonilt või-vad need olla meelelahutuslikud, uudislikud, hu-vipõhised või kindlale sihtrühmale orienteeritud (nn teemaportaalid) või ka avalikku teenust pak-kuvad. McQuaili jaotuse järgi domineerivad por-taalides sotsiaalne, ekspressiivne ja informatiivne funktsioon (McQuail 2003).

Portaalid said alguse otsimootorite ja [www-lehekülgede](http://www.lehekülgede) kataloogidest, kuid on praeguseks are-nenud kompleksseteks teenustepakkujateks. Oma ülesehitusel on need tavaliselt süntees erinevatest elementidest, koondades endas nii pildilist kui ka tekstilist infot. Portaali osaks võivad olla uudised, küsitlused, mängud, foorumid, registreeritud kas-utajatele pakutav e-maili teenus jms. Info struktu-reerimisel kasutavad portaalid ühelt poolt tradit-sioonilisest ajakirjandusest tuttavaid kategooriaid, näiteks portaal [delfi.ee](http://delfi.ee) liigendab oma uudisteosa: eesti- ja välis uudised, majandus uudised, spordi-uudised jne. Lisaks sellele koondavad portaalid endas ostukeskkondi, suhtlemiskeskondi, pan-gandust, otsimootoreid ja muud. Kui vaadata suu-remaid portaalid Eestis, näeme, et need ei ole orien-teeritud kindlale kitsale sihtrühmale, enamasti on teemakataloogide kaudu püütud hõlmata potentsiaalselt võimalikult laia kasutajaskonda koolilap-sest koduperenaiseni.

Klientide võitmiseks pakutakse suurt hulka erinevaid tasuta teenuseid, alates e-postiaadressist kuni tarkvarani. Komplekssete infovärvatenena on portaaliid online-keskkonnas praegu peamiseks konkurendiks traditsiooniliste ajakirjandusväljannete online-versioonidele.

Traditsioonilised meediakanalite leheküljed on ka ise järk-järgult liikunud üha enam portaallilaadse struktuuri suunas. Traditsiooniliste meediaväljannete n-õ konkurentsieelis seisneb siin eelkõige esmase info pakkumises – uudistepakkumisega tegelevaid portaalid Eestis ei ole iseseisvate uudistetootjatena seni edu saanud. Eranditeks on [riik.ee](http://riik.ee) kui avaliku teabe pakkuja, mis saab värsket info otseallikast, või eelkõige professionaalidele suunatud uudisteagentuur BNS, mis on kogu oma tegevuse üles ehitanud Internetile. Uudiseid pakuvad Eesti portaalist nt [www.delfi.ee](http://www.delfi.ee), [www.uno.ee](http://www.uno.ee) ja [www.everyday.com](http://www.everyday.com).

Edukaim portaal Eestis ei ole praegu mitte uudiste pakkumisele orienteeritud ning sellega traditsioonilise meediaga konkureerivad portaalid, vaid uut teenust pakkuv suhtlemisportaal [rate.ee](http://rate.ee), mis on üles ehitatud kasutajate endi panusele – [rate.ee](http://rate.ee) keskmes on piltide lisamine ning teiste kasutajate piltide hindamine, samuti selle lisandiks olevad foorumid, jututuba ning kasutajate privaatselt suhtlemise võimalus e-maili teel.

Üks portaali arengusuundi on integratsioon mobiilitehnoloogiatega ([one.delfi.ee](http://one.delfi.ee); [jippii.delfi.ee](http://jippii.delfi.ee)), mis eelkõige avaldub logode ja helinate tarbimise võimaluses ja SMSide saatmise võimaluses portaali vahendusel.

Järgnevalt lühike ülevaade portaali arengust eesti veebikeskkonnas (Tulp jt 2003).

Portaaliikultuuri alguseks võib lugeda kataloogi [www.ee](http://www.ee) uuendust 1996. a, mil [www.ee](http://www.ee)-lehekülgede kataloogi hallanud AS Meediamaa lisas avalikelehtle reklaami. Peatselt lisandus reklaam ka [www.ee](http://www.ee)-ga seotud uudisteagentuuri ETA ja kuulutustelehe *Kuldne Börs* lehekülgedele.<sup>1</sup>

Sügisel 1998 avati Eesti esimene internetiportaal [XxLee](http://XxLee), mis pakkus külastajatele otsingumootorit, lingikataloogi, uudiseid, ilmateadet, horoskoopi, kuulutustetulpa ning veel mõningaid rubriike.<sup>2</sup>

1999. a alguses tuli turule BNSi ja MicroLinki ühisprojekt [Delfi.ee](http://Delfi.ee), mis vahetas välja MicroLink OnLine'i senise kodulehekülje aadressil [www.online.ee](http://www.online.ee), mis oli MicroLinki tuhandete dial-up modemiühenduse kasutajate avalehek. Erinevalt XxLee asutajatest olid omanikel ka kommertseesmärgid – saada reklaamitulu. Delfi pakkus lugejatele uudiseid, meelelahutust ja otsingumootorit. Samal ajal

oli Internetiportaali XxLee igapäevane külastajate arv tõusnud 13 000 külastajani.

Septembris 1999 alustas tegevust Ekspress Grupile kuuluv internetiportaal [Mega.ee](http://Mega.ee). Esiialgu olid [Mega.ee](http://Mega.ee) uudised jagatud kategooriatesse. Järk-järgult lisandus rubriike, lisaks pakkus portaal värsket infot: ilmateade, valuutakursid, Talse, horoskoobid, kasulikud lingid ja küsitlused.<sup>3</sup>

Aprillis 2000 avati Eesti esimene linnaportaal [Aktivist.ee](http://Aktivist.ee), mis asendas [XxLee](http://XxLee). Uue võrguvärvate eesmärgiks oli pakkuda infot Tallinnas toimuvast: teatrietendused, muuseumid, vaatamisväärsused ja vaba aja veetmise võimalused koos vastava päeva kultuurisündmuste kavaga. [Aktivist.ee](http://Aktivist.ee) pakkus esimesena Eestis WAP-teenust, mille abil sai portaalist infot hankida ka WAP-mobiiltelefonidega. Lehekülg valmis koostöös suure Soome IT-firmaga Infopiste OY.<sup>4</sup>

Septembris 2000 avati analüütilisi kommentaare ning kirjutisi pakkunud portaal [Morning.ee](http://Morning.ee), mille eeskujuks oli ajakiri *Luup*. Kasutati nii teistes väljaannetes toodetud uudiseid kui ka spetsiaalsete artikleid ja kommentaare.<sup>5</sup> Lisaks kohalike ning välismaiste uudisteagentuuride tegevuse vahendamisele loodi ka oma uudistetoimetus. Portaaliloojad ei taotlenud algusest peale äriedu, tegu oli Saksamaa emafirmale Ovo Systems toodetud tarkvara testimisega.<sup>6</sup> Vähesed külastatavusega portaal suleti juba aprillis 2001 raha ja investeringute puudumise tõttu.

Detsembris 2000 avatud portaal [Uno.ee](http://Uno.ee) (kuulus Metromediale, kes oli ka Trio omanik) kasvas tänu tugevale meediatoetusele Trio raadiojaamades 2001. a hiliskevadeks suuruselt neljandaks internetikeskkonnaks Eestis. Mais 2001 avati venekeelsele elanikkonnale mõeldud [ru.uno.ee](http://ru.uno.ee).<sup>7</sup> Septembris 2001 alustas [Mega.ee](http://Mega.ee) baasil tegevust EPL Online, mis põhines Eesti *Päevalehe*, *SL Öhtulehe* ja *Eesti Ekspressi* uudistel. [Mega.ee](http://Mega.ee) säilidis algkujul mõned rubriigid, nt MegaAuto (nüüd [www.ekspressauto.net](http://www.ekspressauto.net)) ja MegaTreff.

Jaauanuaris 2002 tunnistas maksejõuetust ja omanike huvi puudumist lisainvesteeringuteks [XxLee](http://XxLee). Aktivistid internetiportaali juhtimise võtsid üle Soome partnerid.<sup>8</sup> 2003. a müüs MicroLink [delfi.ee](http://delfi.ee).<sup>9</sup>

1 <http://www.epl.ee/artikkel.php?ID=10894>, nov 2003.

2 <http://www.online.ee/~arvom/portal.htm>, nov 2003.

1 <http://www.epl.ee/artikkel.php?ID=119316>, nov 2003.

2 <http://www.epl.ee/artikkel.php?ID=66992>, nov 2003.

3 <http://www.epl.ee/artikkel.php?ID=157259>, nov 2003.

4 <http://www.epl.ee/artikkel.php?ID=117903>, nov 2003.

5 <http://www.epl.ee/artikkel.php?ID=163001>, nov 2003.

6 <http://www.tse.ee/news/7433.txt>, nov 2003.

7 <http://www.uno.ee/news/story/41731/>

### 8.2.3.3. Blogiajakirjandus

Meediateadlaste hinnangul küsimärgistab traditsioonilise ajakirjanduse võimalusi ning konventsioone kõige enam nn blogiajakirjandus. Veebipäevik ehk blogi võib olla nii emotsionaalsele rõhuv isiku siseelu või eraelu kajastus kui ka tugevale ekspertisele ja tehnilistele oskustele tuginev ajakirjandus, mis kasutab tekstiloome konventsioone, olulisi allikaid, selektsiooni ja toimetamist.

Blogiajakirjandust kui spetsiifilist online-ajakirjanduse vormi peetakse ajakirjanduse teisenemispotentsiaali väljenduseks meedias tervikuna. Näiteks on blogiajakirjanduse osaks uudiste veebilogid ([www.cyberjournalist.net](http://www.cyberjournalist.net)). See tähendab, et uute meediate ilmunisega on teisenenud isegi üks konservatiivsemad ajakirjanduse osi – uudisajakirjandus (vt nt Matheson 2003). Mathesoni järgi pole blogiajakirjandus mitte alternatiiv ja täiendus “kövadele uudistele”, pigem aitab blogiajakirjandus luua ruumi, milles räägitakse läbi lugeja ja kirjutaja vahelist suhet, suurendatakse uudisteteksti lähedust uudisele kui sündmusele ning uudistepraktikate refleksiivsust tervikuna.

Eestis võib blogiajakirjanduse näiteks tuua tele- ja raadiosaate “Tehnokratt” (Kuku Raadios 1999– ja ETVs 2000–02, [www.tehnokratt.ee](http://www.tehnokratt.ee)) ja Peeter Marveti, kes saatejuhina mitte ainult ei kasutanud blogitüüpi kodulehte oma saadete toetusks, vaid asutas ka [www.kolhoos.ee](http://www.kolhoos.ee), kus igal soovijal on võimalik blogimissüsteemi kasutada. Ideest innustunuid on rohkemgi ja tänaseks on Eestis tekkinud hulk blogijaid, kes oma isiklike blogidega on saavutanud laialdase lugejaskonna. Näiteks võib tuua [teller.diip.ee](http://teller.diip.ee), mida külastatakse kuus u 6500 erinevalt Internetiaadressilt.

### 8.2.3.4. Televisioon

Üks piirialasid, kus toimub tavapäraste žanrite ja kanalite transformatsioon, on televisioon. Kõige lihtsamal tasemel tähendab tulevikutelevisioon elektroonilist teleteenust, nt võimalust sõltumata saatekavast vaadata soovitud filme ja saateid. Keerukamates vormides võib see meediateoreetikute hinnangul tähendada seda, et vaataja saab sügava manipuleerida ka ühe saate või filmi tasandil. Sel (esialgu veel rohkem teoreetilise võimalusena pakutaval) tasandil sulaksid kokku Internetimängu kui kommunikatsioonivormi võimalused ja televisioon, mis traditsioonilisel kujul pakkus vaatajale toimetuse või tootja tehtud valikuid nii teema, sõnumi formaadi kui ka aja osas. Tuleviku telesaade võib oma äärmustes olla ka vaataja hetkevalikute produkt.

Uue televisiooni võimalusi iseloomustab praeguses arengujärgus kõige enam siiski see, et saated pole kättesaadavad vaid reaalaajas, vaid need elavad suuremal või vähemal määral koos auditooriumiga oma elu just vaatamise ja valiku kaudu.

Eestis on Interneti ja televisiooni võimaluste kombineerimise näiteks Elioni ja ETV koostöös käivitatud internetitelevisioon [itv.ee](http://itv.ee), mille registreeritud kasutajad saavad endale ise saateid ja filme valida juba praegu.

Tele- ja raadiokanalite Internetti tulekust on võimalik põhjalikumalt lugeda käesoleva raamatu teistes peatükkides. Samuti annavad sellest ülevaate Kaljuvee jt (2004) oma tudengitöös “Tele- ja raadiokanalid Internetis”.

### 8.2.4. Online-ajakirjanduse auditoorium Eestis

Mõnede tunnuste alusel võib väita, et online-meedia on võrreldes traditsioonilise meediaga oma, internetispetsiifiline loogika. Internet pakub tervet hulka juba eespoolnimetatud uusi võimalusi: tagasiside, kasutajaga kohandamine (kustomiseerimine), reaalaajas publitseerimine, materjalide arhiveerimine, materjalide omavaheline hüperlinkimine, audio ja video kasutamine ja nii edasi. Kõik need võimalused võivad olla ajendeiks, miks meedia tarbijad pöörduvad traditsioonilise väljaande asemel online-versioonide ja online-spetsiifiliste kanalite juurde. Arvatakse, et online-ajakirjanduse tuleviku võtmelemendid on interaktiivsus, hüpertekst ja multimeedia.

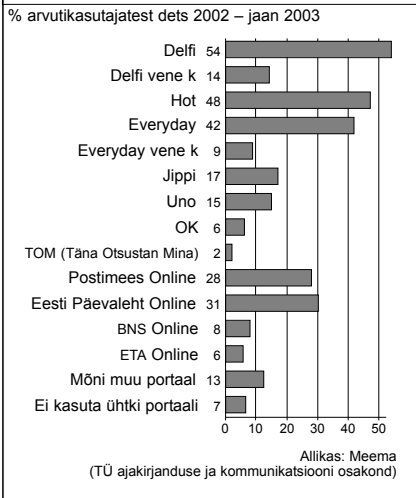
Online-kannibalismiks on nimetatud nähtust, kus paberlehe lugejate arv väheneb sama väljaande tasuta kättesaadava online-versiooni mõjul (Otsmann 2001). Arvatakse, et tugeva online-kannibalismi puhul võivad lugejad üldse loobuda paberväljaannetest.

Tegelikkuses on eri uuringud näidanud, et ajalehetarbijad võivad tarbida nii väljaande trükiversiooni kui ka online-versiooni paralleelselt ning ainult online-versiooni tarbijate hulk ei ole erinevalt prognoositust märkimisväärselt suurenenud.

TÜ ajakirjanduse ja kommunikatsiooni osakonnas läbi viidud meediaühiskonna ja meediakasutuse uuringu (Meema) tulemuste kohaselt osutus online-meedia tarbijate hulk tavapärasest suuremaks vaid n-õ nišimeedia puhul (tehnikaväljaanded, majandus jms).

Väljaspool Eestit tehtud uuringud näitavad, et ajalehetele puhul kasutatakse online-versiooni pigem vaid siis, kui trükiversioon ei ole kättesaadav. Online-ajalehed on sel juhul trükiversiooni asendajad. Juhul, kui trükiajakirjandus on siiski kätte-

**Joonis 8.3. Portaaside kasutamine 2002–2003**



saadav, on online-versiooni valimise ajendiks enamasti mõni lisaväärtus: nt värskem info, trükkiväljaande ja online-väljaande materjalide erinev pikus (pikemad intervjuud online-versioonis) jms.

Tegelikult võib üldistavalt öelda, et traditsioonilise meedia tarbimine ei ole Interneti levikuga vähenenud, samuti ei ole nende vorm, eriti trüki-ajakirjandusest rääkides, selle mõjul muutunud. Praegusel hetkel näivad enam paika pidavat teooriad meedia spetsialiseerumisest: uued võimalused ei kõrvalda turult vanu, vaid lisavad variatiivsust ja valikuvõimalusi (*media substitution theory*, Kaye & Johnson 2003). Kõige määravam on ilmselt aga lõhe uue meedia pakutavate sotsiaalsete ja tehniliste võimaluste ning tegeliku online-ajakirjanduse vahel. Sellel on nii sotsiokultuurilisi kui ka majanduslikke põhjuseid.

Vastavalt ajakirjanduse ja kommunikatsiooni osakonna uuringule (Meema) kasutas aastal 2002 ajalehtede ja ajakirjade lugemiseks arvutit sageli 16% ja vahetevahel 16% Eesti elanikkonnast, mis on 64% arvutikasutajatest.

Joonis 8.3 annab ülevaate erinevate portaaside populaarsusest Meema küsitluse andmetel. Populaarseimad portaamid on [delfi.ee](http://delfi.ee), [hot.ee](http://hot.ee) ja [everyday.com](http://everyday.com), neile järgnevad *Eesti Päevalehe* ja *Postimehe* veebiversioonid.

### 8.3. Uus meedia era- ja avaliku sektori kasutuses

#### 8.3.1. Avalik sektor

Eesti eripära on see, et avalik sektor on olnud aktiivselt kaasatud Eesti infoühiskonna arengusse. 1998. a võttis Riigikogu vastu riigi infopoliitika põhilused. Dokument on sellest ajast peale olnud Eesti infoühiskonna arengu nurgakiviks. Eesti infopoliitika keskne dokument keskendub neljale põhilisele valdkonnale: seadusandluse moderniseerimine, erasektori arengu toetamine, riigi ja kodaniku vahelise suhtlemise areng, infoühiskonnaga seotud probleemide teadvustamine. Alates 1996. a on infotehnoloogiate finantseerimiseks eraldatud püsivalt u 1% riieelarvest.

Eesti infotehnoloogilise arengu üle peab arvet Riigi Infosüsteemide Arenduskeskus (RIA), mis kogub pidevalt andmeid mh arvutitöökohtade ja informaatika spetsialistide hulga kohta riigihaldusasutuses (tabel 8.4).

Avaliku sektori arengusuunaks infotehnoloogia valdkonnas on olnud riigi pakutavate teenuste arendamine ja nende rakendamine. Eestil on praeguseks juba käivitatud mitmeid olulisi rakendusi nagu IDkaart, digitaalallkirja projekt, X-tee projekt ja kodanikuportaal. Riiklikud institutsioonid rakendavad IT-võimalusi muidugi endiselt erineva tulemuslikkusega.

IDkaart ehk isikutunnistus on Eesti Kodaniku kohustuslik isikut tõendav dokument, kuid lisaks sellele on see ka vahend digitaalallkirja andmiseks. Potentsiaalselt on kahepoolsete kokkulepete abil IDkaardiga võimalik ühendada ka kõikvõimalikke muid plastikaarte, IDkaardi süsteem on rakendamiseks avatud nii riigi-, omavalitsuse kui ka eraorganisatsioonidele. Omavalitsuste IDkaardi kasutuse näiteks võib tuua Tallinna ja Tartu linna, mis alates 2004. a kasutavad IDkaarti linnaliinibusside kuupiletite müügiks, võimaldades seega piletistul eristada linnakodanikke ja andes neile piletistul eelseid.

Digitaalallkirja abil on võimalik elektrooniliselt ja paberivabalt ajada kõiki asju, milleks varem pidi kasutama omakäeliselt paberile pandud allkirja. Digitaalallkirja andmiseks on vajalik IDkaardi olemine ning selle abil on võimalik ennast elektrooniliselt identifitseerida. Avaliku sektori koordineeritavatest tegevustest on digitaalallkirja abil võimalik teha päringuid kodakondsus- ja migratsiooni ameti infosüsteemis, riigiregistris, identifitseerida end e-maksuametis, kasutada kodanikuportali [www.eesti.ee](http://www.eesti.ee) ja hoida end kursis ametlike teadaannetega. Lisaks on sellega võimalik identifitseerida end asjaajamiseks finantsvahetusega ja

**Tabel 8.4. Arvutitega varustatus Eesti riigihaldusasutustes 1996–2000**

	1996	1997	1998	1999	2000
Töökohaarvutite arv riigihaldusasutuses	7 068	9 135	10 557	11 341	12 643
Arvutiga varustatud töökohade arv riigihaldusasutustes	6 725	9 050	10 220	11 088	12 415

Töökohaarvuti all mõistetakse personaalarvutit komplektis, mis loob arvutikasutajale võimaluse arvuti või arvutisüsteemi individuaalseks kasutamiseks.  
**Arvutitöökoha** all mõistetakse ametiasutuse töötaja võimalust oma töökohal kasutada autonoomset või kohtvõrku ühendatud töökohaarvutit, kohtvõrgu tööjaama või arvutiterminali koos tööks vajaliku tarkvara, arvutivõrgu ja andmesidevõimalustega.  
 Allikas: RIA

**Tabel 8.5. Eesti elanikele välja antud IDkaartide arv 2002–2004**

Aeg	Välja antud kaartide hulk
12. sept 2002	50 000
11. dets 2002	100 000
24. apr 2003	200 000
26. sept 2003	300 000
30. dets 2003	350 000
17. mai 2004	500 000

Allikas: RIA

kindlustusega tegelevate organisatsioonidega, identifitseerida end e-koolis ja õppeinfosüsteemides. Pilootprojektina on Lasnamäe Tervisekeskuses Medicum võimalik IDkaardi abil näha ka oma terviseandmeid.

X-tee on Eesti riigi põhilis andmebaase ühendav andmevahetussüsteem, mis võimaldab kodanikul, ametnikul ja ettevõtjal kasutada Andmekogude Riiklikus Registris registreeritud andmebaase. 2003. a lõpul kiitis valitsus heaks ka X-tee määruse, mis reguleerib ja ühtlustab andmekogude kasutamist Eestis. Hiljemalt 1. märtsiks 2004 pidid X-tee süsteemidega olema liitunud kõik avaliku võimu teostamise seisukohalt olulised valitsusasutused, muud valitsusasutused ja omavalitsusasutused peavad selleks ajaks teatama oma X-teega liitumise aja.

Eesti riik koordineerib ka Kodaniku teabeportaali ([www.eesti.ee](http://www.eesti.ee)), mille eesmärgiks on anda kasutajale praktilist infot Eestis elavate inimeste õiguste ja kohustuste kohta. Teabeportaali ülesandeks pakkuda blankette, viiteid seadustele, kasulikke telefoninumbreid, viidata valdkondadega seotud kodulehtedele ja pakkuda [www.teenuseid.ee](http://www.teenuseid.ee). Kodanikuportaal püüab katta kogu inimese elu lapseast kuni pensionieani. Tähelepanu pööratakse ka erivajadustega inimestele.

Eesti riigi enim kõlapinda saavutanud e-keskkond on juunis 2001 avatud portaal Täna Otsustan Mina (TOM, <http://TOM.riik.ee>), mille eesmärk on rahva osaluse suurendamine riigi otsustusprotsessides. Portaalis saab esitada ideid, suuniseid, mõtteid ja kommentaare teiste kasutajate esitatud

**Kiil 8.5. E-kodaniku teabeportaali struktuur**

- **Elusituatsiooni kiht** – juhendid erinevateks elusituatsioonideks lastele, noortele, tööelastele ja pensionistele inimestele. Erinevad riigi poolt pakutavad teenused ja võimalused ning elukorraldusega seotud õigusaktid.
- **Teenused** – peamiselt blanketid, mis on seotud elu-ase, kodakondsuse, tervishoiu, toetuste ja sotsiaalaabiga, nt liitumistaotlus elektrivõrguga või matuse-toetus taotlus, aga ka lingid blankettidega seotud seadusandlusele.
- **Otseteenused ja protseduurilised teenused** – nt juurdepääsuviimasele pakumine X-tee portaalele (kodanikuportaalile), kus on võimalik oma andmeid erinevates registrites kontrollida ja vajadusel ka muuta.
- **E-demokraatia süsteemid** – nt juurdepääsuviimasele pakumine e-riigi, TOMi, ametlike teadannete süsteemidele.
- **Kodaniku dokumendihaldussüsteemid, e-mail** – IDkaardi omanikel on võimalik registreerida endale e-maili aadress kujul [eesnimi.perenimi\\_NNNN@ees-ti.ee](mailto:eesnimi.perenimi_NNNN@ees-ti.ee), mis on ennekõike mõeldud riigi ja kodaniku vaheliseks suhtluseks, kuid seda võivad kasutada kõik soovijad.
- **Minu portaal** – siia on koondatud konkreetse kodaniku andmeid ja asjaajamist puudutav info, juba esitatud taotlused ja blanketid; kõik see on kättesaadav vaid kodanikule endale.

Allikas: [www.eesti.ee](http://www.eesti.ee)

Kasutajaskonnas toetust leidnud ideed lähevad peaministri resolutsiooniga ametkondadesse täitmisele. 2004. a jaanuari alguse seisuga oli riigi-aparaadist menetlemisel 452 ideed ning ministerruumide eelnõudeni on jõudnud 10 seadust. Samas oli TÜ ajakirjanduse ja kommunikatsiooni osakonna 2002. a uuringu andmetel TOMi kasutanud vaid 1% eestlastest.

Avaliku sektori panus Eesti uue meedia arengusse on märkimisväärne ka tänu operatiivsele ja võrdlemisi liberaalsele seadusandlusele. Oluliste seadustena tuleb märkida andmekogude seadust, autoriõiguse seadust, avaliku teabe seadust, karistusseadustikku, riigilõivuseadust, digitaalalkirja seadust, kaabelvõrguseadust, riigihangete seadust, telekommunikatsiooniseadust ning tehnilise normi ja standardi seadust, samuti nende alusel antud üksikakte.

Eesti arengu seisukohalt on oluline, et valitsus on olnud avatud koostööks erasektoriga ja selliste



**Tabel 8.6. Riigi- ja valitsusasutuste poolt pakutavate online-teenuste kasutamine**

% elanikkonnast vanuses 15–74 a			
	2001 suvi	2002 suvi	2003 okt
Teenuste või toodete/dokumentide eest tasumine internetipanga vahendusel	41	48	47
Kodulehekülgedelt info hankimine	48	47	43
Dokumentide (blanketid, avaldused) väljaprintimine	25	33	26
Ennast või perekonda puudutava informatsiooni vahendamine	31	30	37
Oma arvamuse avaldamine või osalemine avalikus arutelus	?	10	8

Allikas: RIA

ühisnitsiatiivide tulemusel on sündinud palju huvitavaid projekte. Näiteks avaliku ja erasektori koostöös tegutseva sihtasutuse Vaata maailma üks suuremaid projekte on ajavahemikus aprill 2002 – aprill 2004 ligi 100 000 Eesti täiskasvanu algõpe Interneti kasutamises.

### 8.3.2. Omavalitsused

Eesti Informaatikakeskuse juhtimisel anti käiku kohalikele omavalitsustele suunatud projekt Külaltee, mille eesmärgiks oli 1999–2000 arendada regionaalset andmesidet. Sellele järgnes Külaltee 2, mis lõi andmesideühendused ja avalikud Interneti punktid kõigisse Eesti rahvaraamatukogudesse, samuti korraldati selle raames infrastruktuurilisi lahendusi, tehes võimalikult suurele hulgale maaelanikkonnast kättesaadavaks Interneti püsiühenduse.

Vastavalt avaliku teabe seadusele on kohalikud omavalitsused teabevaldajad – kohustatud võimaldama juurdepääsu nende valduses olevale infole seaduse sätestatud korras. Kohustus pida veebilehte info avalikustamiseks jõustus 1. märtsil 2002. Enne avaliku teabe seaduses kehtestatud 2002. aastat enamikul omavalitsustest kodulehekülge ei olnud.

TÜ ajakirjanduse ja kommunikatsiooni osakonna kursuse “Infoühiskond ja uus meedia” raames kodutöö koostanud üliõpilased Liis Auväärt ja Marek Mühlberg korraldasid uuringu, mille tulemusena nad järeldasid, et veel 2003. a lõpus leidis Eestis palju omavalitsuste kodulehekülgi, mis olid sündinud vaid avaliku teabe seaduse kohustuse tõttu, ning kohalikes omavalitsustes ei mõistetud, et virtuaalkeskkonnas asjaajamine peaks omavalitsuse tegevuse läbipaistvuse seisukohalt olema enesestmõistetav. Valimisse sattus

ka neid vallavalitsusi, kus nähti valla koduleheküljes võimalust valda ja vallas toimuvat tutvustada ning seeläbi investoreid leida. Samas toodi vastustes kodulehekülje avamise põhjusena tihti välja info edastamist, mis uuringu autorite hinnangul oli nii mõnegi vallametniku puhul pigem stampväljend kui mõtestatud lause, veebilehe pidamises nähti tihti vaid mõttetut kohustust (Auväärt & Mühlberg 2003).

Uuringus toodi siiski välja ka vastupidiseid näiteid, nii nimetas Palamuse vald positiivsema vallaelaniku võimalust kõigepealt teda huvitava teemaga koduleheküljelt tutvuda ja alles siis küsimuste korral vallavalitsusse kohale tulla. See peaks säästma vallaametnike aega.

Uuring näitas, et omavalitsused, kes kodulehekülje pidamise kohustust täidavad, uuendavad sealset infot enamasti regulaarselt. Seega peaks veebilehe külastajani jõudma võimalikult värsket ja tegelikule olukorrale vastavat informatsiooni. Uuringu autorid järeldavad online-intervjuude tulemustele tuginedes, et kuigi Andmekaitse inspeksioon on korraldanud ka avaliku teabe seadust käsitlevaid loenguid, et teavitada omavalitsusi info avalikustamise vajadusest, on reaalsus teistsugune. E-omavalitsust nähakse Eestis veel peamiselt viisina jagada infot investoritele ja turistidele, kuid peamine sihtrühm – vallaelanikud – jäetakse neile mõeldud infost ilma (Auväärt & Mühlberg 2003).

### 8.3.3. Haridusasutused

Haridusasutused on olnud aktiivselt Eesti Interneti sünni ja arengu juures ning on tänu aktiivsele koordineeritud tegevusele Eesti selles valdkonnas esirinnas ka rahvusvahelises võrdluses. Eesti võib uhkustada maailma kõrgeima internetiühenduste hulgaga koolides. Rahvusvahelise telekommunikatsiooni assotsiatsiooni andmetel olid 2002. a Internetti ühendatud kõik Eesti koolid.

Tiigrihüppe programmi raames korraldatud uuringu “Tiiger luubis” (Toots 2001) andmetel oli 90% uuritud VIII ja XI klassi õpilastest arvutikasutajad. Koolis kasutas arvuteid 85% õpilastest ning väljaspool kooli 81%. Seejuures on siiski oluline märkida, et kuigi koolis kasutasid poised ja tüdrukud arvutit enamvähem sama palju, siis kodus ei kasutanud arvutit 25% tüdrukutest ning vaid 12% poistest. Lisaks koolile ja kodule võisid õpilased kasutada arvuteid ja Internetti ka vanemate töökohas, sõprade ja sugulaste juures, avalikes internetipunktides ja raamatukogus. Vaatamata kõrgele kasutajate protsendile oli info- ja kommunikatsioonitehnoloogia (IKT) rakendamine koolitöös siiski suhteliselt vähem levinud. Keskmiselt

**Tabel 8.7. Meelelahutusliku arvutikasutuse intensiivsus koolis ja väljaspool kooli**

% 8. ja 11. klassi õpilastest, kes olid õppeaasta jooksul arvutit nimetatud eesmärgil kasutanud

	Üldse mitte		1–2 korda		3–9 korda		10 või enam korda	
	Koolis	Mujal	Koolis	Mujal	Koolis	Mujal	Koolis	Mujal
Mängimiseks	28	19	22	20	16	20	19	34
Elektronposti kasutamiseks	27	35	13	16	14	14	31	29
Internetis surfamiseks	15	25	16	17	19	18	37	33
Interneti jututoas suhtlemiseks	39	45	18	18	12	12	15	17

Allikas: Toots 2001

**Tabel 8.8. Koolide infotehnoloogiline varustus 2001**

Õpilaste arv põhi- ja keskkooli osas	243 345
Arvutite arv põhi- ja keskkooli osas	8 642
Interneti ühendatud arvutite arv	7 993
Arvutite arv 100 põhikooliõpilase kohta	3,4
Arvutite arv 100 keskkooliõpilase kohta	3,7
Interneti ühendatud arvuteid 100 põhikooliõpilase kohta	3,0
Interneti ühendatud arvuteid 100 keskkooliõpilase kohta	3,5

Allikas: haridusministeerium; Krull 2003

rakendas eri ainetes arvutit 8% õpilastest, samas kui 16% ei olnud seda teinud üheski tunnis. IKT õppetstarbeline kasutamine koolis ja väljaspool kooli sarnanes nii kasutusaja kui eesmärgi poolest. Kõige enam teenib arvuti infoallika rolli, mille abil hangitakse liseteavet õppetükkidele. Arvuti abil kirjutatakse referaate ja töödeldakse andmeid.

Kuigi enamik õpilasi kasutas arvutit ka väljaspool kooli, oli see vaid 3% vastanutest eelistatum tegevus laupäeva õhtu veetmiseks. Tabelis 8.7 on esitatud andmed arvutikasutusest meelelahutuslikeks tegevusteks.

Isiklik meiliaadress on olemas 67% õpilastel, kellest 7% seda ei kasuta. Isiklik koduleht on 12% õpilastest, kusjuures 9% on selle ise valmistanud (Toots 2001).

### 8.3.2.1. Tiigrihüpe

Tiigrihüppe projekti kuulutas 1996. a välja Eesti Vabariigi president Lennart Meri ning erinevatel hinnangutel võib see ka tähistada IKT revolutsiooni hariduses kui koguni mitte kogu ühiskonnas (Krull 2003). Tiigrihüppe projekt tähistab arvutikasutuse muutumist massiliseks. Tiigrihüppe projekti eesmärgid olid:

- kohalike omavalitsuste toetamine koolide arvutiseerimisel ja IT-infrastruktuuri arendamisel;
- õpetajatele põhiliste arvutioskuste andmine ja nende koolitamine IKT kasutuseks koolitöös;

- interaktiivse õpikeskkonna ja õpioskuste arendamise toetamine;
- originaaltarkvara loomine eesti keele, kultuuri, ajaloo ja loodusega tegelemiseks.

2001. a uuringu andmetel on informaatika koolides valikaine, kuigi see on enamasti kõigi koolide õppekavades. Informaatika õpetamist alustatakse juba algkoolis.

Kuna Tiigrihüppe programm oli loodud tähtsajalisena 1997–1999, siis tunti vajadust jätkuva programmi järgi, mis toetaks kooli ja haridust. Selleks loodi aastateks 2001–2005 Tiigrihüpe Pluss programm, mis kannab üldiselt samu eesmärke, kuid lisandunud on jätkusuutlikkus ja organisatsioonide, omavalitsuste, lapsevanemate ning riigi omavahelise koostöö edendamine. Kui Tiigrihüppe programm tegeles peamiselt põhi- ja keskhariiduskoolide toetamisega, siis Tiigrihüpe Pluss programmi eesmärgiks on ka elektroonilise platvormi loomine ülikoolidevaheliseks koostööks.

Omavalitsuste, lapsevanemate ja kooli vahelise paremaks suhtlemiseks loodi 2002. a sihtasutuse Vaata maailma toetusel e-kooli keskkond, mis on kasutamiseks kõigile üldhariduskoolidele. 2004. a alguseks oli projektiga liitunud 42 kooli. E-kooli raames on loodud kool-kodu suhtlemiskeskond, mis võimaldab lapsevanematel näha lapse edasijõudmist koolis ning suhelda õpetajate ja klassijuhatajaga.

Tiigrihüpe Pluss programmi raames algatatud ülikoolide vahelise platvormi arendamiseks loodi Eesti kõrgkoolide konsortsium, Eesti e-ülikool, mille eesmärk on elukestva õppe põhimõtetest lähtudes kõrgkoolide koostöö algatamine ja lihtsustamine e-õppes, et hoida kokku ressursse, parandada hariduse kvaliteeti, lihtsustada rahvusvahelist koostööd ning teha kvaliteetne haridus kättesaadavaks õppijatele üle Eesti.

### 8.3.2.2. Muud algatused haridussektoris

Haridusprojektide raames tasub veel ära märkida Eesti E-riigi Akadeemiat, mis on info- ja kommunikatsioonialane arendus- ja analüüsi keskus, mille

eesmärk on koolitada Eesti IT-spetsialistide juhtimisel SRÜ, Ida-Euroopa ja Aasia avaliku sektori spetsialiste. Samuti on oluline valitsuse, ülikoolide ja eraettevõtete poolt 2000. a asutatud IT Kolledž, mis on infotehnoloogia spetsialiste koolitav rahvusvahelise toetusega eraõiguslik rakenduskõrgkool.

### 8.3.3. Erasektor

#### 8.3.3.1 Ettevõtted

Erasektori puhul hõlmab Interneti ja infotehnoloogia kasutuselevõtt suurt hulka erinevaid tegevusi, alates infotehnoloogia rakendamisest sisemise töö hõlbustamiseks ja töö tulemuslikkuse suurendamisest kuni kliendisuhtluse ja online-teenuste pakkumiseni. On ettevõtteid, kelle tegevus leiabki aset peamiselt vaid internetikeskkonnas. Nii on Eestis juba praegu hulk internetipoode, mis pakuvad tooteid (nt raamatuid jm trükiseid, majapidamistarvikuid, tark- ja riistvara, multimeedia tooteid, lilli jpm). Populaarsust on võitnud online-broneerimissüsteemid, mille abil on võimalik broneerida ja osta näiteks lennuki- või laevapileteid.

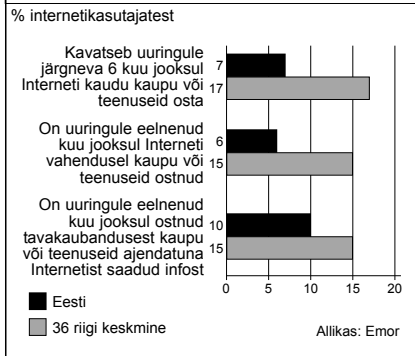
Online-ostude sooritamine ei ole Eesti elanikkonna seas siiski märkimisväärselt populaarne – väike on nii nõudlus kui ka pakkumine. Paljud online-poodid on pidanud oma tegevuse lõpetama, kuna kliente ei ole olnud piisavalt.

Globaalse e-kaubanduse raporti kohaselt ei kasuta tervelt 74% Eestiinternetikasutajaid Interneti ostude sooritamiseks. Arvestuslikult on online-ostude sooritajaid vaid 6–7% elanikkonnast ning tulevikuperspektiivis võib ostjaid lisanduda veel umbes 8% (Krull 2003). Sellest järeldub, et online-ostmine ja teenus on enamasti lisaväärtuseks mõnele n-õ reaalkeskkonnas tegutsevale ärile (reklaami, lisavõimaluse funktsioonis). Joonisel 8.4 on näha, et Eesti on oma e-kaubanduse kasutuse arengult tugevalt maas TNS uuringus osalenud 36 riigi keskmisest.

Eesti on olnud soodus keskkond mitmesuguste innovatiivsete e-lahenduste tekkeks ja katsetamiseks. Nii on Eesti saavutanud arvestamisväärse positsiooni turvaserverite domeenide alal, mis on klientide usalduse suurendajana e-kaubanduse aluseks.

Innovatiivsete lahenduste hulka kuuluvate mobiiliteenuste laial skaalal on mõnedki teenused osutunud erakordselt edukaks. Nii on mobiilparkimine selle käivitamise mõõdundu paari aasta jooksul hakanud Tallinnas ja mõnes teises linnas vahendama ligi poole parkimismaksetest. M-parkimine on esimene pikas teenuste nimekirjas,

**Joonis 8.4. E-kaubanduse levik Eestis ja maailmas 2001**



mida pakutakse – Eestis on mobiili abil võimalik osta ühistranspordi pileteid, jooke, saada teavet äriregistrist, kontrollida oma pangakonto seisujne. Pakutavate m-teenuste nii suur varieeruvus on maailmas veel suhteliselt unikaalne. Pangad pakuvad m-maksete süsteemi väikepoodidele, taksodele ja muudele kohtadele, mis ei aktspteeri deebet- ja krediitkaarte (Krull 2003).

Sellegipoolest ei ole kogu ettevõtlussektor veel infotehnoloogiat oma tegevusse integreerinud. Aprillis 2002 läbi viidud Emori uuring näitab, et 31% jae- ja hulgimüügi-firmadest ning 51% haridus-, sotsiaal- ja tervishoiuteenuseid pakkuvatest firmadest ei oma arvutit. Ka väiksemad firmad (nt 29% kuni üheksa töötajaga firmadest) omavad arvutit väiksema tõenäosusega, samuti ei oma arvutit 53% firmadest, mille aastakäive on vähem kui 64 000 eurot. Tabel 8.9 annab ülevaate infotehnoloogia arengust Eesti ettevõtetes 2001–2003.

2003. a oli oma veebikülj ligikaudu 8300 Eesti ettevõtetel. See moodustas 35% nendest ettevõtetest, millel oli oma internetiühendus. Umbes 3200 ettevõtetel oli intraneti lahendus. Umbes 1300 ettevõtetel oli nii kodulehekülj kui ka intranet (Krull 2003). Tabel 8.10 võtab kokku kodulehekülgede arvu suurenemise 2001–2003.

Nende arvude põhjal võib väita, et firmad on pööranud enam tähelepanu interaktiivsele kommunikatsioonile firma sees. Lähiajal plaanis oma koduleheküljele arendada 4900 firmat ning 900 intranetisüsteemi. Enamik firmadest ei olnud oma Interneti- ja intranetilahendusi sidunud firma muude IT-süsteemidega. Siiski oli ligi 3% u 1100 Eesti ettevõtetest integreerinud vähemalt osa süsteeme. 2002. a plaanis vähemalt osa süsteeme integreerida u 1800 ettevõtet (Krull 2003).

Uurides, mis eesmärkidel firmad kasutavad Interneti, jõudis Emori uuring tulemusele, et Eesti

**Tabel 8.9 Infotehnoloogia Eesti ettevõtetes 2001–2004**

% ettevõtete arvust vastava aasta kevadel				
	2001	2002	2003	2004
Tegutsevate ettevõtete arv*	?	28 417	33 248	37 659
Vähemalt üht (töökoha)arvulit omavad ettevõtted	64	75	73	82
Internetiühendust omavad ettevõtted	95	89	95	75
Sh ettevõtted, mis kasutavad Interneti püsühendust	30	52	74	83
Sh ettevõtted, mis kasutavad Interneti sissehelistamisteenust	67	40	23	?

\* Äriregistri andmetel küsitlusele eelneva aasta lõpul. Allikad: Emor; RIA

**Tabel 8.10. Kodulehekülge omavate ettevõtete hulk Eestis 2001–2003**

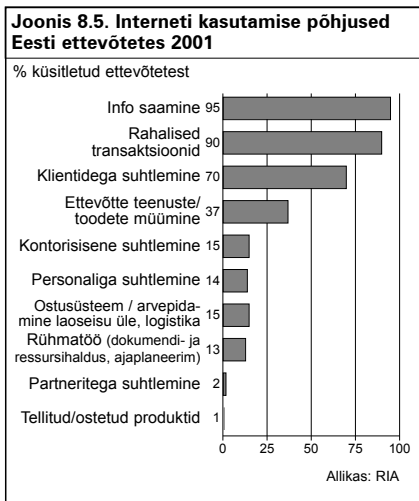
Aasta	Ettevõtete arv	% ettevõtetest
2001	~ 6300	35
2002	~ 7700	35
2003	~ 8300	36

Allikas: RIA

**Tabel 8.11. Interneti vahendusel pakutavad teenused Eesti ettevõtetes 2001**

Teenuse liik	% ettevõtetest
Ettevõtte toodete turustamine	24
Kataloogitoodetele ja hinnakirjadele juurdepääsu lihtsustamine	23
Klienditeenindus pärast ostu–müügitehingut	18
Digitaaltoodete saatmine	9
Mobiilse Internetiteenuse pakkumine	4
Muu	3

Allikas: RIA



ettevõtted on aktiivsed internetipanganduse võimaluste kasutamisel ning neil on valmisolek müüa oma tooteid ja teenuseid Internetis, aga ainult väga vähesed firmad on teenuseid või tooteid ise Interneti vahendusel ostnud (joonis 8.5; Krull 2003).

2001. a pakkusid Eesti ettevõtted Interneti vahendusel mitmesuguseid teenuseid, alates oma toodete turustamisest kuni mobiilse internetiteenuseni (tabel 8.11).

### 8.3.3.2. Pangandus

Vaadeldes panganduse võimalusi elektroonilise keskkonna integreerimisel oma tegevusse, tuleb eristada elektroonilist pangandust ja internetipangandust. Elektrooniline pangandus on mitmesugused traditsioonilised teenused: telefonipangandus, krediitkaardi ja deebetkaardisüsteemid, pangaautomaadid jms. Internetipangandus koos mobiilipanganduse ning digitaalse televisiooni

põhise pangandusega on üks uuemaid lisandusi elektroonilise panganduse vallas. Ka elektrooniline pangandus tervikuna on vaadeldav lisandina juba eksisteerivale raamistikule, mitte aga millegi täiesti uue loomine – see on üks Eesti suhtelise edu põhjusi selles valdkonnas (Kerem 2003).

Internetipangandus on kindlasti kõige populaarsem e-teenus Eestis. Hansapangal on enam kui 411 000 internetipanga klienti, Eesti Ühispangal u 187 000 (Eesti Informaatikakeskus 2003). Kuigi pankade kliendid osaliselt kindlasti kattuvad, ületab internetipanga klientide arv Eestis arvatavasti juba 650 000 piiri, hõlmates ligi poole Eesti elanikkonnast. Internetipanganduse edu põhjused on selle aluseks olev võrdlemisi lihtne tarkvara, tasuta transaktsioonide pakkumine ning Põhjamaade ITkultuuri mõjud Eestis (Kerem 2003).

Eesti elektroonilise panganduse ajalugu on vaid mõni aasta noorem kui Eesti panganduse lugu tervikuna. Hansapank lõi oma esimese elektroonilise panganduse lahenduse Telehansa 1993. a. Esimesed internetipangandust tutvustanud

pangad olid Eesti Foreksbank ja Eesti Hoiupank 1996. a (Eesti Pangaliit 2001).

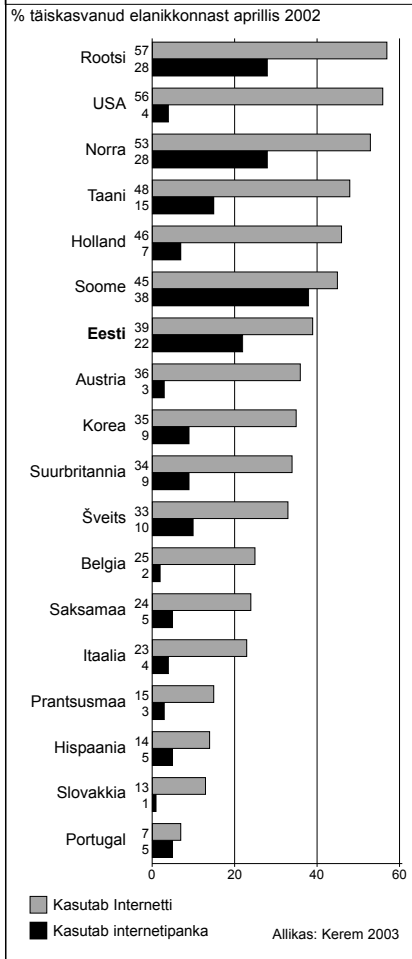
Eesti eeliseks peetaksegi just hiliseid IKT kasutuselevõtjaid, kuna neid ei seo vanad printsiibid, protsessid ja tehnoloogiad. Tänapäevane Eesti pangandus ning selle internetipõhised rakendused arenesid välja peaaegu paralleelselt, nii ei tulnud siin lammutada või ümber kujundada vana süsteemi. Vanadelt tehnoloogiatelt uutele üleminek on alati väga komplitseeritud. Maailmast ongi teada ka juhtumeid, kus juba eksisteeriv väga hea pangakontorite süsteem on pannud panku käsitlema Interneti endi tegevuse seisukohast pigem ohu kui võimalusena (Kerem 2003).

Kasutajad on internetipanganduse Eestis heaks kiitnud juba algusest peale. Ka selle olulisemaks põhjuseks on kindlasti see, et kuna kaasaegne Eesti pangandus on vaid viis aastat vanem kui elektrooniline pangandus, ei ole tarbijatel olnud aega harjuda erinevate pangakontorite süsteemiga. Panganduse algaegadel ei olnud pangakontorites teeninduse kvaliteet kuigi kõrge ning pangakontorisse minekut ei seostatud erilise tähelepanu saamisega ning end väärtusliku kliendina tundmisega. Pangad olid alles oma äri loomas ning paljudes piirkondades ei olnud pangakontorite arv piisav. See põhjustas pikki järjekordi ja tõi kaasa suurel hulgal raisatud aega, mis omakorda tegi elektroonilise panganduse tutvustamise lihtsamaks (Kerem 2003).

Uute tehnoloogiate kiire kasutuselevõtt on Eesti pankadel aidanud vältida lõkse, mis on arengut aeglustanud ka riikides, mille stardipositsioon oli tegelikult parem (joonis 8.6). Maailmapanga raport e-rahanduse alal viitab kolmele riigile kui mõjukatele edasiliikujatele infotehnoloogiliste lahenduste vallas ning need on Korea Vabariik, Eesti ning Brasiilia (Claessens jt 2001). Maailma juhtivate pangasüsteemide loomine on siin toimunud märkimisväärselt madalate kulutustega võrreldes teiste maailmaklassi internetipankadega (Sahlen 2002).

Pankadel on oluline osa Eesti infoühiskonna kujunemisel tervikuna, kuna pangandusel on olulised sidemed kogu Eesti info- ja kommunikatsioonitehnoloogia klastriga. Pangad investeerivad pidevalt infotehnoloogiatesse, kuna kasutajad mõjutavad kasutajasõbralikesse ITlahendustesse investeerimist. Eesti pankadel on oma ITosakonnad, mille tegevuseks on ka ITarkvara tootmine. Mõnel juhul eelistavad pangad pakkuda võimalusi ka väiksematele IKTlahenduste pakkujatele, luues nõudmise teenustele nagu krüptograafia, e-kaubanduse lahendused, keeletehnoloogiad. Nii võib öelda, et potentsiaalselt on neil väljavaade toetada innovatsioone. Telekommunikatsioonisektori ja

**Joonis 8.6. Internetipanganduse levik rahvusvahelises võrdluses 2002**



panganduse interaktsioon on eriti märkimisväärne ühisprojektide tõttu mobiisideoperaatoritega (Kerem 2003).

Pankade mõju infoühiskonnale tervikuna seisneb ka selles, et pangad loovad internetisisu, mis on osutunud klientidele väärtuslikuks. Suur osa elektroonilistest pangateenustest on veel praegugi tasuta. Pangandus on samas ka üks neist vähestest e-teenustest, mille puhul on tarbijad nõus maksma selle eest, mida nad kasutavad. Huvitav on ka see, et Eesti tarbijad eelistavad internetipanka kui värvate teenuste tarbimiseks (eelistades neid isegi teenusepakkujaille endile). Nii on maksuametlike

elektrooniliste tuludeklaratsioonide täitjate hulgas palju neid, kes eelistavad vormi täitmisel lähtekohana Hansapanka maksuametile.

Pangad on ka funktsionaalsed vahendajad, kes loovad võimalusi maksete tegemiseks ja muudeks transaktsioonideks üle Interneti. Pangalingi teenused pakuvad riskivaba keskkonda e-kaubanduse ja e-teenuste pakkujatele – kliendid maksavad nende vahendusel oma kaupade eest. Lisaks aitavad pangad luua üldist nõudlust lisateenustele. Inimesed, kes on juba Internetipanga kasutajad, on valmis kasutama täiendavaid e-teenuseid. Internetipanga konto omanikena on neil selleks ka võimalus (Kerem 2003).

## 8.4. Uus meedia ja üksikkasutajad

### 8.4.1. Esimesed uuringud

Eesti meediakasutuse analüüsid on uuringufirma Baltic Media Facts (BMF) juba 1994. a uuringus küsinud inimestelt mobiiltelefoni ja koduarvuti omamise kohta, samuti seda, kui huvitatud inimesed arvutitest on. Tabel 8.12 näitab nende arvude dünaamikat läbi aastate kolmes Balti riigis, kus BMF oma küsitlusi korraldas.

Internetikasutajate süstemaatilisemate uurin-gute alguseks Eestis võib lugeda alates 1997. a kevadest BMFi poolt läbi viidud arvuti- ja internetikasutajate uuringuid. 1998 küsitleti üle Eesti 1500 inimest (BMF 1999), 1999. a valimis oli 300 inimest, kes olid 6 kuu jooksul enne küsitlust kasutanud Interneti. Uuringute fookus nihkus arvutitelt Internetile (BMF 2000b). Alates 2000. a viib arvuti- ja internetikasutuse uuringud läbi Emor (algsest üks kord kuus, hiljem üks kord kvartalis telefoniküsitlused 500 inimesega).

1999. a uuringus tehti esimene katsetus internetikasutajate sisuliseks liigitamiseks. Liigituse põhialus on arvutikasutuse aktiivsus. Nädala jooksul viiel või enamal päeval arvutit kasutanuid, keda uuringus nimetatakse *heavy user*iteks, on kõigist arvutikasutajatest 40%. Nn *medium user*eid on kõigist arvutikasutajatest 30% (kasutavad arvutit 1–4 päeval nädalas). 1999. a oli nn *light user*eid samuti 30% arvutikasutajaist. Olulisena tuuakse välja, et *light user*ite osakaal on võrreldes 1998. a kasvanud (BMF 2000). See näitab, et umbes sellel ajal toimus sisuline nihe arvutikasutuses – see polnud enam vaid erilisele seltskonnale, kelle jaoks arvuti oli töövahend või hobi, vaid arvuti hakkas jõudma laiema kasutajaskonnani, kellel ei pruugi olla otsest vajadust arvutit kasutada.

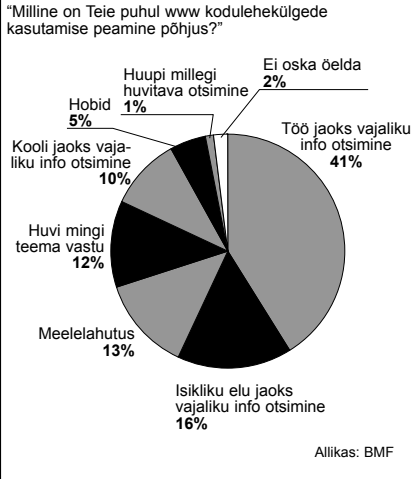
Internetikasutajate liigitused on samuti tehtud kasutusaja ja viimasest kasutusest möödunud aja

	1994		1995		1997		1999		2000		Allikas: BMF, Emor
	Eesti	Läti	Eesti	Läti	Eesti	Läti	Eesti	Läti	Eesti	Läti	
Mobiiltelefon	2	1	3	1	7	2	33	15	52	22	20
Koduarvuti	3	3	4	2	5	3	14	6	?	?	?
Väga huvitatud arvutitest	9	8	12	8	15	11	17	11	52	14	10

Tabel 8.12. Mobiiltelefoni ja koduarvuti omamine, huvi arvutite vastu Balti riikides 1994–2000

% elanikkonnast vanuses 15–74

**Joonis 8.7. Kodulehekülgede kasutamise peamised põhjused 1999**



ning kasutusaktiivsuse järgi. Interneti sisulise kasutuse järgi eristatakse kasutajaid kodulehekülgede kasutamise peamise põhjuse järgi (joonis 8.7).

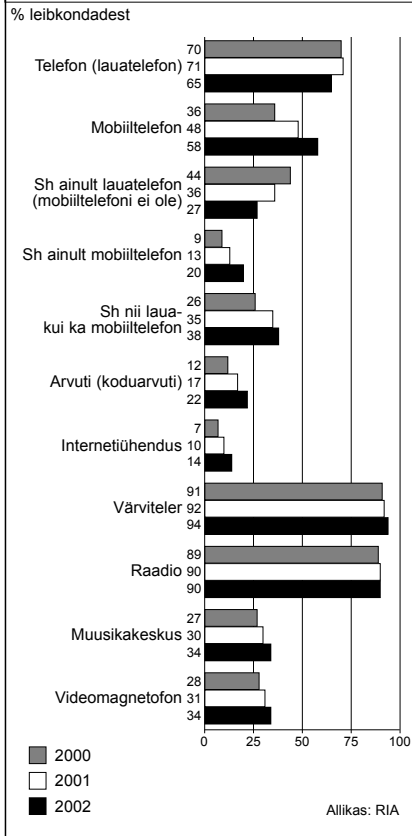
Järgmist etappi uue meedia kasutajate uurinutes iseloomustab Emori-poolne huvilangus internetiuuringute vastu. Emori online-uudiste arhiivi vaadates on võimalik näha, et kui varasematel aastatel on Interneti-teemalisi uuringuid olnud rohkem, siis 2003. a oli Emori uudistes vaid 6 internetiuuringutega seotud uudist, neist üks võttis kokku 2002. a tulemusi. See on seletatav sellega, et Emori põhiline internetiuuringu teenus E-seire muutus senisest harvemaks ja varasemad kvartaalsed uuringud korraldatakse nüüd kaks korda aastas.

#### 8.4.2. Uue meedia kasutajad

Interneti-teemalisi uuringuid kogub ja nende tulemusi avaldab oma kodulehel Riigi Infosüsteemide Arenduskeskus (RIA). Sealt on samuti võimalik saada uuringutulemusi peamiselt 3–4 viimase aasta võrdluses. Joonis 8.8 näitab kodude varustatust info ja kommunikatsioonitehnoloogiatega. Varustatus on mitmel puhul suurenenud, kuid vähenenud on tavatelefooni omanike osakaal ja seda just peamiselt mobiiltelefoni kasuks. Samas on jooniselt ka näha, et nn infoühiskonna tehnoloogiad (arvutid ja Internet) ei ole siiski Eesti kodudes veel väga laialt levinud.

Samas on kasv olnud väga kiire. Emori andmetel on internetikasutus 15–74aastase Eesti elanik-

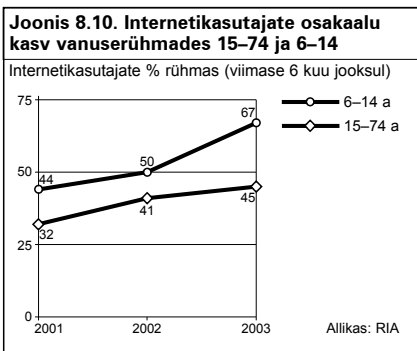
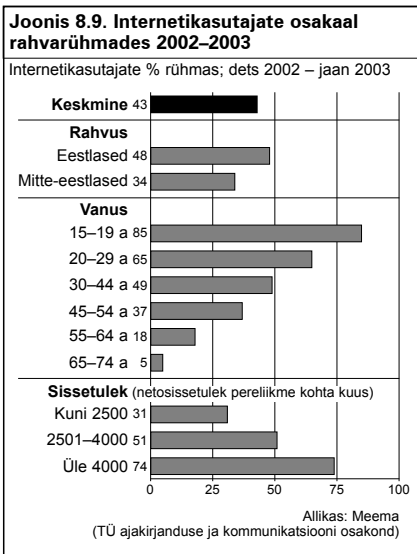
**Joonis 8.8. Eesti leibkondade varustatus info- ja kommunikatsioonitehnikaiga 2000–2002**



konna hulgas viie aasta jooksul (sügisest 1998 sügiseni 2003) kasvanud üle kolme korra, 14%lt 47%ni (Emori uudised 18. veebr 2004; Randver 2004). Viimaste andmete kohaselt oli 2004. a algul Eestis internetikasutajaid 52% 6–74aastasest elanikkonnast (Emori uudised 21. juuni 2004).

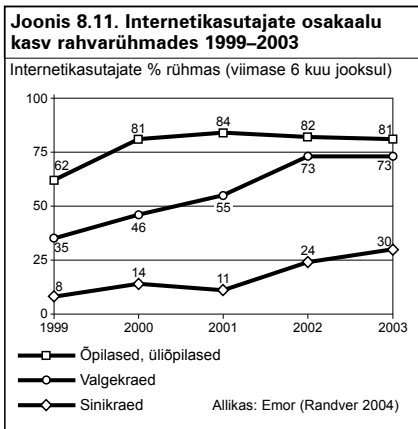
Joonisel 8.9 toodud ülevaade internetikasutusest põhilistes rahvarühmades näitab, et see on kõige enam seotud vanusega. Erinevused kõige noorema ja kõige vanema vanusegrupi vahel olid 17-kordsed. Suuri erinevusi oli ja on sissetuleku- ja haridusgruppide vahel, samuti eestlaste- ja mitte-eestlaste vahel, kuid mitte niivõrd maa- ja linnaelanike vahel (vt lisatabel 6.1).

Põlvkondlike erinevusi analüüsid on oluline võrrelda mitte ainult noori (15–19aastasi) ja vanu (65–74aastasi), vaid ka tavaliselt käsitletavat elanikkonna esindust (15–74aastasi) ja lapsi



(6–14aastasi). Vastav võrdlus (vt joonis 8.10) näitab selgesti, et internetikasutajate osakaal laste hulgas ei ole mitte ainult suurem põhirühmast, vaid 2003. a on suhteline vahe suurenenud. Tendentis võib olla seletatav sellega, et laste internetikasutust soositakse koolis ja kodus ning noori kasutajaid kasvab aina juurde, kuid vanemate kasutajate juures on Eesti jõudmas nn küllastumispunkti, kus uute kasutajate lisandumine on seotud peamiselt nendesamadate noorte kasutajate kasvamisega ja vähem uute vanemate kasutajate liitumisega. Samas võib loota, et sihtasutuse Vaata maailma internetikasutajate koolitus on oma mõju veel avaldamas.

Vaata maailma positiivset mõju näeme selgesti ka Emori 2003. a sügisel kogutud andmetest, mis



näitavad internetikasutuse sotsiaalse kandepinna muutumist. Sügisel 1999 olid põhilised internetikasutajad õppurid, kelle seas kasutajate osakaal jõudis juba 2000. a üle 80%. Valgekraede hulgas (iseendale töandjad, juhid ja spetsialistid, ametnikud ja teenindajad) tõusis internetikasutajate osakaal üle poole 2001 ja jõudis kolmveerandini 2002. Sinikraede (liht- ja oskustöölise) internetikasutus oli üsnagi tagasihoidlik kuni 2002. aastani, seejärel on märgatavalt tõusnud, jõudes 30%ni sügisel 2003 (vt joonis 8.11).

Sihtasutuse Vaata maailma püüdlused just vanemate ja madalama kvalifikatsiooniga inimeste toomiseks internetikasutajate hulka on vilja kandnud. Kevadest 2002 kuni kevadeni 2004 õppis Internetti kasutama 40 000 liht- ja oskustöölise, kelle igapäevatöö ei nõua enamasti Interneti kasutamist (Randver 2004).

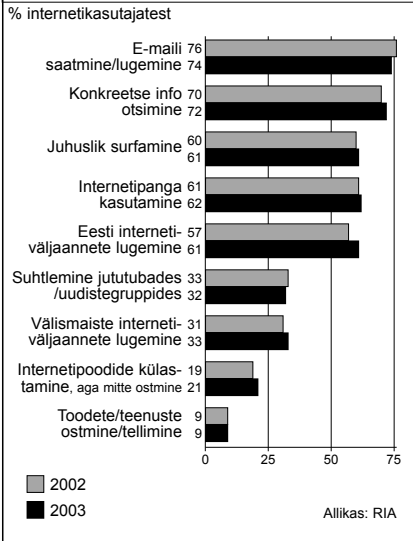
Kuigi sageli eelistatakse rõhutada, et internetikasutus on ühtmoodi oluline kõigile, on uuringud siiski näidanud, et kasutamise ajendid on eri rahvarühmades erinevad. Joonis 8.12 näitab, et internetikasutuse peamiseks põhjusteks osutus 2002.–2003. a e-mailide saatmine/lugemine ja konkreetse info otsimine. Ka sellelt jooniselt selgub, et Internet oli ostude sooritamise koht marginaalsele hulgal kasutajast ning aasta jooksul olnud ostutegijate osakaal märkimisväärselt muutunud.

### 8.4.3. Internetikasutajate tüübid

2002 detsembris – 2003 jaanuaris korraldas TÜ ajakirjanduse ja kommunikatsiooni osakond suure küsitluse “Mina, maailm, meedia” (Meema), mille üks eesmärk oli uurida uue meedia kasutajaid. Uuringus eristati kasutajaid internetikasutuse



**Joonis 8.12. Interneti kasutamise põhjused 2002–2003**



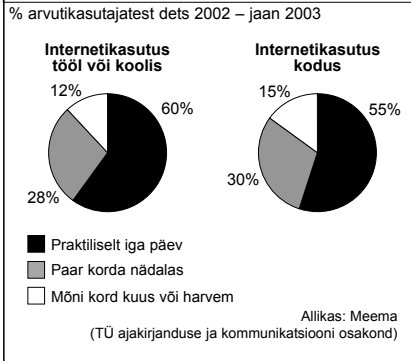
sageduse, kasutama hakkamise aja ja Internetile kulutatud aja järgi.

Interneti kasutama hakkamise aja järgi jagunesid Eesti internetikasutajad aastavahetusel 2002/2003 kolmeks ligikaudu võrdseks grupiks: 33% alustas Interneti kasutamist samal või eelmisel aastal, 38% alustas paar–kolm aastat tagasi ja 29% vastuaniit on kasutanud Interneti juba enam kui neli aastat.

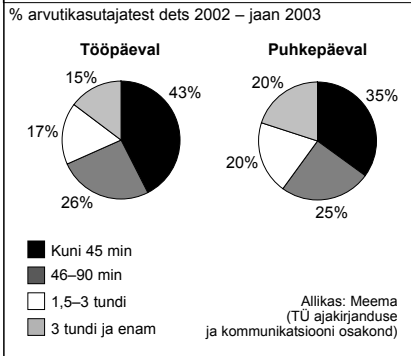
Joonis 8.13 näitab, et igapäevaste kodukasutajate hulk jäi pisut alla töökasutajatele, kuid harvemat kasutajate jaoks oli kodu pisut enam internetikasutuse kohaks kui töökoht. Samuti on sellelt jooniselt võimalik näha, et ligi kaks kolmandikku internetikasutajatest olid pigem igapäevased kasutajad ning inimesi, kes kasutasid Interneti vaid mõni kord kuus või harvem, oli kodus ja töökohal kasutajatest veidi üle 10%. Samas on oluline märkida, et kasutuse kohta tööl või koolis oli vastanud 10% rohkem inimesi kui kodukasutuse kohta (st paljud nendest, kes kodus Interneti ei kasutanud, olid jätnud vastamata).

Joonis 8.14 illustreerib, et hoolimata ajakirjanduses<sup>1</sup> ilmunud väidetest Interneti kasutamiseks kuluvast rohkem ajast, kulub vaid 15% vastajatest tööpäeval Internetile kolm või enam tundi. Puhkepäeval on see protsent küll 20, kuid tuleb pidada silmas, et puhkepäevase kasutuse kohta on vastanud 10% vähem inimesi kui tööpäeva kohta.

**Joonis 8.13. Internetikasutuse sagedus kasutuskoha järgi 2002–2003**



**Joonis 8.14. Internetile kuluv aeg töö- ja puhkepäeval 2002–2003**



Uuringus esitati küsimus 24 võimaliku tegevuse kohta Internetis. Vastuste põhjal eristati faktoranalüüsiga (vt lisatabel 6.2) põhilised internetikasutuse funktsionaalsed rühmad: internetikasutuse info saamiseks, suhtluseks, kommentaarideks ja foorumiteks (portaalikasutuseks), isikliku info saamiseks ning ostudeks ja erootikaks. Klusteranalüüsi meetodil saadi selle alusel internetikasutajate tüübid, mida iseloomustavad neid kujundanud faktorite keskmised (vt lisatabel 6.3), erinev orienteeritus Interneti poolt pakutavate teenustele (lisatabel 6.4), erinev sotsiaaldemograafiline koosseis (lisatabel 6.5) ning erinev internetikasutuse kogemus ja kasutamise maht (lisatabel 6.6).

Kasutajatüübid erinevad üksteisest internetikasutuse aktiivsuse poolest (mis esimesest tüübist viimaseni üldiselt väheneb), aga ka orienteerituse poolest Interneti poolt pakutavatele erinevatele teenustele. Kokkuvõtlikult võib internetikasutajate tüüpe iseloomustada järgnevalt.

<sup>1</sup> <http://www.postimees.ee/121103/esileht/118872.php>

**1. Vähekasutajale** (20% internetikasutajatest) on omane väheaktiivne suhe Internetiga ja kindlate kasutuseelistuste puudumine. See kasutajatüüp on levinud keskealiste ja vanemate inimeste hulgas (42% tüüpi koosseisust vanuses üle 45 aasta). Vähekasutajad on pigem keskharidusega ja keskmisest madalama sissetulekuga.

**2. Eraeluliste teenuste kasutaja** (15% internetikasutajatest) on orienteeritud mitmekesise info saamisele, kuid esiplaanil on see, mis seondub elu-ase, töö ja reisimisega, mõnevõrra vähemal määral kohtamisteenustega, pere ja tervisega. Selline interneti kasutusviis on omane eeskätt 20–44-aastastele naistele (76% vanuses 20–44).

**3. Virtuaalses avalikkuses osaleja** (18% internetikasutajatest) on orienteeritud eeskätt foorumites ja jututubades osalemisele, kommentaaride lugemisele ja kirjutamisele. Selles kasutajatüübis on enamuses noored ja nooremas keskeas mehed (81% vanuses 15–44).

**4. Suhtleja** (17% internetikasutajatest) jaoks on isikutevaheline suhtlus veelgi outisem, teised kasutusala peale foorumites ja jututubades osalemise, kommentaaride lugemise ja kirjutamise hoopis vähemtähtsad. Selline interneti kasutusviis on omane eeskätt noortele, eriti 15–19aastastele (49% tüüpi koosseisust).

**5. Mitmekülgne interaktiivne võrgusolija** (15% internetikasutajatest), kelle puhul Internet on ennekõike keskkond. internetikasutuses on keskel kohal isikutevaheline suhtlemine, praktilise info saamine, märkimisväärse tähtsusega on ka üldiselt vähemolulised ostud ja erootika. Selles tüübis domineerivad 20–29aastased (48% tüüpi koosseisust), pigem mehed kui naised.

**6. Mitmekülgne infokasutaja** (16% internetikasutajatest), kellele Interneti kasutamisel on oluline erialane ja õppimisega seonduv info, samuti majanduslik, õiguslik, poliitiline jms info ning kõikvõimalik praktiline info. Selles tüübis domineerivad keskealised kõrgharidusega inimesed (54% vanuses 30–54, 59% kõrgharidusega).

Lisatabeli 6.6 põhjal on võimalik ülalkirjeldatud kasutajatüüpe iseloomustada kasutamise algusaja, kasutussageduse ja -koha ning kasutuse mahu järgi.

Internetikasutuse alguse järgi eristusid kaks vastandlikku gruppi: Internetti vähe kasutavad inimesed (I tüüp), kellest pooled hakkasid Internetti kasutama sel või eelmisel aastal, ning teiselt poolt mitmekülgset infokasutajad (VI tüüp), kellest 55% hakkas Internetti kasutama enam neli aastat tagasi ja kelle hulgas uued kasutajad praktiliselt puuduvad (3% tüüpi koosseisust).

Praktiliselt iga päev kasutasid koduses keskkonnas Internetti need, kelle jaoks see oli info han-

kimiseks, osalemiseks või suhtlemiseks (vastavalt VI, III ja IV tüüp), eriti aga need, kellele võrk oli interaktiivne ümbritsev keskkond (II tüüp – 80% kasutas Internetti kodus praktiliselt iga päev). Harvade kasutajate rühm oli iseenesest suhteliselt väike (vt joonis 8.11), kuid sinna oli kõige enam sattunud vähekasutajaid (I tüüp) ja neid, kellele jaoks Internet oli eraeluliste teenuste kanal (II tüüp).

Tööl ja koolis olid teistest märgatavalt aktiivsemad mitmekülgset infokasutajad (I tüüp), kellest 87% kasutas Internetti praktiliselt iga päev, st nende tõise kasutuse aktiivsus oli oluliselt suurem kui kodune aktiivsus. Vastupidine suhe, kodus rohkem kui tööl ja koolis oli omane eeskätt suhtleja (IV tüüp). See on ilmselt seotud sellega, et suhtleja rühma kuulus kõige rohkem noori (õppureid), kellel on võimalik koolis Internetti kasutada pigem paar korda nädalas kui iga päev. Kodune kasutus oli tõisest sagedasem ka nendel, kelle jaoks Internet on interaktiivne keskkond (V tüüp).

Internetile kuluva aja järgi eristusid mitmekülgset infokasutajad (VI tüüp) ja mitmekülgset interaktiivset võrgusolijad (V tüüp), kellest ligemale pool kulutas Internetile tööpäeviti enam kui poolteist tundi, veerand – enam kui kolm tundi. Viimaste jaoks Internet on ilmselt kas põhiline töövahend või pidev taust. Puhkepäeviti veetsid Internetiga üle kolme tunni päevas ennekõike suhtlejad (IV tüüp).

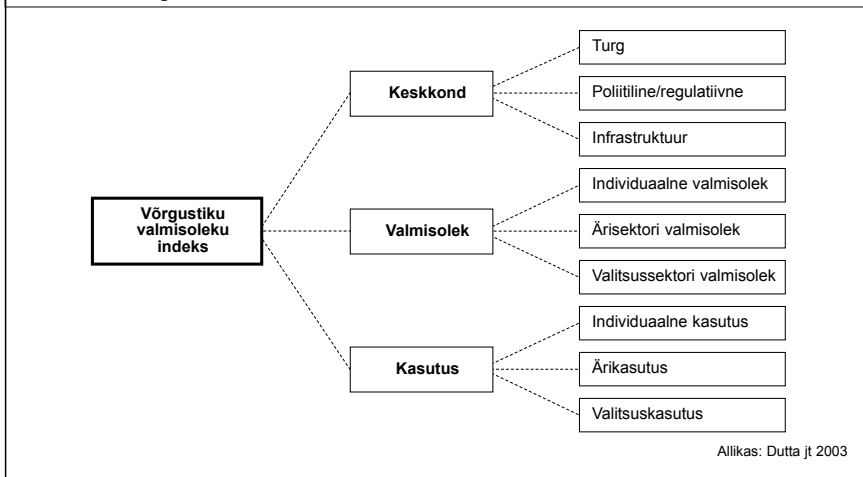
## 8.5. Eesti uus meedia rahvusvahelises võrdluses

### 8.5.1. Rahvusvahelised võrdlusindeksid

Kuna infoühiskonna ja uue meedia teematikat on aktiivselt seotud riigi läbilõigivõime ja edukusega, siis on uue meedia kättesaadavus ja kasutus rahvusvaheliste võrdluste aluseks. Kui lihtsamad võrdlusi tehakse ennekõike mõne põhilise tunnuse alusel, siis viimastel aastatel on levinumad just kompleksed indeksid, mis võrdlevad riike väga erinevate indikaatorite alusel.

Maaailma Majandusfoorum annab näiteks välja “Globaalse infotehnoloogia aruannet”, mis on osa “Globaalse konkurentsivõime aruandest” (Dutta jt 2003, 2004). Joonis 8.15 annab ülevaate võrgustiku valmisoleku indeksi raamistikust 2002.–2003. a kohta. Täpsem info Eesti positsiooni kohta selle alusel tehtud rahvusvahelises võrdluses on esitatud lisatabelis 8.11. Seal esitatud andmed näitavad Eestit väga eduka infotehnoloogia arendajana, seejuures aga on Eesti nihkunud 2001–2003 võrgustiku valmisolekult igal aastal koha võrra tahapoole, eeskätt üldise infrastruktuuri kehva väljaaren-

Joonis 8.15. Võrgustiku valmisoleku indeks 2002–2003



datuse tõttu. Valitsuse töö infotehnoloogilise arendatuse poolest kuulub Eesti püsivalt juhtivate riikide hulka maailmas.

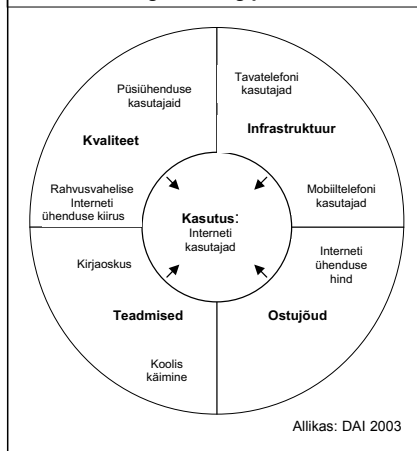
Rahvusvaheline Telekommunikatsiooni Liit on koostanud 2003. a digitaalse ligipääsu indeksi, mille eesmärk on võrrelda erinevaid riike mitte ainult Interneti ligipääsu, vaid ka selle kasutamise poolest. Digitaalse ligipääsu indeksi tutvustuses tsiteeritakse Infoühiskonna Foorumi (*World Summit of Information Society*) deklaratsiooni kavandit:

Deklareerime oma ühist huvi ja pühendumist inimkeskse, kaasava, arengule orienteeritud infoühiskonna ehitamisele, kus igaüks saab luua, pääseda ligi, kasutada ja jagada informatsiooni ja teadmisi, mis võimaldava indiviididel, kogukondadel ja inimestel saavutada nende kogupotentsiaal, toetades ja edendades jätkusuutlikku arengut ja elukvaliteeti (DAI 2003).

Deklaratsioon näitab seda, kui keskseks peetakse ühiskonna arengus ja edasiminekus infotehnoloogiat ja uut meediat. Digitaalse ligipääsu indeksi kirjeldab joonis 8.16, mis võtab kokku indeksi erinevad komponendid, mida peetakse oluliseks infotehnoloogia ligipääsu indeksi koostamisel. Eesti positsioon DAI indeksi alusel tehtud analüüsis on esitatud lisatabelis 8.11. Näeme, et Eesti on selle indeksi järgi Sloveenia järel üks edukamaid siirderiike, edestades ELi varasemaid liikmeid Lõuna-Euroopast (Hispaania, Portugal, Kreeka).

Lisatabelites 8.13–8.16 on toodud andmed Maailma Majandusfoorumi ekspertide poolt välja arvatud kasvupotentsiaali indeksi (*Growth Com-*

Joonis 8.16. Digitaalse ligipääsu indeks



*petitiveness Index*) ja selle alaindeksite kohta (tehnoloogia, avalikud institutsioonid, makromajanduslik keskkond). Selle indeksi alusel koostatud riikide pingereas on Eesti aasta-aastalt jõudsalt oma kohta parandanud, jõudes 2003. a 22. kohale maailmas. Tehnoloogilise arengu poolest oli Eesti 2003. a koguni 10. kohal, avalike institutsioonide arengu poolest 28. kohal ja makromajandusliku keskkonna poolest 34. kohal. Seejuures on just viimase alaindeksi lõikes toimunud märgatav positiivne areng – 2002. a oli hinnang makromajanduslikule keskkonnale palju tagasihoidlikum (46. koht). Toenäoliselt parandavad SKP arengu

head näitajad ja liitumine ELga hinnangut makro-majanduslikule keskkonnale veelgi.

### 8.5.2. Eesti võrdluses Baltimaadega

Kuna Eesti on oma arengus teiste Balti riikidega võrreldes kiirem olnud, siis on võrdlus naabritega soodne (vt joonis 8.17). Kui tabelist 8.12 on näha, et Eesti arvutikasutuse areng oli esimestel aastatel suhteliselt sarnane teiste Balti riikidega, siis nüüd on näha, et Eesti areng on olnud stabiilselt tempokas, samas kui Läti internetikasutajate hulk aastatel 2001–2002 praktiliselt ei muutunud ning Leedu areng oli 2000–2001 väga aeglane. 2003. a kasvas internetikasutajate hulk kõige kiiremini aga Leedus, kuna arvutikasutajate hulk oli märgatavalt kasvanud, samuti suurendas internetikasutajate arvu projekti “Aken tulevikku” edu (sarnane Eesti projektile Vaata maailma).

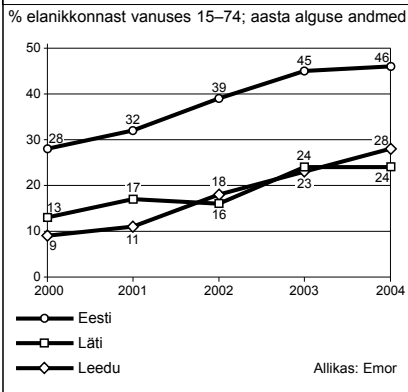
### 8.5.3. Eesti avalik sektor rahvusvahelises võrdluses

E-riiki puudutavast uuringust (nov 2003), milles uuriti avaliku sektori e-teenuste kasutamist 32 riigis, selgub, et Eesti on Kesk- ja Ida-Euroopa arenumaid avaliku sektori e-teenuste kasutajaid.

36% Eesti 16–74aastastest elanikest on kasutanud Internetti avaliku sektoriga suhtlemiseks: riigiasutuste kodulehekülgedelt info otsimiseks, sealt blankettide välja trükkimiseks, enda kohta info edastamiseks, maksete tasumiseks riigiasutustele või osalemiseks avalikus arutelus (Emor).

Kõige laiemalt kasutatakse avaliku sektori e-teenuseid Taanis ja Norras, kus interneti vahendusel on neid teenuseid kasutanud 62–63% elanikest. Neile järgnevad Soome, Singapur ja Holland. Kõigis nendes riikides on ka Interneti kasutajaskond suur. Ida-Euroopa riikidest järgneb Eestile Tšehhi, kus peaaegu neljandik täiskasvanud elanikkonnast on kasutanud avalikke e-teenuseid. Lätis ja Leedus on avaliku sektoriga veebi kaudu suheldud vastavalt 14% ja 12% elanikest (Emor).

**Joonis 8.17. Internetikasutajate osakaalu kasv Balti riikides 2000–2004**



Võrreldes teiste riikidega torkavad eestlased silma Interneti vahendusel makseid teinute suure hulga - uuringule eelnenud 12 kuu jooksul oli riigi- ja valitsusasutustele Interneti vahendusel makseid teinud 26% eestimaalastest. Sellega jagab Eesti Taaniga 2.–3. positsiooni uuringus osalenud riikide pingereas ning meid edestab vaid Soome. TNS Emori projektijuhi Kristina Randveri hinnangul toetub edu internetipanganduse laialdasele levikule Eestis (Emor).

### 8.6. Kokkuvõte

Niisama mitmekülgne kui on Internet, on ka selle kasutajad. Käesoleva peatükiga on püütud anda väike läbilõige erinevatest internetikasutuse valdkondadest ja nende arengust. Internet ei ole ainult meediakanal, vaid tegutsemiskeskond nii avalikule kui ka erasektorile. Palju räägitud Eesti edu Interneti alal ei ole aga alati nii ühene, vaid edukuse määr varieerub erinevate uuringute ja valdkondade lõikes.

## **Lisa 6**

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### **INTERNETI KASUTAMINE**

Koostanud Pille Vengerfeldt ja Pille Runnel

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Lisatabel 6.1a. Internetikasutus rahvarühmades 2002-2003

Internetikasutajate % antud rahvarühmas; detsember 2002 – jaanuar 2003

Kas kasutate Interneti?	Kõik interneti-kasutajad	Sugu		Rahvus		Vanus						Haridus		
		Mees	Naine	E	ME	15-19	20-29	30-44	45-54	55-64	65-74	Alla kesk	Kesk	Kõrg
Jah (% kõigest küsitletutest)	43	47	39	48	34	85	65	49	37	18	5	31	38	69
Ei (% kõigest küsitletutest)	57	53	61	52	66	15	35	51	63	82	96	69	62	31
<b>Miljal hakkasite arvutit kasutama?</b>														
Sellel või eelmisel aastal	22	19	25	20	28	12	19	27	26	26	47	22	29	10
Paar-kolm aastat tagasi	50	50	50	50	50	69	49	42	49	39	53	62	49	45
Enam kui neli aastat tagasi	28	31	25	30	22	19	32	31	25	36	0	15	21	45
<b>Miljal hakkasite Interneti kasutama?</b>														
Sellel või eelmisel aastal	33	32	35	29	44	27	28	38	42	27	45	33	41	21
Paar-kolm aastat tagasi	38	37	39	38	37	49	37	31	36	45	44	51	32	41
Enam kui neli aastat tagasi	29	31	26	32	19	24	35	30	22	28	10	16	27	38
<b>Interneti kasutamise sagedus tööl ja koolis</b>														
Mõni kord kuus või harvem	12	10	15	9	21	19	12	11	12	3	0	23	14	7
Paar korda nädalas	28	26	30	27	30	57	28	15	18	10	53	55	27	15
Praktiliselt iga päev	60	64	55	63	50	24	60	75	71	87	47	22	59	78
<b>Interneti kasutamise sagedus kodus</b>														
Mõni kord kuus või harvem	15	11	19	14	17	7	13	20	12	18	34	14	13	17
Paar korda nädalas	30	29	32	33	23	25	27	32	34	41	33	18	33	31
Praktiliselt iga päev	55	60	49	54	59	68	60	48	54	41	34	68	54	51

E – eestlased; ME – mitte-eestlased.

Allikas: Meema (TU) ajakirjanduse ja kommunikatsiooniosakond)

<b>Lisatabel 6.1b. Internetikasutus rahvarühmades 2002–2003</b>											
Internetikasutajate % antud rahvarühmas; detš 2002 – jaan 2003											
Kas kasutab interneti	Kõik interneti- kasutajad	Sissetulek pereliikme kohta					Asulatüüp				
		Kuni 1500	1501–2500	2501–4000	4001–6000	Üle 6000	Pealinn	Suur linn	Väikelinn	Maa	
Jah (% kõigist küsitluteist)	43	33	51	72	79	52	34	45	39		
Ei (% kõigist küsitluteist)	57	67	49	28	21	48	66	55	61		
<b>Miljal hakkasite arvutit kasutama</b>											
Sellel või eelmisel aastal	22	23	22	13	4	16	29	29	22		
Paar-kolm aastat tagasi	50	60	42	55	44	48	49	48	54		
Enam kui neli aastat tagasi	28	17	36	32	52	36	23	23	25		
<b>Miljal hakkasite interneti kasutama</b>											
Sellel või eelmisel aastal	33	34	36	28	13	28	43	37	32		
Paar-kolm aastat tagasi	38	40	33	46	39	37	30	36	45		
Enam kui neli aastat tagasi	29	25	32	26	48	35	27	27	23		
<b>Interneti kasutamise sagedus tööl ja koolis</b>											
Mõni kord kuus või harvem	12	21	11	6	3	14	19	11	7		
Paar korda nädalas	28	37	22	19	10	24	28	33	29		
Praktiliselt iga päev	60	42	67	75	87	62	53	57	64		
<b>Interneti kasutamise sagedus kodus</b>											
Mõni kord kuus või harvem	15	17	11	15	5	13	24	8	18		
Paar korda nädalas	30	36	32	34	30	31	21	35	30		
Praktiliselt iga päev	55	47	57	52	66	56	55	57	53		

Allikas: Meema (TU ajakirjanduse ja kommunikatsiooni osakond)

Lisatabel 6.2. Interneti teenuste faktormatriks

Extraction Method: Principal Axis Factoring. Rotation Method: Varimax with Kaiser Normalization

	Informatiivne faktor	Suhtluse faktor	Portaalifaktor	Isikliku info faktor	Ostud ja erootika
Internet majandusinfoks	<b>0,701</b>		0,177	0,106	
Internet õigusalasaks infoks	<b>0,690</b>			0,126	
Internet erialaseks infoks	<b>0,667</b>		0,207	0,164	-0,133
Internet tuludeklaratsioonideks ja ametlikeks dokumentideks	<b>0,642</b>				0,215
Internet pangatehinguteks	<b>0,556</b>			0,139	0,247
Internet poliitiliseks infoks	<b>0,539</b>		0,306	0,136	
Internet pere ja terviseinfoks	<b>0,408</b>	0,223	0,345	0,136	-0,298
Internet jututubadeks	<b>0,367</b>	0,133	0,194	0,211	
Internet jututubades ja foorumides	-0,126	<b>0,850</b>	0,103		
Internet onlinemängudeks		<b>0,834</b>	0,156		
Internet kohtamisteenusteks		<b>0,471</b>	0,188		0,210
Internet meelilistideks	0,125	<b>0,424</b>	0,132	0,302	0,141
Internet kiirteadete vahetuseks (ICQ)	0,152	<b>0,414</b>	0,288	0,131	
Internet kommentaaride lugemiseks	0,111	<b>0,404</b>	0,276		
Internet foorumideks ja uudisrühmadeks	0,184	0,169	<b>0,663</b>	0,108	0,156
Internet kommentaaride kirjutamiseks	0,295	0,271	<b>0,596</b>		
Internet otsingumootoriteks	0,283	0,268	<b>0,503</b>		0,263
Internet eluasemeotsimiseks	0,204	0,248	<b>0,477</b>	<b>0,639</b>	0,112
Internet töö otsimiseks	0,393	0,118	0,128	<b>0,490</b>	
Internet ostudeks ja oksjonideks	0,155	0,120	0,118	<b>0,455</b>	<b>0,381</b>
Internet erootikaks		0,230	0,129	0,158	<b>0,323</b>

Paksud kirjaga on märgitud domineerivad teenused antud faktoris.

Allikas: Meema (TÜ ajakirjanduse ja kommunikatsiooni osakond)



Lisatabel 6.3. Interneti kasutuse klustrite koosseis							
	N	Informatiivne faktor	Suhtluse faktor	Portaalifaktor	Isikliku info faktor	Ostud ja erootika	
Vähekasutaja	110	-0,67	-0,68	-0,70	-0,40	0,07	
Eraeluliste teenuste kasutaja	80	0,12	-0,45	-0,54	0,79	-0,09	
Virtuaalses avalikkuses osaleja	101	-0,13	-0,49	0,77	-0,32	-0,08	
Suhtleja	94	-0,41	1,22	0,00	-0,42	-0,34	
Mitmekülgne, interaktiivne võrgus oija	81	0,06	0,92	0,40	0,78	0,69	
Mitmekülgne infokasutaja	89	1,33	-0,37	0,12	-0,02	-0,18	

Allikas: Meema (TÜ ajakirjanduse ja kommunikatsiooni osakond)

Lisatabel 6.4. Erinevate teenuste kasutamine Interneti kasutajatiipides						
Kasutussageduse erinevus keskmisest						
	Vähekasutaja	Eraeluliste teenuste kasutaja	Virtuaalses avalikkuses osaleja	Suhtleja	Mitmekülgne, interaktiivne võrgus olija	Mitmekülgne infokasutaja
Internet oisingsuunootoriteks	-0,84	-0,24	0,25	0,10	0,25	0,19
Internet foorumideks ja uudisrühmadeks	-0,72	-0,52	0,24	0,05	0,32	0,05
Internet kommentaaride lugemiseks	-0,73	-0,52	0,25	-0,20	0,30	-0,12
Internet kommentaaride kirjutamiseks	-0,52	-0,45	-0,02	-0,23	0,36	-0,22
Internet jututubadeks	-0,62	-0,44	-0,49	0,73	0,54	-0,48
Internet kiirteade vahetuseks (ICQ)	-0,51	-0,45	-0,23	0,21	0,26	-0,07
Internet onlinemängudeks	-0,41	-0,39	-0,20	0,22	0,32	-0,30
Internet ostudeks ja oksjonideks	-0,18	-0,14	-0,02	-0,15	0,29	-0,08
Internet pangatehinguteks	-0,37	0,22	-0,13	-0,47	0,22	0,56
Internet tuludeklaratsioonideks ja ametlikeks dokumentideks	-0,35	0,06	-0,35	-0,47	0,17	0,78
Internet töö otsimiseks	-0,48	0,25	-0,29	-0,30	0,42	-0,02
Internet eluasemeotsimiseks	-0,41	0,45	-0,33	-0,44	0,51	0,09
Internet reisinfoks	-0,59	0,19	-0,29	-0,41	0,18	0,09
Internet õigusalaseks infoks	-0,63	-0,14	-0,31	-0,53	-0,11	0,60
Internet erialaseks infoks	-0,65	0,05	-0,01	-0,34	0,01	0,82
Internet õpiinfoks	-0,75	-0,07	0,20	0,23	0,07	0,51
Internet majandusinfoks	-0,55	-0,06	-0,09	-0,31	0,08	0,88
Internet poliitiseks infoks	-0,44	-0,16	0,11	-0,21	0,20	0,54
Internet pere ja terviseinfoks	-0,49	0,08	-0,11	-0,17	0,07	0,23
Internet kohtamisteenusteks	-0,38	-0,06	-0,25	0,08	0,50	-0,28
Internet meelitsideks	-0,43	-0,29	-0,12	0,22	0,34	-0,11
Internet jututubades ja foorumides	-0,59	-0,45	-0,39	0,78	0,55	-0,40
Internet erootiikaks	-0,21	-0,12	-0,04	-0,06	0,39	-0,12
Internet muuks	-0,36	-0,34	0,13	-0,18	0,08	-0,46

Allikas: Meema (TÜ ajakirjanduse ja kommunikatsiooni osakond)

Lisa tabel 6.5. Interneti kasutajatiipide sotsiaaldemograafiline iseloomustus													
	Vähemasutaja		Eraeluliste teenuste kasutaja		Virtuaalses avalikkuses osaleja		Suhtleja		Mitmekülgne, interaktiivne võrgus olija		Mitmekülgne kasutaja		
	N	%	N	%	N	%	N	%	N	%	N	%	
<b>Sugu</b>													
Mees	53	48	27	36	62	62	45	46	50	63	38	43	
Naine	57	52	49	64	38	38	52	54	29	37	50	57	
<b>Ankeedi keel</b>													
Eesti	77	70	58	76	76	76	60	61	57	72	67	77	
Vene	33	30	19	24	24	24	38	39	22	28	20	23	
<b>Haridus</b>													
Alg. põhi	12	11	3	4	17	18	37	40	15	19	2	2	
Kesk	61	58	38	52	47	49	44	47	41	52	34	39	
Kõrg	32	31	32	44	32	33	12	13	22	28	51	59	
<b>Vanus</b>													
15–19	10	9	1	2	28	28	48	49	15	19	5	6	
20–29	13	12	29	38	25	25	26	26	38	48	22	25	
30–44	42	38	29	38	28	28	15	16	20	25	37	42	
45–54	27	25	12	16	12	12	7	7	4	5	17	20	
55–64	10	9	4	5	7	7	2	2	2	2	6	7	
65–74	8	8	1	1	0	0	0	0	0	0	0	0	
<b>Asutajatiip</b>													
Pealinn	31	28	31	40	43	43	36	37	32	40	31	35	
Suur linn	20	18	12	16	15	15	18	19	13	17	6	7	
Väikeлин	23	21	14	19	17	17	22	23	22	27	22	26	
Maa	36	32	19	25	26	26	21	21	12	15	28	32	
<b>Sissetulek pere liikme kohta</b>													
Kuni 1500	33	31	16	22	22	23	36	39	12	15	11	13	
1501–2500	27	26	21	29	21	22	23	26	17	22	13	15	
2501–4000	26	24	17	23	27	28	13	15	21	26	28	32	
4001–6000	15	14	13	18	19	20	14	15	16	20	16	19	
Üle 6000	5	5	6	8	7	7	5	6	13	17	19	22	

Allikas: Meema (TU) ajakirjanduse ja kommunikatsiooni osakond)

Tabel 6.6. Internetikasutuse üldtunnused kasutajatüüpides

Internetikasutuse sagedus töö ja koolis	Vähekasutaja		Eraeluliste teenuste kasutaja		Virtuaalses avalikkuses osaleja		Suhtleja		Mitmekülgne, interaktiivne võrgusõlija		Mitmekülgne infokasutaja	
	N	%	N	%	N	%	N	%	N	%	N	%
Mõni kord kuus või harvem	14	24	9	13	11	13	9	13	8	12		
Paar korda nädalas	19	33	15	23	25	29	35	47	17	26	10	13
Praktiliselt iga päev	25	43	41	63	49	57	30	40	42	62	70	87
<b>Internetikasutuse sagedus kodus</b>												
Mõni kord kuus või harvem	12	29	16	36	6	10	3	6			2	4
Paar korda nädalas	24	59	13	29	16	27	13	25	9	20	20	37
Praktiliselt iga päev	5	12	15	34	37	63	35	69	34	80	32	59
<b>Miljal hakkasite Interneti kasutama?</b>												
Sellel või eelmisel aastal	38	34	18	23	10	10	20	20	10	13	3	3
Paar-kolm aastat tagasi	56	51	40	53	54	54	60	61	36	46	37	42
Enam kui neli aastat tagasi	16	15	18	24	36	36	18	19	32	41	48	55
<b>Miljal hakkasite Interneti kasutama?</b>												
Sellel või eelmisel aastal	46	50	31	41	23	23	31	33	21	27	14	16
Paar-kolm aastat tagasi	33	36	23	31	40	40	38	41	29	37	34	39
Enam kui neli aastat tagasi	13	14	21	28	37	37	24	26	28	36	39	45
<b>Internetile kuluv aeg tööpäeval</b>												
Kuni 45 minutit	61	74	37	51	45	47	28	31	17	23	23	26
46–90 minutit	15	18	22	30	21	23	23	26	20	28	23	26
Poolteist kuni kolm tundi	3	4	7	9	16	16	25	28	14	20	22	25
Kolm tundi ja enam	3	4	7	10	13	14	12	14	20	28	19	22
<b>Internetile kuluv aeg puhkepäeval</b>												
Kuni 45 minutit	29	57	28	56	19	28	11	15	14	22	29	44
46–90 minutit	18	34	13	27	20	29	13	18	12	19	12	19
Poolteist kuni kolm tundi	3	5	6	11	15	22	18	25	20	33	18	28
Kolm tundi ja enam	2	4	3	6	15	21	31	42	16	26	6	9

Allikas: Meema (TÜ ajakirjanduse ja kommunikatsiooniosakond)

## MOBIILID, ARVUTID, INTERNETID: EESTI INFOÜHISKONNA KÜNNISEL

Pille Runnel, Pille Pruulmann-Vengerfeldt

Küsitluses *Mina. Maailm. Meedia* olid olulisel kohal küsimused uue meedia, s.o mobiiltelefonide, arvutite ja Interneti kasutuse kohta. Käesolev peatükk annab ülevaate erinevatest uue meediaga seotud tegevustest ning võrdleb uue meedia kasutajaid soo, vanuse, emakeele, elukoha, sissetuleku ja hariduse lõikes. Arvuti- ja internetikasutuse küsimuste analüüsimisel on oluline märkida, et suuremale osale küsimustest rakendati filtreid, mistõttu neile vastasid ainult arvutite ja Interneti kasutajad.

### 1. Mobiiltelefoni kasutamine

Lisatabel 9.1 annab ülevaate mobiiltelefoni kasutamisest, selle aktiivsusest ning seostest tavatelefoniga kasutamise erinevates rühmades. Mobiiltelefoni omas küsitluse läbiviimise ajal 76% meestest ja 67% naistest. Mobiili omajate hulk on väga selgelt muutuv vanuserühmiti. Kui 65–74-aastaste seas on mobiiltelefoni omanikke 27%, siis näiteks 15–19-aastastest on mobiili omajaid 80%, kõige enam on mobiiltelefoniomanikke aga 20–29-aastaste seas – tervelt 95%. Mobiiltelefonide omanike seas on selgelt seotud ka inimeste sissetulekuga, nii on mobiiltelefon 66%-l inimestest, kelle sissetulek on kuni 1500 krooni pereliikme kohta, samas kui sissetulekurühmas üle 6000 krooni pereliikme kohta on mobiiliomanike hulk 94%.

Vahed pealinna, suurte linnade ja maaelanike vahel ei ole väga märkimisväärsed, pisut eristub teistest vaid suurlinn, kus mobiiltelefon on 74%-l vastanuist, võrreldes näiteks 70%-ga maal. Mobiilide omanike või mitteomanike seas on seotud ka hariduslike erinevustega. Alg- või põhiharidusega vastajate seas on mobiiliomanikke 56%, keskhariidusega vastanuist on mobiiltelefon 73%-l ja kõrge- ma haridusega vastanuist 79%-l. Kahjuks ei võimalda uuring vaadelda, kas erinevused mobiil-

telefonide hankimises ja kasutuselevõtus on seotud ka mobiiltelefonile omistatud funktsioonide ning seega ka tähenduse muutumisega.

Huvitav on vaadata, milline on mobiiltelefoni kasutamise dünaamika ajas. Nii on varem alustajaid enam meeste kui naiste seas. Meestest on enam kui viis aastat tagasi mobiiltelefoni kasutama hakanud 16% ja neli-viis aastat tagasi 19%. Samas alustas naistest enam kui viis aastat tagasi 5% ja neli-viis aastat tagasi 12%. Kõige enam (30%) naisi on mobiili kasutama hakanud paar-kolm aastat tagasi. Vanuserühmiti on kõige enam varem alustajaid 30–44-aastaste seas (20% on alustanud varem kui viis aastat tagasi). 20–29-aastaste seas on kõige enam neid, kes on alustanud neli-viis aastat tagasi (33%), 45–54-aastastest on kõige enam (29%) alustanud paar-kolm aastat tagasi. Kuigi maal elavate inimeste hulgas on suurusjärgult sama palju kui pealinnaski neid, kes hakkasid mobiili kasutama enam kui viis aastat tagasi (13% pealinnas ja 10% maal), on maainimeste seas kõige enam neid, kes on mobiile kasutama hakanud paar-kolm aastat tagasi (29%). Sel perioodil on kõige enam liitujaid ka kõigis muudes piirkondades, mis tähendab, et toimus üldine hüpe ja mobiiltelefon muutus sel perioodil üldkasutatavaks.

Mobiiltelefonide varasem kasutuselevõtt on seotud rahaliste võimalustega. Varem kui viis aastat tagasi on mobiiltelefoni kasutusele võtnud 37% keskmisest suurema sissetulekuga inimestest, võrreldes sama perioodi 5% alustajatega alla 1500-kroonise sissetulekuga rühmas. Kõrge sissetulekurühma seas on kõige vähem ka neid, kes mobiili ei kasuta (8%), samas kui sissetulekurühmas 1500–2500 krooni ei kasuta mobiiltelefoni 38%.

Mobiiltelefoni kasutamine/mittekasutamine ja kasutamahakkamise aeg erineb ka haridusrühmade lõikes. Alg- või põhiharidusega inimestest ei kasuta mobiili 44%, samas kui kõrgharidusega

mittekasutajaid on vaid 22%. Kõrgharidusega kasutajad olid valdavalt ka varaseimad liitujad (19% enam kui viis aastat tagasi). Keskhariidusega inimestest on enam liitujaid olnud paar-kolm aastat tagasi. Alg- või põhiharidusega kasutajate seas on kõige enam liitujaid olnud viimastel aastatel (23% paar-kolm aastat tagasi, 20% sellel või eelmisel aastal).

Rühmiti varieerub ka mobiiltelefoni kasutusaktiivsus. Viimane ühendab endas nii sisetulevate ja väljaminevate kõnede hulka (päevas) kui ka SMS-ide saatmist ja vastuvõtmist (kuus).

Suur kasutusaktiivsus on olulisel määral seotud vastajate sisetulekutega. Väga aktiivset mobiilikasutust esineb kõige rohkem enam kui 6000-kroonise sisetulekuga inimeste seas (37% võrreldes 10%-ga alla 1500-kroonise sisetulekuga inimeste hulgas). Madalaima sisetulekuga rühmas on kõige enam märkimisväärset kasutusaktiivsus (22%).

Meeste ja naiste vaheline erinevus kasutusaktiivsuses ilmneb eelkõige väga suure mobiilikasutuse puhul. Väga suureks hindab aktiivsust 19% meestest ja 10% naistest, märkimisväärseks hindavad mobiilikasutuse aktiivsust enam-vähem võrdset nii mehed (29%) kui naised (27%). Väheaktiivne kasutus iseloomustab pisut enam naisi (15%) kui mehi (10%). Noored hindavad mobiilikasutuse aktiivsust pigem suureks (väga suur 26%-l ja suur 26%-l 15–19-aastastest). Eelkõige väga suur (26%), suur (25%) või märkimisväärne (39%) on mobiilikasutuse aktiivsus ka 20–29-aastastel. Pigem väheaktiivseks peavad oma mobiilikasutust 55–64-aastased (20%).

Elukohati mobiilikasutuse aktiivsus kuigi tugevalt ei eristu, hariduslike erinevuste lõikes võib eristada kõrgema haridusega mobiilikasutajaid, kelle seas esineb kõige vähem vähest kasutamisktiivsust (8%) ja kõige enam märkimisväärset kasutusaktiivsust (31%).

Mobiiltelefonide kasutuselevõtt, mis tähendas ühe sidekanali lisandumist, on mõnevõrra muutnud tavatelefonide kasutamise mustreid, kuid mõnd rühma iseloomustab see vähem kui teisi. Nii võib välja tuua soolised erinevused, kuna 33% meestest arvab, et nende tavatelefonide kasutamine on mobiiltelefoni tõttu vähenenud, samas kui seda kinnitab vaid 22% naisi.

Tavatelefonide kasutamisest on üldse loobunud pigem noored mobiilikasutajad (17% 15–19-aastastest ja 16% 20–29-aastastest). Tavatelefonide pole olnudki kõige enam just 20–29-aastastel (16%).

Kõige enam on tavatelefonide kasutamine tänu mobiiltelefonile kahanenud kõrgema sisetulekuga (52% enam kui 6000-kroonise sisetuleku juures ja 42% sisetulekurühmas 4001–6000 krooni) ja

kõrgharidusega (39%) mobiilikasutajail, aga ka kõige nooremas vanuserühmas (39%), teistest enam on see vähenenud ka keskhariidusega mobiilikasutajail (27%). Tavatelefonide kasutamise vähenemine mobiili kasutuselevõtu tõttu eristab pealinnas elavaid mobiilikasutajaid pisut mujal elavatest – 32%-l pealinlastest on kõned tavatelefoniga vähenenud.

## 2. Arvuti kasutamine

Küsitluse toimimise ajal kasutas Eestis arvutit 48% elanikkonnast. Joonis 9.1 annab ülevaate arvutikasutusest erinevate elanikerühmade lõikes.

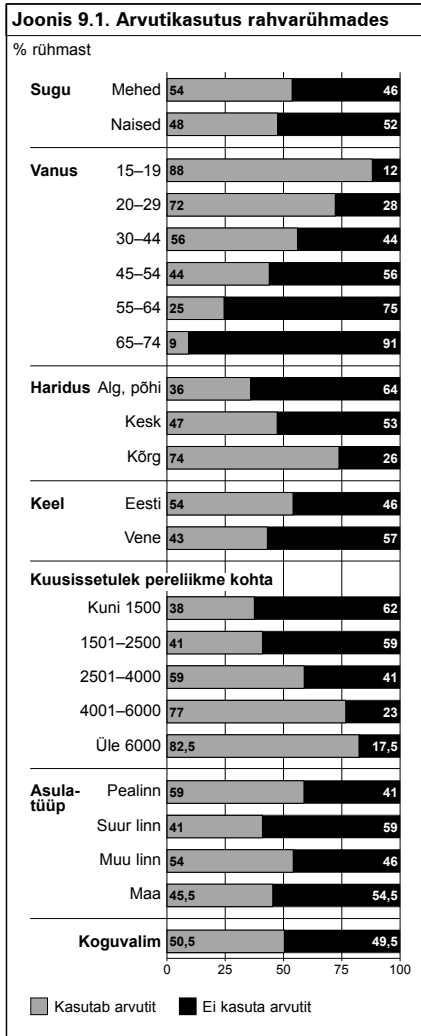
Olulisim erinevus on vanuserühmade lõikes, kus vanemate elanike seas on arvutikasutajaid vaid 9%, samas kui nooremate seas on vaid 12% mittekasutajaid. Selgelt muutub arvuti kasutamine või mittekasutamine haridusrühmade lõikes, kus alg- või põhiharidusega arvutikasutajaid on 36%, samas kui kõrgharidusega vastanutest kasutab arvutit mõnevõrra vähem (43%) kui eestikeelne elanikkond (54%). Samamoodi on arvutikasutus seotud sisetulekuga, olles märgatavalt kõrgem suurema sisetulekuga rühmades.

Selgitamaks arvuti mittekasutamise põhjuseid, küsiti arvutikasutajatelt, miks nad ei kasuta arvutit kodus (joonis 9.2). Põhjuseks toodi peamiselt arvuti olemasolu töö või koolis, seda, et arvuti on katki, ja arvuti liiga kõrget hinda. Samas ei anna selle küsimuse esitus selgust arvuti mittekasutamise põhjustest üldiselt. Muude põhjustena märgiti veel, et olemasolev arvuti on vana ja algeine ja sellega pole seotõttu midagi peale hakata.

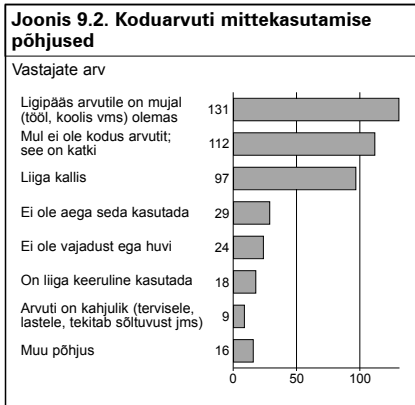
Tabel 9.1 annab ülevaate tegevustest, millega erinevad rahvastikurühmad eelistavad arvutit kasutada tegeleda. Tegevused on pingereastatud ja tabelis on toodud nende tegevuste koht iga rühma pingereas. Pingerida on koostatud sageduse alusel – mida sagedamini antud rühma esindajad märkisid end arvutit selleks otstarbeks kasutavat, seda kõrgemal kohal on tegevus pingereas. Tuleb märkida, et 65–74-aastaste seas ei ole ühtegi inimest, kes oleks harrastanud nende pingereas neljale viimasele kohale paigutatud tegevusi.

Arvuti roll info otsimise vahendina on pingeridades igal pool esimene. Suuremas osas rühmadest on e-mailide saatmine teisel kohal, kolmandana tuleb tekstitöötlus. Rohkem erinevusi on üldpingereas viimastele kohtadele jäänud mängimiste ja professionaalsete tegevuste osas.

Esimesed arvutikasutust jälgivad uuringud Eestis on tehtud BMF-i kaubamärgi all 1994. a, mil koduarvuti omajaid oli Eestis 3% elanikkonnast,



samas kui arvutitest väga huvitatuid oli 9% (BMF 1995). Uurimuse *Mina. Maailm. Meedia* korraldamise ajaks oli arvutikasutajaid 48% elanikest ja koduarvuteid 34%-l vastajatest (koduse tehnika olemasolu kohta loe lähemalt 8. peatükki). Arvuteid on kasutanud enam kui viis aastat 28% tänaastest arvutikasutajatest, mis on 13% kogu Eesti elanikkonnast. Ligi pool arvutikasutajatest ehk umbes 24% elanikkonnast on arvuteid kasutanud 2–5 aastat. Uusi kasutajad, kes on arvutit kasutanud vähem kui kaks aastat, on 22% arvutikasutajatest ehk 10% kogu elanikkonnast (lisatabel 9.2).



Enim kasutatakse arvutit tööl või koolis (lisatabel 9.2), kus praktiliselt iga päev kasutab arvutit 65% arvutikasutajatest. Olulised erinevused on arvutit tööl või koolis kasutavate vastajate seas vanuse, hariduse, emakeele ja sissetuleku lõikes. Vanuse puhul on oluline märkida, et alla 20-aastaste seas kasutab tööl või koolis arvutit igapäevaselt vaid 30%, 20–29-aastaste seas 63% ja muudes vanuserühmades kolmveerand või enam arvutikasutajatest.

Kodus kasutab arvutit praktiliselt iga päev 57% arvutikasutajatest. Kodukasutuses on trend vanuse lõikes täpselt vastupidine: mida nooremad on vastajad, seda rohkem on nende seas neid, kes kasutavad arvutit kodus iga päev. Avalikus Internetipunktis (AIP) või sõprade juures kasutatakse arvutit märkimisväärselt vähem. 23% arvutikasutajatest kasutab arvuteid AIP-s vähemalt paar korda nädalas, sõprade juures kasutab arvutit 20%.

Arvutikasutajate enesehinnang oma oskustelevel kajastub joonisel 9.3. Väga heaks hindab oma oskusi 9% kõigist arvutikasutajatest. Kõige enam hindavad oma oskusi väga heaks üle 6000-kroonise sissetulekuga inimesed (19%), kõrgema haridusega inimesed (13%), 20–29-aastased (12%) ja mehed (12%). Arvutikasutajaid, kes on oma oskusi olematuks hinnanud, on rohkem naiste (4%), 30–64-aastaste (5%), keskharidusega inimeste (5%), venekeelse elanikkonna (6%) ja alla 1500-kroonise sissetulekuga inimeste (5%) seas. Suurem osa inimesi igast rühmast hindab oma arvutikasutusoskusi rahuldavaks, erandiks on 15–19-aastased, kellest 44% hindab oma arvutikasutusoskusi heaks, ja pealinlased, kellest hindab oma arvutikasutusoskusi heaks 35%. Teine erand on 65–74-aastased, kellest suurem osa – 69% – hindab oma arvutikasutuse oskusi väheseks.

**Tabel 9.1. Arvutikasutuse tegevuste pingeriida rahvarühmad**

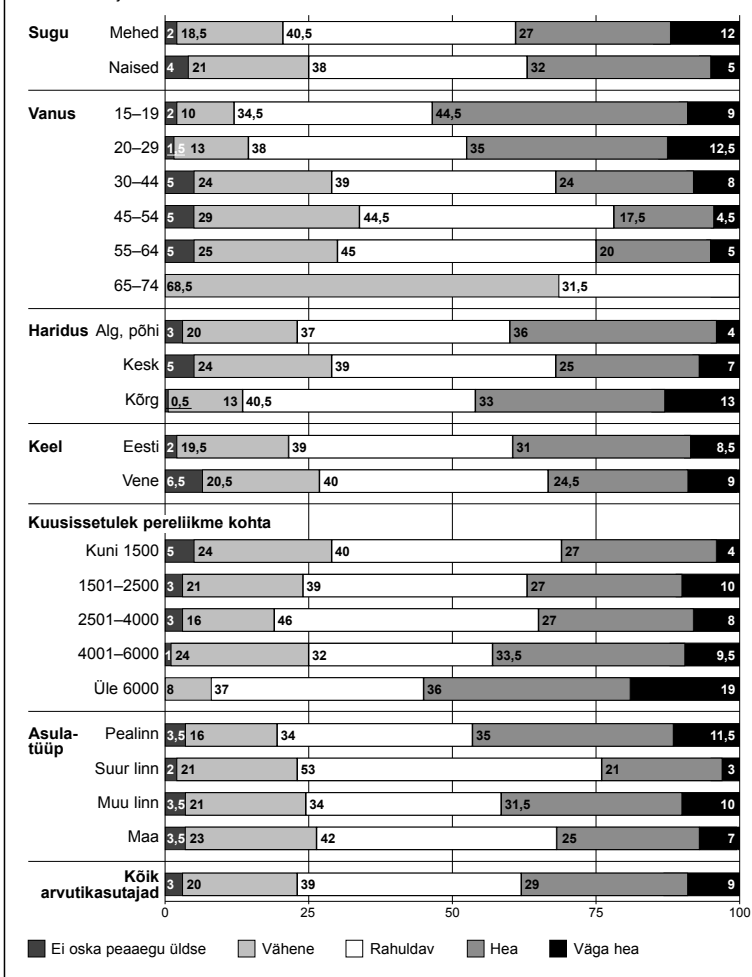
Kasutamise sageduse keskmiste alusel	Sugu		Vanus							Asulatüüp			Haridus		Kuuissetulek pere liikme kohta					
	M	N	15–19	20–29	30–44	45–54	55–64	65–74	Pea- linn	Suur linn	Muu linn	Maa	Alg- põhi	Kesk	Kõrg	Kuni 1500	1501– 2500	2501– 4000	4001– 6000	Üle 6000
1. Info otsimiseks	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.
2. E-mailide saatmiseks	2.	2.	2.	2.	2.	2.	4.	4.	2.	2.	2.	2.	2.	2.	2.	2.	2.	2.	2.	2.
3. Tekstitöötluseks	4.	3.	4.	3.	3.	3.	2.	2.	3.	4.	3.	3.	5.	4.	3.	3.	3.	3.	3.	4.
4. Ajalehtede, ajakirjade lugemiseks	3.	4.	5.	3.	4.	4.	3.	3.	4.	3.	4.	4.	4.	3.	5.	4.	4.	4.	3.	4.
5. Tabelite koostamiseks	5.	5.	7.	5.	5.	5.	5.	5.	5.	5.	5.	5.	7.	5.	4.	5.	5.	5.	5.	5.
6. Filmide vaatamiseks, muusika kuulamiseks	6.	6.	4.	6.	7.	8.	12.	–	6.	6.	6.	7.	3.	6.	8.	6.	6.	6.	6.	8.
7. Muude mängude mängimiseks	7.	8.	9.	8.	8.	8.	11.	11.	9.	7.	7.	6.	6.	7.	9.	7.	7.	8.	7.	9.
8. Millekski muuks	9.	7.	6.	7.	6.	9.	10.	10.	7.	8.	13.	8.	11.	8.	6.	8.	9.	7.	9.	6.
9. Pildi/fototöötluseks	8.	9.	8.	9.	9.	7.	8.	8.	8.	9.	8.	9.	10.	9.	7.	9.	8.	9.	8.	7.
10. Strategiamängude mängimiseks	10.	11.	10.	10.	11.	12.	13.	–	11.	10.	10.	10.	8.	10.	14.	10.	10.	10.	11.	12.
11. Male, kabe, bridži jms mängimiseks	12.	12.	13.	12.	10.	10.	9.	9.	13.	11.	10.	11.	12.	12.	11.	11.	11.	12.	12.	13.
12. Rolli- ja fantaasiamängude mängimiseks	11.	14.	11.	11.	13.	14.	14.	–	12.	12.	12.	12.	9.	11.	15.	13.	13.	11.	10.	14.
13. Kujundamiseks, kujundamiseks	13.	10.	12.	13.	12.	11.	6.	6.	10.	13.	11.	14.	13.	13.	10.	12.	12.	13.	13.	10.
14. Programmeerimiseks	14.	15.	14.	14.	14.	15.	15.	–	15.	15.	14.	13.	14.	14.	13.	15.	14.	15.	14.	11.
15. Kodulehekülgede tegemiseks	15.	13.	15.	15.	15.	13.	7.	7.	14.	14.	15.	15.	15.	15.	12.	14.	15.	14.	15.	15.

Heali taulaiga on esile tõstetud üldise pingereaaga võrreldes kõrgem koht, paksu kirjaga – madalam koht.



**Joonis 9.3. Arvutikasutusoskuste enesehinnang rahvarühmades**

% arvutikasutajatest antud rühmas



Arvutikasutusest rääkides on huvitav püüda leida, kas on olemas mingit ühtset arvutikasutaja tüüpi. Võib väita, et olukorras, kus ligi pool elanikkonnast on arvutist endale midagi leidnud, on ka kasutajatüüpe võimalik leida rohkem kui üks. Kasutades faktoranalüüsi peatelgede meetodit koos varimaks pööramisega, saame arvutiga tehtavaid tegevusi kirjeldada nelja põhilise faktori abil (tabel 9.2): mängude faktor, erialase töö faktor, Interneti kasutamise faktor ning tekstitöötluste ja tabelarvutuse faktor. Erialase töö faktor tähendab seda, et arvutit kasutatakse põhilise töövahendina kutse-

töös, samas kui tekstide ja tabelite faktorisse koonduvad tegevused, mis on abistavat laadi ning kus arvuti on vaid üks võimalikest töövahenditest.

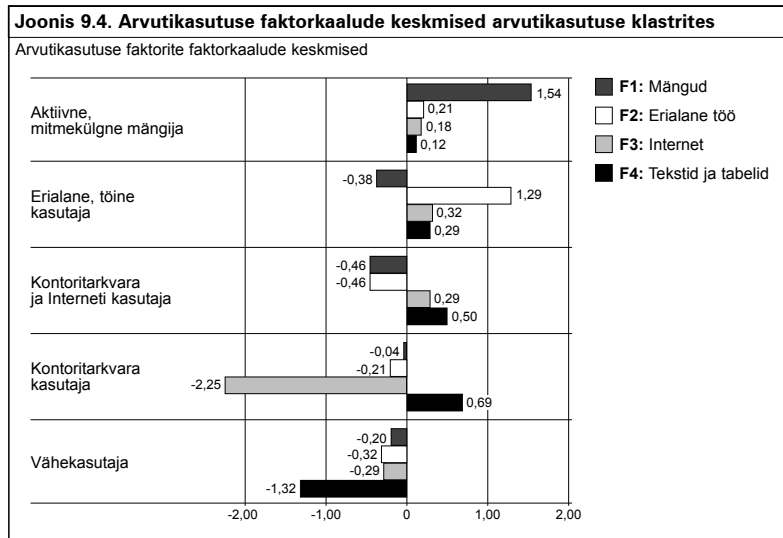
Faktorite alusel moodustasime omakorda kaheastmelise klasteranalüüsi meetodil viis klasterit (joonis 9.4). Viis arvutikasutaja tüüpi on: vähekasutaja, kontoritarkvara kasutaja, kontoritarkvara ja Interneti kasutaja, erialane, tööine kasutaja ning aktiivne, mitmekülgne mängija. Joonis 9.5 annab ülevaate arvutikasutajate tüüpide jaotumisest erinevate rühmade seas.

**Tabel 9.2. Arvutikasutuse faktoranalüüsi lahend**

Peateltgede meetod, varimaks pööramine

Kui sageli kasutate arvutit järgmisteks tegevusteks?	F1: Mängud	F2: Erialane töö	F3: Internet	F4: Tekstid ja tabelid
Rolli- ja fantaasiamängude mängimine	<b>0,83</b>	0,18		
Strateegiamängude mängimine	<b>0,79</b>	0,21		
Muude mängude mängimine	<b>0,69</b>			
Male, kabe, bridži jms mängimine	<b>0,63</b>	0,16		
Filmide vaatamine, muusika kuulamine	<b>0,52</b>	0,28	0,26	
Kodulehekülgede tegemine	0,16	<b>0,79</b>		
Küljendamise, kujundamine	0,11	<b>0,64</b>		0,23
Programmeerimine	0,23	<b>0,60</b>	0,13	0,12
Pildi/fototöötlus	0,18	<b>0,46</b>	0,24	0,37
Info otsimine			<b>0,81</b>	0,18
Ajalehtede, ajakirjade lugemine	0,12		<b>0,67</b>	
E-mailide saatmine		0,14	<b>0,58</b>	0,33
Tekstitöötlus		0,14	0,22	<b>0,86</b>
Tabelite koostamine		0,18	0,22	<b>0,75</b>

**Paksu kirjaga** on esile tõstetud suurim faktorlaadung vastava tunnuse osas.

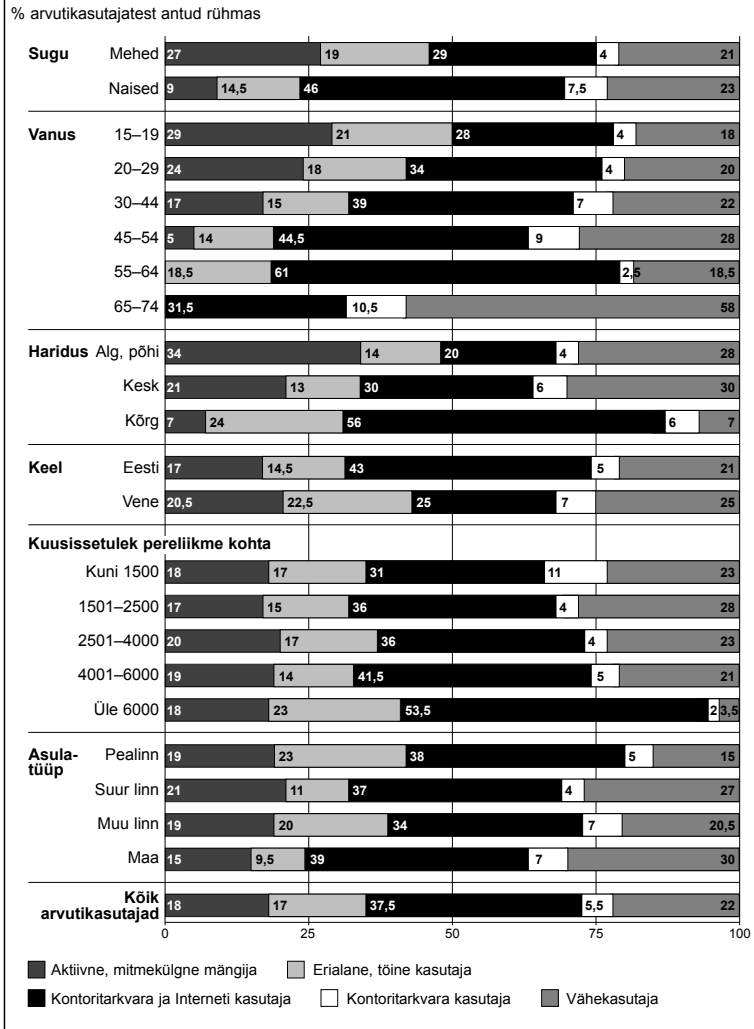


Arvutikasutajate tüüpidest domineerib kontoritarkvara ja Interneti kasutaja (38% arvutikasutajaist), sellele järgnevad vähekasutaja (22% arvutikasutajaist), need, kes kasutavad arvutit peamiselt erialaseks tööks (erialane, tööine kasutaja - 17%), aktiivne, mitmekülgne mängija (13%), kõige vähem on esindatud kontoritarkvara kasutaja (6%).

Arvutimängude mängimise osatähtsus kahele järkjärgult muude tegevuste ees nii hariduse lisandudes kui vanuse kasvades. Kui aktiivse ka-

sutuse ja arvutimängude mängimise osatähtsus 15-19-aastaste tegevuses on võrdlemisi suur (24% kasutajatest), siis vanema põlvkonna arvutikasutus on väheaktiivne ja nad ei mängi arvutimänge pea üldse. Aktiivne kasutus ja arvutimängude mängimine iseloomustab pigem mehi (27%) kui naisi (9%). Kontoritarkvaraga töötamine domineerib muude tegevuste ees võrdlemisi vähe kõigis rühmades, kuid teistest pisut enam on see esindatud 65-74-aastastel arvutikasutajatel.

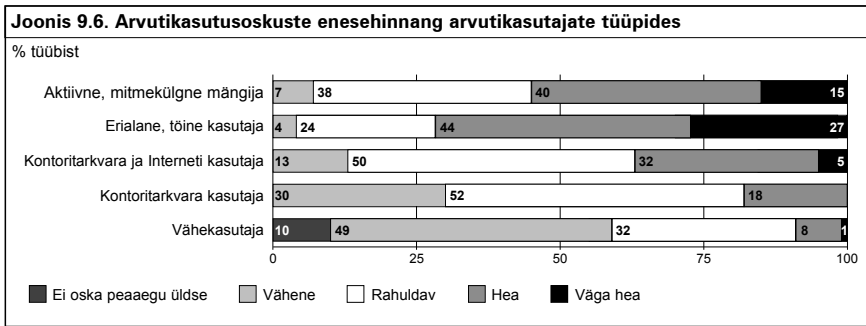
**Joonis 9.5. Arvutikasutajate tüüpide osakaal rahvarühmades**



Erialast, töist kasutust iseloomustab kasutajate kõrgem haridus, kõrgem sissetulek, samuti kasutavad mehed arvutit erialaseks tööks pisut enam kui naised. Vähen arvutikasutus domineerib kõige enam 65–74-aastaste seas (57%), ka on vähekasutaja pigem maainimene (30% maal elavatest arvutikasutajatest). Vähekasutajate hulk langeb tugevalt kõrgema haridusega arvutikasutajate seas (7%). Kõige vähem esineb vähest arvutikasutust kõrgema sissetulekuga inimeste hulgas (4%).

Kontoritarkvara ja Internetiga töötamine domineerib tegevustest kõige enam 55–64-aastaste (60% kasutajatest) ja kõrgema haridusega arvutikasutajate seas (56%). Kõige vähem on kontoritarkvara ja Internetiga töötaja esindatud alg- või põhiharidusega arvutikasutajate seas (20%).

Kui vaadata arvutikasutajate tüüpide seoseid kasutajate hinnangutega oma arvutikasutusoskustele (joonis 9.6), selgub, et väga heaks (27%) või heaks (44%) peab oma oskusi esmajoones erialane, tõine kasutaja. Kõrge hinnang oma oskustele



domineerib ka aktiivse arvutikasutaja ja mängija puhul – 15% selle tüübi esindajaist peab oma oskusi väga heaks ja 40% heaks. Kontoritarkvara ja Internetiga töötaja hindab oma oskusi valdavalt heaks (32%) või rahuldavaks (50%), kontoritarkvaraga töötaja aga peamiselt rahuldavaks (52%). Kõige kriitilisemalt hindab oma oskusi vähekasutaja – 49% peab oma oskusi väheseks ja 32% rahuldavaks.

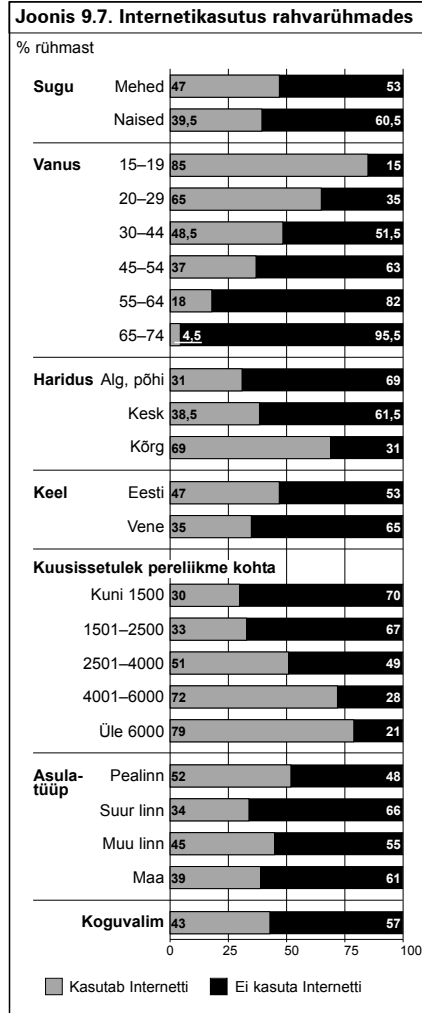
### 3. Interneti kasutamine

Joonis 9.7 annab üldiseloomustuse internetikasutusest erinevates sotsiaal-demograafilistes rühmades. Küsitluse ajal kasutas Interneti 43% elanikkonnast, seejuures 47% meestest ja 40% naistest. Interneti kasutamine on kõige tugevamalt varieeruv vanuse- ja sissetulekurühmiti, vähenedes märgatavalt vanemates eagruppides ja suurendes vastavalt suurema sissetulekuga rühmades.

Interneti kasutamine või mittekasutamine iseloomustab hästi ka erineva haridustasemega rühmi, seejuures kasutab Interneti 31% alg- või põhiharidusega elanikest ja tervelt 69% kõrgharidusega vanuist. Internetikasutus sõltub mingil määral ka emakeelest, esinedes vastavalt 47% eesti-keelsete ja 35% venekeelsete vastajate hulgas. Vahe internetikasutajate hulgas tuleb ilmsiks ka maa- ja linnaelanikke võrreldes: pealinnas kasutab Interneti 52%, maal vaid 39% elanikkonnast.

#### 3.1. Interneti kasutamise aspektid sotsiaal-demograafilistes rühmades

Vaadeldes variatsioone Interneti kasutamahakkamise ajas (lisatabel 9.4), on näha, et kõige selgemini eristavateks sotsiaal-demograafilisteks faktoriteks on vastajate vanus ning sissetulek. Nii on 65–74-aastastest kasutajatest enamik hakanud Interneti kasutama kas alles äsja või paar-kolm aastat



<b>Tabel 9.3. Internetis pakutavate teenuste faktoranalüüsi lahend</b>					
Peatelgede meetod, varimaks pööramine					
<b>Internet ...</b>	<b>F1:</b> Üldine info	<b>F2:</b> Suhtlus	<b>F3:</b> Portaalid	<b>F4:</b> Isiklik utilitaarne info	<b>F5:</b> Ostud ja erootika
... majandusinfoks	<b>0,70</b>		0,18	0,11	
... õiguslaseks infoks	<b>0,69</b>			0,13	
... erialaseks infoks	<b>0,67</b>		0,21	0,16	-0,13
... tuludeklaratsioonideks ja ametlikeks dokumentideks	<b>0,64</b>				0,22
... pangatehinguteks	<b>0,56</b>			0,14	0,25
... poliitiliseks infoks	<b>0,54</b>		0,31	0,14	
... õpiinfoks	<b>0,41</b>	0,22	0,35	0,14	-0,30
... pere- ja terviseinfoks	<b>0,37</b>	0,13	0,19	0,21	
... jututubadeks	-0,13	<b>0,85</b>	0,10		
... jututubades ja foorumides osalemiseks		<b>0,83</b>	0,16		
... online mängudeks		<b>0,47</b>	0,19		0,21
... kohtamisteenusteks		<b>0,42</b>	0,13	0,30	0,14
... meililistideks	0,13	<b>0,41</b>	0,29	0,13	
... kiirteadete vahetuseks	0,15	<b>0,40</b>	0,28		
... kommentaaride lugemiseks	0,11	0,17	<b>0,66</b>	0,11	0,16
... foorumideks ja uudisrühmadeks	0,18	0,27	<b>0,60</b>		
... kommentaaride kirjutamiseks		0,27	<b>0,50</b>		0,26
... otsingumootriteks	0,26	0,25	<b>0,48</b>		
... eluaseme otsimiseks	0,28			<b>0,64</b>	0,11
... töö otsimiseks	0,20	0,12	0,13	<b>0,49</b>	
... reisiinfoks	0,39			<b>0,46</b>	
... ostudeks ja oksjoniteks	0,16	0,12	0,12		<b>0,38</b>
... erootikaks		0,23	0,13	0,16	<b>0,32</b>

**Paksu kirjaga** on esile tõstetud suurim faktorlaadung vastava tunnuse osas.

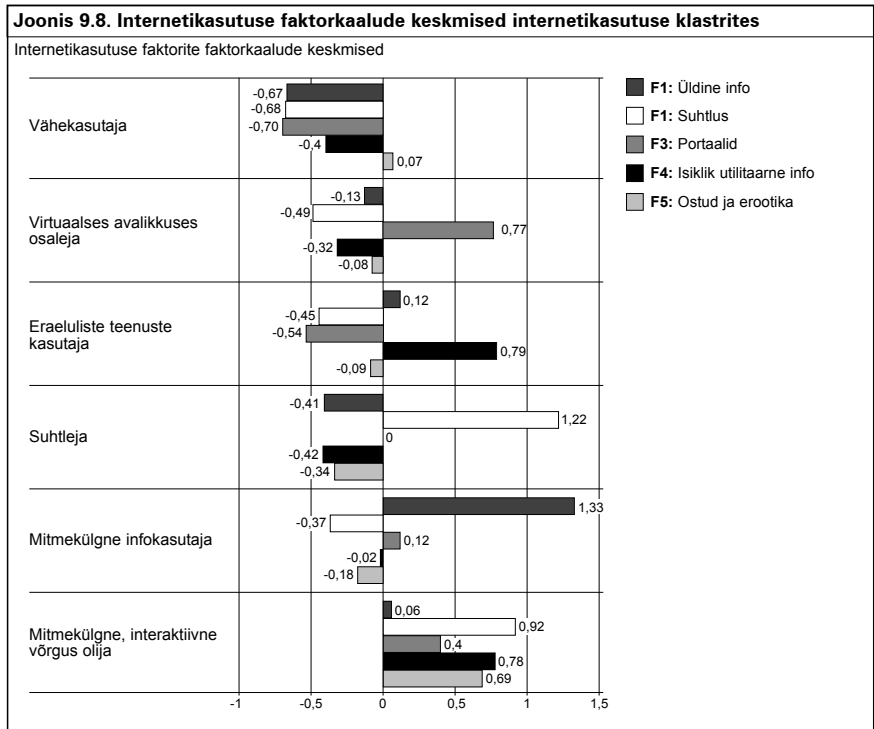
tagasi, mil Interneti kasutajakond hakkas lähemana poolele elanikkonnast. Peaaegu pool noorimasse vanuserühma kuulujaist on Interneti kasutama hakanud kaks-kolm aastat tagasi (49%). Kui võrrelda kõige suuremat ja kõige väiksemat sissetulekurühma, selgub, et ligi pool (48%) neist, kelle sissetulek on üle 6000 krooni, on Interneti kasutama hakanud enam kui neli aastat tagasi, nendega samal ajal alustas aga vaid 9% nendest, kelle sissetulekud ulatuvad kuni 1500 kroonini kuus. Viimastest enamik (43%) on kasutajatega liitunud küsitlusega samal või sellele eelneval aastal. Liitumine on olnud erinev ka keelerühmiti. Enam kui neli aastat tagasi on Interneti kasutama hakanud 33% eestikeelsetest ja 18% venekeelsetest vastajatest. Enamik venekeelseid kasutajaid (43%) on hakanud Interneti kasutama hiljuti.

Valdav enamik kasutab Interneti nii töö- kui puhkepäeviti pigem vähe (kuni 45 minutit) kui palju. Teistest erineb vaid 15–19-aastaste rühm, kellest kasutab puhkepäeviti Interneti enam kui 3 tundi 31% kasutajaist. Internetile kuluv aeg ise-

loomustab ka sissetulekurühmi – nii töö- kui puhkepäeviti kahaneb Interneti kasutamisele kuluv aeg kõige lineaarsemalt just madalama sissetulekuga rühmades.

Interneti kasutatakse pigem iga päev. Kõige paremini iseloomustab see kõrgema haridusega kasutajaid, kellest iga päev kasutab Interneti tööl või koolis 77%, paar korda nädalas 15% ja mõni kord kuus või harvemini vaid 7%. Sarnane trend iseloomustab ka kõige suurema sissetulekuga kasutajaid. Alla 1500-kroonise sissetulekuga rühmast kasutab suur osa (44%) Interneti tööl või koolis aga vaid paar korda nädalas.

Kodukasutajatest on kasutussageduse poolest kõige aktiivsemad 15–19-aastased, kellest 69% kasutab Interneti kodus praktiliselt iga päev, 25% paar korda nädalas ning vaid 7% mõni kord kuus või harvemini. Neile sarnase kasutusaktiivsuse trendiga on ka teistest jõukamad inimesed sissetulekuga üle 6000 krooni kuus. 15–19-aastased kasutavad teistest kõige enam Interneti ka sõprade või sugulaste juures (30% praktiliselt iga päev).



Internet on vähemal või suuremal määral oluline isikliku kommunikatsiooni kanalina. Aga kuidas toimib Internet seejuures uute tutvuste ja kontaktide loomise kohana? Internetikasutust iseloomustavast lisatabelist 9.4 selgub, et uute inimestega tutvuvad pigem noored (78% 15–19-aastastest ja 51% 20–29-aastastest). Enam kui pool neist on Internetis kohatud uute tutvutega ka vahetult kokku saanud.

Lisatabel 9.4 võimaldab pisut iseloomustada ka Interneti olulisust erinevate rühmade lõikes avaliku kommunikatsiooni kanalina, asutustest ja institutsioonidest teabe küsimisel, poliitikute ja ametiasutustega suhtlemisel ning tele- või raadiosaatesse meilide saatmisel. Info- ja teabepäringuid on teinud pisut enam mehed (41%) kui naised (26%). Kõige enam iseloomustab päringute tegemine aga erinevaid sissetulekurühmi. Suurematesse sissetulekurühmadesse kuuluvad teevad päringuid enam (42% sissetulekuga 4001–6000 krooni ja 60% sissetulekuga üle 6000 krooni) kui väiksemate sissetulekutega internetikasutajad (sissetulekuga kuni 1500 krooni 27%). Tele- ja raadiosaatesse meilimine on seotud eelkõige vastaja vanusega. Nii on 15–19-aastastest e-maile saatnud

34%, samas kui 30–44-aastastest on seda teinud vaid 10%, 45–54-aastastest aga ainult 3%.

Oma isiklikku veebilehte omavad teistest pisut enam suurimasse sissetulekurühma kuuluvad, kellest 24%-l on oma kodulehekülg. Samuti iseloomustab kodulehte omamist vanus: oma veebileht on 19%-l 15–19-aastastest, 9%-l 45–54-aastastest ning mõnevõrra üldtendentsist erinevalt 20%-l 55–64-aastastest internetikasutajatest.

Interneti kasutamise viisid varieeruvad üsna suures ulatuses, kuna erinevate kasutajate jaoks võib Internet olla väga erinevas funktsioonis. Tabelis 9.3 esitatud 23 tunnuse faktoranalüüs aitab iseloomustada seda, kui tihti inimesed kasutavad loetletud internetiteenuseid. Vastajatele anti oma kasutuspraktika iseloomustamiseks kolm valikuvõimalust: a) *sagedi*, b) *mõnikord* ja c) *mitte kunagi*. Faktoranalüüsis eristasime viis faktorit (üldine informatsioon, suhtlus, portaaliid, isiklik utiliitaarne laadi informatsioon ja ostud-erootika). Seejärel moodustasime faktorite põhjal kahesammulise klasteranalüüsi meetodil kuus klastrit (vt joonis 9.8).

<b>Tabel 9.4. Internetikasutajate tüüpide sotsiaal-demograafiline koosseis</b>						
% tüübist; p < 0,01						
	Mitmekülgne, interaktiivne võrgusolija	Mitmekülgne infokasutaja	Suhtleja	Eraeluliste teenuste kasutaja	Virtuaalses avalikkuses osaleja	Vähekasutaja
<b>Sugu</b>						
Mehed	64	43	46	36	62	48
Naised	37	57	54	64	38	52
<b>Vanus</b>						
15–19	19	6	49	2	28	9
20–29	48	25	26	38	25	12
30–44	25	42	16	38	28	38
45–54	56	20	7	16	12	25
55–64	3	7	2	5	7	9
65–74	0	0	0	1	0	8
<b>Keel</b>						
Eesti	72	77	61	76	76	70
Vene	28	23	39	24	24	30
<b>Koguvaim</b>	14	16	18	14	18	20

### 3.2. Interneti kasutamise praktikate erinevused

Joonis 9.8 annab ülevaate moodustunud klastritest, mis võimaldavad kirjeldada erinevaid Interneti kasutamise praktikaid. Vähekasutaja kasutab kõiki loetletud teenuseid võrdlemisi vähesel määral. Virtuaalses avalikkuses osaleja kasutab Interneti teistest enam portaalide, foorumide ja uudisgruppide lugemiseks ja sinna kommentaaride kirjutamiseks. Ta kasutab teistest sagedamini ka ot-singumootoreid. Eraeluliste teenuste kasutaja kasutab Interneti aktiivselt töö- ja reisiinfo otsimiseks ning eluasemega seotud infoks. Suhtleja on väga aktiivne jututubade, meililistide, kiirsõnumivahetuse (MSN, ICQ jms) kasutaja, ta täidab *online*-vorme, kasutab kohtamisteenuseid ja mängib mänge. Mitmekülgset infokasutajat iseloomustab informatsioonikeskne internetikasutus. Ta kasutab Interneti majandusliku, rahandusliku, õigusliku ja poliitilise informatsiooni otsimiseks ning õppimise ja erialase tööga seotud infoks. Mitmekülgne, interaktiivne võrgusolija kasutab Interneti väga palju kõigeks, talle on vähem oluline vaid infootsinguline kasutus.

Tabel 9.4 iseloomustab internetikasutajate tüüpe sotsiaal-demograafiliselt. Tabelist on võimalik näha, et kaks kõige väiksemat rühma on eraeluliste teenuste kasutaja ja mitmekülgne, interaktiivne võrgusolija, neist vaid pisut enam on vähekasutajaid. Samuti selgub, et naiste internetikasutus on vähem orienteeritud osalusele ja interaktiivsusele ning mõnevõrra enam orienteeritud eraeluliste teenuste kasutamisele.

Kasutuspraktikaid on võimalik eristada ka vanuse alusel. Enamik suhtlejaid on 15–19-aastased. 20–29-aastaste seas on palju mitmekülgseid, interaktiivseid võrgusolijaid. Vanemad inimesed moodustavad suhteliselt suurema osa vähekasutajate ja eraeluliste teenuste kasutajate hulgas. Erinevused rahvuste tasandil ei ole kuigi suured, välja võib tuua peamiselt selle, et eestikeelsed vastajad on pigem infootsingulise kasutusega ja venekeelsed enam kommunikatsioonile orienteeritud. Täiendava ülevaate kasutuspraktikate ja sotsiaal-demograafiliste tunnuste seostest annab ka internetikasutuse üldisi tendentsi iseloomustav lisatabel 9.4.

Lisatabel 9.5 kirjeldab internetikasutuspraktikate seoseid Interneti kasutamiseks kuluva aja, kommunikatiivsete harjumuste, teabepäringute tegemise ja ametiasutustega suhtlemisega. Selgub, et kõige varieeruvama ajakasutusega on mitmekülgsed, interaktiivsed võrgusolijad ning mitmekülgsed infokasutajad – seda nii töö- kui puhkepäeviti. Vähekasutajate enamik – tööpäeviti 74% ja puhkepäeviti 57% – kasutab Interneti kuni 45 minutit.

Teistest märgatavamalt enam on Internetis uute inimestega tutvunud mitmekülgsed, interaktiivsed võrgusolijad (73%) ja suhtlejad (71%), kellest enam kui pool on nende inimestega ka vahetult kokku saanud. Kuigi eraeluliste teenuste kasutajatest on uute inimestega tutvunud vaid 21%, on neist vahetult nendega ka kohtunud 76%. Veelgi iseloomulikum on see tendents vähekasutajatele, kellest vaid 4% on tutvunud Interneti vahendusel uute inimestega, neist 74% on aga nendega ka

**Tabel 9.6. Kodune internetiühendus internetikasutajate tüüpides**

% tüübist; p < 0,01

Kui Teil on kodus Internetiühendus, siis kas see on ...	Mitmekülgne, interaktiivne võrgusolija	Mitmekülgne info-kasutaja	Suhtleja	Eraeluliste teenuste kasutaja	Virtuaalses avalikkuses osaleja	Vähekasutaja	Koguvalim
... püsiühendus	42	33	44	29	39	18	34
... sissehelistamisega ühendus	14	25	7	24	18	20	18
Vastamata	44	41	49	47	44	62	49

**Tabel 9.7. Olulisushinnangud erinevatele arvamuse avaldamise ja suhtluskanalitele (internetikasutajate tüüpides)**

Keskmiised 5-pallisel skaalal

	Mitmekülgne, interaktiivne võrgusolija	Mitmekülgne info-kasutaja	Suhtleja	Eraeluliste teenuste kasutaja	Virtuaalses avalikkuses osaleja	Vähekasutaja
<b>Kui olulised on inimeste arvamuse väljendamiseks Teile meelest järgmised kanalid?</b>						
Lugejakirjad*	3,19	3,60	2,97	3,52	3,16	3,28
Foorumid ja küsitlused Internetis	3,46	3,42	3,45	3,10	3,29	2,98
Avaliku arvamuse uuringud	3,90	3,79	3,74	3,48	3,66	3,72
Telesaates esinemine	3,53	3,65	3,40	3,49	3,57	3,29
Telesaatesse helistamine	3,03	3,01	3,23	2,96	2,96	2,84
Raadios esinemine	3,24	3,44	3,21	3,19	3,19	3,19
Raadiosaatesse helistamine	2,98	2,89	3,25	2,98	2,88	2,85
Meiliistid	3,05	2,87	3,00	2,76	2,76	2,87
Kommentaariid ja vastukajad portaalides ja online-väljaannetes*	3,40	3,06	3,29	2,92	3,29	3,03
<b>Kui olulised on Teile teiste inimestega suhtlemisel järgmised kanalid?</b>						
Isiklik vahetu suhtlemine	4,65	4,87	4,68	4,89	4,83	4,77
Lauatelefon	3,51	3,88	3,71	3,98	3,64	4,07
Mobiiltelefoniga helistamine	4,10	4,07	3,99	4,10	3,86	3,96
SMS-sõnumite vahetamine*	3,49	3,17	3,48	3,15	3,08	3,04
Kirjad ja postkaardid	3,10	2,98	3,01	3,17	3,10	3,42
E-mail**	4,11	4,16	3,78	3,68	4,02	3,46
Kiirteadete vahetus*	3,10	3,01	3,51	2,57	2,89	2,68
Jututoad**	3,24	1,97	3,49	2,07	2,45	2,15
** p < 0,01; * p < 0,05						

vahetult kohtunud. Võib oletada, et see viitab kasutajatüüpide erinevat laadi *online*-kontaktidele (eraelulistele ja töistele), kuid meie uuring sellele küsimusele vastust ei anna.

Vähekasutajatest kõige väiksem osa on hakanud Interneti kasutama enam kui 4 aastat tagasi (14%), enamik neist on alustanud sellel või eelmisel aastal (50%). Seevastu mitmekülgsetest info-kasutajatest suurem osa on alustanud enam kui neli aastat tagasi (45%). Siit tekib küsimus, millele peavad vastuse andma edasised uuringud – kui-võrd muutuv on internetikasutamine ajas, kas näi-

teks kasutuskogemuse kasvades hakkab üht või teist kasutajat iseloomustama mõni teine kasutajatüüp.

Tabel 9.6 võrdleb erinevate internetikasutajate koduseid ühenduse võimalusi. Kuna küsimus oli esitatud filtriga (üksnes koduse internetiühendus omajatele), siis võib vastamata protsente tõlgendada kui seda, et vastajal kodus võrguühendust ei ole. On näha, et internetikasutaja tüüp ja koduse võrguühenduse laad on omavahel seotud, nii on üldiselt pidevamat laadi internetikasutajate hulgas (nt interaktiivne võrgusolemine ja suhtlemine) ka



rohkem püsiühenduse kasutajaid. Samas need, kes kasutavad Interneti pigem infoallikana, saavad seda vajadust rahuldada ka sissehelistamisega ühenduse teel. Selgelt tuleb ka välja, et vähekasutajatel on ka teistest märkimisväärselt väiksem võimalus kodus Interneti kasutada.

Tabel 9.7 annab ülevaate internetikasutajate tüüpide suhtumisest arvumuse avaldamise ja suhtluskanalitesse, mille olulisust oli küsimustikus võimalik hinnata 5-pallisel skaalal. Tabelis on toodud olulisushinnangute keskmised. Näeme, et vähekasutajate hinnangud on mitmetel juhtudel tagasihoidlikumad kui teistel kasutajatüüpidel, näiteks hindavad nad teistest madalamalt arvumuse avaldamise vahendina telesaadetesse helistamist, foorumeid ja küsitlusi Internetis. Mitmekülgsed, interaktiivsed võrgusolijad hindavad teistest enam suhtlemiskanalina e-maili. Mitmekülgsed infokasutajad hindavad arvumuse avaldamise vahendina teistest kõrgemalt lugejakirju (keskmine 3,6) ja pisut kõrgemalt raadios esinemist.

Suhtlejad eristavad teistest rühmadest hinnangud suhtluskanalitele. Nad hindavad teistest oluliselt kõrgemalt nii kiirteadete vahetust (keskmine 3,6) kui ka jututubasid (keskmine 3,5), teistest madalamalt hindavad nad arvumuse avaldamise vahendina lugejakirju (keskmine 3,0). Võib öelda, et nad eelistavad isiklikule suhtlemisele suunatud

kanaleid avalikkusega suhtlemise kanaleile (samas hindavad nad avaliku arvumuse avaldamise kanalina teistega sarnaselt suhteliselt kõrgelt avaliku arvumuse küsitlusi, keskmine 3,7).

Virtuaalses avalikkuses osaleja hindab suhtluskanalina teistest suhteliselt kõrgemalt e-maili (keskmine 4,0), seejuures hindab ta teistest märkimisväärselt madalamalt kiirteadete vahetust (keskmine 2,9) ja jututubades suhtlemist (keskmine 2,5). Sarnane suhe nendes suhtluskanalitesse iseloomustab ka eraeluliste teenuste kasutajat.

Tulemused viitavad sellele, et kasutajatüüpidel on erinevad kanalid seotud erinevate funktsioonidega. Selles vallas võimaldavad detailsemat arusaama ning aitavad seoseid lahti mõtestada edasised, kvalitatiivsed uuringud.

#### 4. Internetiga seotud hoiakud

Tabelis 9.8 esitatud 13 väite faktoranalüüs iseloomustab Internetiga seotud hoiakuid. Moodustunud maatriksis eristasime viis faktorit (oht, demokraatia ja kontroll, võimalused, moraalne kvaliteet ning hirm). Nende hoiakute esindatust erinevates rahvarühmades (keskmiste faktorkaalude alusel) kirjeldab tabel 9.9.

Tabelist 9.9 näeme, et ohu faktor seostub kõige vähem 15–19-aastastega, kasvades järgmistes

<b>Tabel 9.8. Internetiga seotud hoiakute faktormaatris</b>					
Peatelgede meetod, varimaks pööramine					
	<b>F1:</b> Oht	<b>F2:</b> Demo- kraatia ja kontroll	<b>F3:</b> Võima- lused	<b>F4:</b> Moraalne kvaliteet	<b>F5:</b> Hirm
Lapsed saavad Internetist neile sobimatut informatsiooni	<b>0,73</b>	0,21			
Arvutite ja Interneti sage kasutamine on tervisele kahjulik	<b>0,54</b>				0,23
Internet soodustab tarbetut ajaraikamist	<b>0,53</b>	0,27			0,28
Internet soodustab töö- ja õpiaja tarbetut raikamist		<b>0,61</b>			
On hea, et Internetis tegutsedes on inimesel võimalik anonüümseks jääda		<b>0,59</b>	0,28		
Tänu Internetile saavad tööandjad ja valitsus rohkem kontrollida ja jälgida tavalisi inimesi	0,31	<b>0,54</b>		0,21	0,23
Tänu Internetile saab tavaline kodanik rohkem mõjutada valitsust ja poliitikut		<b>0,46</b>	0,29		0,33
Inimesed, kellel puudub juurdepääs Internetile, on kõigis eluvaldkondades ebasoodsamas olukorras			<b>0,68</b>		
Kõigile lastele tuleb võimalikult varakult õpetada arvutite ja Interneti kasutamist		0,33	<b>0,66</b>		
Maailm on muutumas arvutitest ohtlikult sõltuvaks	0,38	0,21		<b>0,61</b>	0,36
Inimesed, kes kasutavad arvutivõrku või Interneti, peaksid olema mures oma isikuandmete turvalisuse pärast	0,31	0,40	0,27	<b>0,49</b>	
Anonüümsus Internetis vallandab inimeste halvimaid tungid	0,33	0,34	0,26	<b>0,49</b>	
Arvutite ja Interneti kasutamine hirmutab mind	0,34				<b>0,61</b>
Interneti tõttu võõranduvad inimesed üksteisest	0,33			0,35	<b>0,52</b>

**Paksu kirjaga** on esile tõstetud suurim faktorlaadung vastava tunnuse osas.

<b>Tabel 9.9. Internetiga seotud hoiakute esindatus rahvarühmades</b>					
Keskmissed faktorkaalud; $p < 0,05$					
	<b>F1:</b> Oht	<b>F2:</b> Demokraatia ja kontroll	<b>F3:</b> Võimalused	<b>F4:</b> Moraalne kvaliteet	<b>F5:</b> Hirm
<b>Sugu</b>					
Mehed	-0,03	0,03	0,12	-0,03	-0,07
Naised	0,03	-0,02	-0,11	0,02	0,06
<b>Vanus</b>					
15–19	-0,18	0,42	-0,05	-0,05	-0,17
20–29	0,02	0,28	-0,01	0,04	-0,15
30–44	0,01	-0,00	0,06	0,09	-0,01
45–54	0,01	-0,13	0,02	0,02	0,03
55–64	0,04	-0,27	-0,04	-0,08	0,04
65–74	0,05	-0,26	-0,05	-0,14	0,28
<b>Haridus</b>					
Alg, põhi	-0,07	0,11	-0,07	-0,17	0,05
Kesk	0,02	-0,00	-0,02	0,05	0,01
Kõrg	0,01	-0,11	0,15	0,06	-0,06
<b>Keel</b>					
Eesti	-0,03	0,02	0,09	0,01	0,01
Vene	0,07	-0,02	-0,15	-0,01	-0,01
<b>Kuusissetulek pere liikme kohta</b>					
Kuni 1500	0,04	-0,00	-0,04	-0,03	0,05
1501–2500	0,02	-0,06	-0,04	0,04	0,05
2501–4000	-0,03	0,07	0,03	-0,03	-0,02
4001–6000	0,02	0,12	0,10	0,05	-0,08
Üle 6000	-0,16	-0,12	0,20	0,02	-0,21
<b>Asulatüüp</b>					
Pealinn	0,01	-0,00	0,02	0,07	-0,05
Suur linn	-0,03	0,06	-0,10	-0,04	-0,01
Muu linn	0,02	0,04	0,04	-0,02	-0,00
Maa	-0,01	-0,06	0,02	-0,04	0,05

vanuserühmades. Iseloomulik on ka eestikeelsete (-0,03) ja venekeelsete rühmade (0,07) vastandlikud hoiakud. Demokraatia ja kontrolli faktor iseloomustab hästi vanuserühmade hoiakuid, olles tugevalt positiivne 15–19-aastaste seas ning muutudes negatiivseks vanemates earühmades (65–74-aastaste rühmas -0,26). Võimaluste faktor on seotud sooliste erisustega, olles meestel kaalu-ga 0,12 ja naistel -0,11. Võimaluste faktori puhul eristub kõige tugevamalt kõrgharidusega vastajate rühm, kus seotus faktoriga on tugevalt positiivne (0,15). Seotus faktoriga on erinev ka eesti- (0,01) ja venekeelsete vastajate (-0,15) puhul. Moraalse kvaliteedi faktori osas joonistuvad negatiivsed seosed tugevamalt välja kõige vanemas earühmas ning alg- või põhiharidusega rühmas. Hirmu faktor on tugevaim 65–74-aastaste seas ning on tugevalt negatiivne nooremates vanuserühmades (15–19-aastastel -0,17).

## 5. Hinnangud arvamuse avaldamise kanalitele

Tabel 9.10 annab ülevaate keskmistest hinnangutest vastuseks küsimusele *Kui olulised on inimeste arvamuse väljendamiseks Teie meelest järgmised kanalid?* Huvitav on märkida, et kõige olulisemaks arvamuse avaldamise kanaliks peetakse avaliku arvamuse uuringuid ning sellele järgnevad telesaates esinemine ning lugejakirjad. Uue meedia kanalid arvamuse avaldamise kanalitena hinnatakse märkimisväärselt madalamalt ning ka neid, kes nendele kanalitele oma hinnangut anda ei oska, on tunduvalt rohkem.

Lisatabel 9.6 annab ülevaate arvamuse avaldamise kanalitele antud olulisushinnangute keskmistest sotsiaal-demograafilistes rühmades. Suurimad erinevused ilmnevad keele lõikes. Venekeelsete vastajad hindavad kõrgemalt avaliku arvamuse uuringuid, telesaates esinemist, telesaatesse

**Tabel 9.10. Olulisushinnangud erinevatele arvamus avaldamise kanalitele**

Keskliste pingerida (5-palline skaala); N = 1470

Kui olulised on inimeste arvamus väljendamiseks Teie meelest järgmised kanalid?	Keskmine	Ei oska öelda + vastamata (%)
Avaliku arvamus uuringud	3,84	21
Telesaates esinemine	3,67	20
Lugejakirjad toimetusele	3,61	25
Raadios esinemine	3,47	20
Foorumid ja küsitlused Internetis	3,28	38
Telesaatesse helistamine	3,21	22
Raadiosaatesse helistamine	3,19	23
Kommentaariid ja vastukajad portaalides, <i>online</i> -väljaannetes	3,17	42
Meiliistid	2,92	44

helistamist, raadios esinemist ja raadiosaatesse helistamist (vahed 0,2–0,3 skaalapunkti).

Arusaamad erinevate arvamus väljendamise vahendite olulisusest erinevad ka vanuserühmiti. Noored hindavad lugejakirju arvamus avaldamise vahendina madalamalt kui vanemaalised (keskmised noorimas ja vanimas rühmas vastavalt 3,2 ja 4,1). Mõnevõrra tõuseb koos vanusega toetus avaliku arvamus uuringutele kui arvamus avaldamise vahendile, olles siiski võrdlemisi kõrgelt hinnatud kõigis rühmades (15–19-aastastel 3,8; 55–64-aastastel 4,0; 65–74-aastastel 4,1). Vanim earühm hindab noorimatest märksa enam arvamus avaldamise vahendina raadios esinemist (15–19-aastastel keskmine 3,2; 65–74-aastastel 3,7).

Suhtumine arvamus avaldamise kanalitesse eristub suhteliselt selgelt ka haridusrühmade lõikes. Nii hindavad alg- või põhiharidusega vastajad arvamus avaldamise vahendina kõrgemalt telesaatesse helistamist (keskmine 3,4) ja raadiosaatesse helistamist (3,3) võrreldes kõrgharidusega vastajatega (mõlema kanali puhul keskmine vaid 2,9). Nende haridusgruppide puhul erineb suhtumine ka kommentaaridesse ja vastukajadesse *online*-väljaannetes ja portaalides (alg- või põhiharidusega rühmas keskmine 3,4; kõrgharidusega rühmas 3,0).

Ligikaudu samaväärselt varieeruvad arvamus sissetulekurühmade lõikes. Sissetulekurühmas kuni 1500 krooni pereliikme kohta hinnatakse arvamus avaldamise võimalusena telesaatesse helistamist kõrgemalt (keskmine 3,4) kui kõrgetes sissetulekurühmades (sissetulekuga 4001–6000 keskmine 3,0, sissetulekuga üle 6000 keskmine vaid 2,8). Samamoodi iseloomustavad keskmised suhtumist raadiosaatesse helistamisse.

**Tabel 9.11. Olulisushinnangud erinevatele suhtluskanalitele**

Keskliste pingerida (5-palline skaala); N = 1470

Kui olulised on Teile teiste inimestega suhtlemisel järgmised kanalid?	Keskmine	Ei kasuta + vastamata (%)
Isiklik vahetu suhtlus	4,74	8
Lauatelefon	3,99	18
Mobiiltelefoniga helistamine	3,99	20
E-mail	3,61	44
Kirjad ja postkaardid	3,38	18
Mobiiliga SMS-sõnumite vahetamine	3,16	31
Kiirteadete vahetus (ICQ, AOL, MSN)	2,96	66
Jututoad	2,67	62

## 6. Hinnangud suhtluskanalitele

Tabelis 9.11 on näha, et suhtlemiskanalitena eristuvad teistest olulisemadena isiklik, vahetu suhtlus (keskmine 4,7) ning võrdset lauatelefoni ja mobiiliga helistamine (keskmine 4,0), millele järgneb e-mail (keskmine 3,6).

Antud juhul on vastamata jättrutele liidetud ka need, kes valisid variandi *Ei kasuta*. Sellest on näha, et suhtluskanalitena kasutatakse vähem jututubasid ja kiirteadete vahetust. Samas on märkimisväärselt väike nende inimeste hulk, kes ei kasuta e-maili: 2/3 inimestest on avaldanud e-maili kui suhtluskanali kohta arvamus ja andnud kanalile suhteliselt kõrge hinnangu.

Kui võrrelda suhtluskanalite olulisust erinevate sotsiaal-demograafiliste rühmade lõikes (lisatabel 9.6), selgub, et kõige olulisemaks suhtlemise viisiks peavad kõik rühmad isiklikku, vahetut suhtlust (keskmised kõigil 4,7–4,8).

Kõige olulisemaid erinevusi esineb suhtluskanalite tähtsustamisel vanuserühmades, kus keskmiste erinevused on kuni 0,8 punkti. Nii peavad 65–74-aastased postkaarte ja kirju märksa olulisemaks suhtluskanaliks kui noorimad, 15–19-aastased (keskmised vastavalt 3,9 ja 3,1 punkti). Ka lauatelefoni peavad vanimad märksa olulisemaks suhtluskanaliks kui noorimad (keskmised vastavalt 4,5 ja 3,6). Mobiiltelefonid peavad üheks olulisimaks suhtluskanaliks just 20–29-aastased (keskmine 4,4), kelle arvamus erineb märgatavalt vanimate omast (keskmine 3,6). Statistiliselt olulist erinevust ei ilmne üksnes e-maili puhul.

Hariduse alusel erineb suhtumine suhtluskanalitesse märgatavalt jututubade puhul, mida alg- või põhiharidusega vastajad hindavad suhtluskanalina märgatavalt kõrgemalt kui kõrgharidusega vastajad (keskmised vastavalt 3,0 ja 2,5).

Suhtlusvahendina hindavad madalama sissetulekuga inimesed kirju ja postkaarte märksa enam (keskmise 3,6) kui kõrgemapoolse (sissetulekurühmas 4001–6000 keskmine 3,2) või kõrge sissetulekuga inimesed (sissetulekurühmas üle 6000 krooni keskmine 2,9). Seevastu tähtsustavad kõrge sissetulekuga vastajad suhtlusvahendina e-maili mõnevõrra kõrgemalt (sissetulekurühmas üle 6000 krooni keskmine 3,8; sissetulekurühmas 4001–6000 krooni keskmine 3,9) kui kõige madalama sissetulekuga inimesed (keskmise 3,4).

Soo lõikes ilmneb erinevus lauatelefonide hindamises suhtlemiskanalina, mida naised peavad pisut olulisemaks (keskmise 4,1) kui mehed (keskmise 3,8). Naised peavad olulisemaks ka SMSse (keskmised naistel 3,3 ja meestel 3,0) ning kirju ja postkaarte (keskmised naistel 3,6 ja meestel 3,2).

### **Kokkuvõte**

Võime resümeerida, et tänaseks on mobiilikasutajaid enam kui kolmandik elanikkonnast, kuid siiski on võimalik märgata pisut aktiivsemat kasutust meeste ja jõukamate elanikekihtide seas. Need on ka rühmad, kes alustasid märkimisväärselt varem mobiiltelefonide kasutamist. Uuringule eelnenud paari-kolme aasta jooksul on siiski toimunud murrang, mille käigus mobiiltelefonide kasutus muutus üldiseks.

Arvutikasutajaid on ligi pool elanikkonnast. Meie uuringus on olulisimaks edasiarenduseks arvutikasutajate klasterdamine erinevatesse kasutajatüüpidesse: aktiivne, mitmekülgne mängija; erialane, tööine kasutaja; kontoritarkvara ja Interneti kasutaja; kontoritarkvara kasutaja ning vähekasutaja. Selline liigitus võimaldab tunduvalt põhjalikumalt lähenemist arvutikasutuse temaatikale.

Ka internetikasutajate puhul on olulisimaks uuringutulemuseks kuue erineva kasutajatüübi eristamine: mitmekülgne, interaktiivne võrgusolija; mitmekülgne infokasutaja; suhtleja; eraeluliste teenuste kasutaja; virtuaalses avalikkuses osaleja; vähekasutaja. Selline liigitus võimaldab ka ületada osaliselt poliitilise retoorika poolt loodud kasutajate ja mittekasutajate eristamist. Uuringu tulemused näitavad, et nii arvuti kui ka Interneti kasutajad pole sisemiselt homogeenised grupid, kes tarvivad digitaalseid tehnoloogiaid riiklikult heaks kiidetud viisil, vaid et ka nende gruppide sees on suur hulk erinevusi. Interneti ja arvutikasutajate mitmekülgseuse hindamiseks tuleb seda kvalitatiivsete meetoditega edasi uurida.

### **Kasutatud kirjandus**

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## **A MOBILE PHONE ISN'T A MOBILE PHONE ANY MORE**

### *Case study of Estonian mobile phone use practices*

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**Abstract.** The aim of this article is to give an overview of the multiplicity of mobile phone uses in Estonia. Based on student essays and survey data, this article aims to look at the variety of mobile phone uses that extend the use beyond phone calls and interpersonal SMSs. This pilot study provides a possible classification of mobile phone services that will help to better understand the variety of functionalities and use practices of a cell phone.

### **1. Introduction**

Communication studies have proclaimed information and communication technologies as their own study object, yet there are surprisingly few studies on the topic of mobile telephones. The focus of the papers available is mostly on different aspects of interpersonal communication (Geser, 2004). Although communication function is undoubtedly the key element to the mobile phones, we should still look at the changes in the mobile phone use that take advantage of the multiple functions of the mobile phones. The aim of this paper is to move beyond the interpersonal communication practices as calling and text messaging and study other uses of mobile phones.

We are using Estonia as the context for our case study on mobile phone use, as in Estonia the priorities in the area of developing mobile services alongside with other information and communication technologies have been defined. Estonia has a large variety of different services that can be accessed through mobile phones.

The aim of this article can be seen as two-fold: developing ways for classification of the mobile phone services from the user perspective and analyzing quantitative and qualitative data to illustrate these classifications.

This article has two starting points. On the one hand, we have developed a theoretical classification of mobile phone services onto which we map data on user experiences. On the other hand, it must be born in mind that the survey data and data from student essays that provides the empirical material for our study was collected before the theoretical classification was developed. The list of services in the survey originated from research team's own user perspectives and experiences and did not

attempt to be comprehensive; therefore all areas of our theoretical map are not fully covered with empirical data. Thus further studies are welcome to test the comprehensiveness of our classification

## **2. Previous research**

Mobile phones have made notable differences in personal lives of people. They started off as communication tools for businessmen and have since become widely used across all societal strata. The key fascination is carried also with their name – mobile. The telephony and further more the mobile telephony studies have brought the attention to the aspects of mobility and social space in the everyday life (Ling and Haddon, 2001 and Geser, 2004).

However, the social aspects of mobile phone communication have received significantly less attention than other developments in information and communication technologies (ICTs). Townsend (2000) tries to explain why mobile phones are much less studied than Internet and computers by saying that mobile phones seem pedestrian compared to the depths cyber space has to offer. Geser (2004) adds that PC-s and Internet technologies are far more popular among researchers despite the fact that cell phones are used among much broader strata of people and monthly phone bills exceed the money spent on Internet provider services. On the other hand, an example from the Japanese culture indicates a possibility to view the mobile Internet use as “an antidote to the central social concern of the IT era: the digital divide between the people who can and cannot use IT” (Matsuda, 2005:33). In Japanese experience the use and attention to the mobile phone has opened digital communication to larger societal groups.

The main focus of the mobile phone studies is on the social and communicative role of the mobile phone in everyday life. For example Oksman and Turtiainen (2004) demonstrate in their paper that mobile phones represent a specific youth communication culture, where the mobile phone represents an organic part of teenager's everyday life.

Focusing on the communicative aspects of the mobile phone use is only natural, taken into account how many subtle changes in the phone users' everyday life they have evoked. Yet those changes are by no means brought on only by the mobile phone, as the users have adopted the technology to respond to their life situations and needs. A mobile phone like other communication technologies is a polyvalent tool that can change its major functions completely during time (Geser, 2004). According to Geser, many studies have illustrated that mobile phone use is functionally expanding and the technology is applied for a growing variety of purposes. He stresses: “Typically, there seem to be broad trends towards expanding usage from mere emergency to routine cases and from specific instrumental to more diffuse expressive communications” (Geser, 2004: 7). In our opinion it is important to note how the expansion of the mobile phone functions broadens also beyond interpersonal roles to other social practices. The mobile phone functions are constantly expanded by the phone producers' race for market share and race to out-date their own gadgets. Another constant stream for new applications comes from enterprises seeking new ways of using mobile communication for commercial purposes.

Research has turned attention to these changes from different disciplinary approaches, but usually not following the whole complexity of the usage. For instance, Okabe (2005) studies the different applications of the camera of the mobile phones, looking how they are being constantly involved in different social practices. Another approach to the mobile phone studies is to look at the spatial issue of the mobile communications, for example Humphreys (2005) looks at the boundaries between public and private in mobile communication. Ahas et al (2004) are using the idea of social positioning where looking at the mobile phones users' location and distribution in space via mobile phone signals is a way to study the structure and order of the social space.

With the spread of mobile phone applications in different areas of m-commerce has also attracted some attention from scholars (e.g. Aoyama, 2003). In his comparison between American and Japanese m-commerce, he concludes:

Although over 120 million subscribers already exist in the wireless telephone industry, surveys in the United States show that the most basic form of M-commerce, text messaging, is yet to emerge, and the use of cellular telephones still remains voice centric. For most Americans, current speed of data transmission, and the lack of a 'killer application', compounded by the small screen and poor service, does not justify paying an additional fee. (Aoyama, 2003:1208)

This may also be the explanation why the attention to mobile phone research is not so widely available. The attention of the American researchers has not yet seen the different possibilities of the mobile phones. Whereas the m-commerce in Japan is understood from the perspective of using mobile technologies in order to access the Internet, m-commerce is therefore also compared with e-commerce from the market size perspective.

In the Estonian context, mobile phones have also been studied by Margit Keller (Keller, 2005). She uses consumer study focus to demonstrate how the mobile phone as commodity has changed the role of status symbol of the young yuppies to hedonistic lifestyle related consumer product. Through analyzing the notion of freedom in the mobile phone advertisements she demonstrates how the representation of the phone has shifted during the period of 1991-2001. Consumer culture approach is another way to analyze the mobile communication that distances from the narrow focus on interpersonally communicative functions of the phone itself.

The theoretical focus of the current paper is located in technology user studies perspective, where we aim to demonstrate the expansion of the mobile phone uses beyond the most common interpersonal communication aspects. We are using the user perspective to seek for a classification of the mobile phone services through their application in everyday life.

### **3. Classifying mobile phone services**

Using Estonia as a location for our case study is important not only because the data is readily available for us, but we also believe that the variety of services available for the Estonian mobile phone users can be insightful also to others studying mobile phones. As Iko hopes that the book on Japanese mobile phone use or *keitai* culture helps "to

move beyond national identity as the primary tag for social and cultural distinctiveness" (Iko, 2005: 15), we also hope that the case study of mobile phone and mobile-related services usage in Estonia helps to broaden the picture about the mobile phone use in general.

While looking at the things one can do with the mobile phone besides exchanging oral or written messages with other people, we have to look at two aspects. First, there are functions of the mobile phone itself: clock, camera, calculator, notebook, mobile Internet browsers etc. These services depend largely on the type and model of the phone and their applications are based on the individual user preferences.

Second, there is a long list of services that can be obtained via calls or SMS-s. Their uses in Estonia are various and complex. Various services provided through a mobile phone have acquired an abbreviation 'm-' in front of the name of the service. It also indicates that the services usable via mobile phones are so common that the expressions starting with 'm-' are very much integrated into everyday speech.

There have been some attempts to provide classifications of mobile services. On the one hand there is the classification from Ecom used by Aoyama (2003), where m-commerce is classified through the list of goods, which can be purchased via m-commerce. On the other hand, the report by Andersen provides three types of classifications: by user orientation (consumer vs. business oriented); by interaction type (person-to-person, person-to-machine or machine-to-machine); or by their nature (communication-centric, transaction-centric or content-centric) (2002:22). In this classification, all applications are categorized, communication-centric applications are enabling different communications, transaction-centric applications are conclusions of transactions over mobile network and content-centric are aimed at delivery of the content. The limitation of this classification is in the fact that some kind of transaction and some kind of communication are involved in each of those cases.

As our aim is to look more closely at the services and applications provided via mobile phones in the Estonian context, we have excluded from our classification the person-to-person calling and SMS-texting and focused on other services. We have taken a more user centric approach and looked for additional ways of classification. The mobile services segmentation in Andersen (2002) lacks in our opinion the user centricity and the classification provided is from the industry perspective. From the user perspective, we find that there are several bases on which the services can be categorized, it is impossible to combine them all in one scheme. Thus we have firstly identified two dimensions of the m-services: Information and Purchases. From those we have divided the information perspective into two: information retrieval and information provision. Table 1 includes examples of the mobile services available in Estonia classified according to those categories while not providing an exhaustive list.

In this instance, the information provision related classification correlates mostly with the person-to-machine communication centric cluster in the Andersen (2002), but in the most cases the information provided will be further used by other persons. In the information retrieval cluster we can, on the one hand, see similarities with the content provision cluster, but it can also be seen as machine-to-person communication. Purchases cluster is comparable with the m-commerce sector, but some of the items provided in this cluster are taxes in their essence as they are collected for the public services (e.g. parking). One of the difficulties with categorizing donations is that one



aspect is providing information ‘about how good person one is, on the other hand one is ‘purchasing the feeling of being good’. We feel that it is easier to justify the first classification and have therefore put the making donations in the information provision category.

Table 1. Division of m-services provided in Estonia in the Information-Purchases dimensions

Information		Purchases/commercial transactions
Provision	Retrieval	
Reporting disorders in town, voting in polls, reporting utility balances, voting in TV and radio shows, participation in prize draws, donations	Library due date reminder, teachers’ messages from school, tourist information, bank balance, drug reminder, news, weather	Bus tickets, parking, lotto, taxi fare, drinks, newspapers, access to internet information, ring tones, background images, sms-poetry, astrology, dating, quizzes

In the second classification, we have attempted to divide the service providers on the scale private and public and from the user perspective on the scale between pragmatic and entertaining use. The classification is presented as a matrix in the Figure 1.

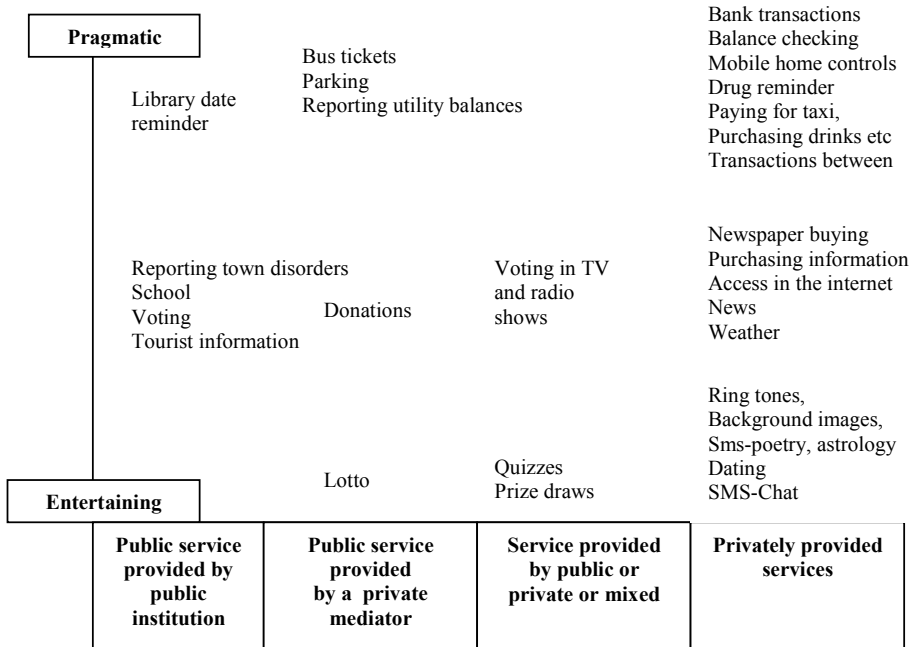


Figure 1: Classification of mobile phone services provided in Estonia on the pragmatic-entertaining and public-private scales.

We have mapped services on a continuum from entertaining to pragmatic, because the division is not so clear-cut. The division becomes more difficult especially with information exchange related services where the question of pragmatic need or entertainment value of the news is individually and situationally specific. McQuail shows that the relationship between media and the individual can range from entertainment to social company, to personal identification and information seeking (McQuail 2005: 348).

The division of the public and private providers also needs a continuous rather than concrete approach as in a modern state many public services are outsourced to private enterprises (e.g. a privately owned security firm provides the city parking service). In other cases, the service can, and in Estonian case is, easily be used both by private and public providers. For example voting in TV shows is an option that is used in public broadcasting as well as by private TV channels.

With the classification of the services one must always remember that there is the intermediary body of the mobile service provider, who, being a private entity, collects revenues from SMS-s and calls made to use these services. As the list of services provided by mobile phones is constantly growing and changing, it is nearly impossible to comprise an exhaustive list. The classifications in this article are based on the Estonian context and services provided in the figure and tables should be viewed as examples.

#### **4. Methodologies**

The current study is part of a larger research project investigating social and cultural practices. The paper relies on several methods. Firstly, the survey was conducted at the end of the 2005 and was a follow-up to survey conducted in the end of 2002-beginning of 2003 (Kalmus, Lauristin, Pruulmann-Vengerfeldt 2004). The survey itself covers around 800 variables ranging from individuals views towards changes in the society, their habits and everyday practices: cultural activities, consumption, attitudes concerning environment and children, participation in politics and public sphere, questions relating to trust, values, identities and, finally, traditional and new media consumption – radio, TV and print media, usage of the mobile phones, computers and the Internet. The basic idea behind the survey was that in the contemporary society patterns of media use reflect social and cultural divisions of the society.

The survey was combined with multiple data-collection methods where the written questionnaire was complemented by face-to-face interviews. The questions relating to the mobile phone usage were in the interview section.

The sample included 1000 Estonian- and 500 Russian-speakers living in Estonia, which is representative for the population of Estonia. In compiling the sample, database of 1202 people, who participated in the previous study and agreed to be contacted for the follow-up, was used. Due to the longitudinal nature, the same 150 sampling points all over Estonia were used. Altogether 572 people (47, 6%) agreed to participate in the follow-up survey. The sample was complemented with continuing at the same sampling point and applying the so-called young-men-rule (the youngest man within the ages of 15 and –74, who was at home, was interviewed. If there were no men of that age at home, then the youngest woman between the ages of 15 and –74 years was

interviewed.) Additionally a quota according to the native language was used (determined separately for each sampling point).

For the qualitative part of the study text analysis was conducted. The sample comprised of 75 student essays discussing social functions of the mobile phones in Estonia. In addition to that, six individual student research papers about the various aspects of the mobile services were used. Research papers looked at the initiation of the services, the users of the service and future predictions for the service.

When analyzing the data, we will continue using the classification of the services that we have introduced previously. The range of the survey data is always limited and as this survey was so extensive and covering many different fields, the focus on the mobile phones was limited. The list composed for the survey didn't at that time have theoretical grounding and was generated on the *ad hoc* basis from the research team's own interests. Therefore each case can be used as illustrative to the type it represents. From the functions of the phone we have investigated the use of notebook, camera, voicemail and e-mail functions. From the public provider services, we have looked at the bus ticket, parking and making donations services and from the private services we have looked at making payments, downloading ring tones and background images, news reading, voting in TV and radio polls and SMS-entertainment. Each of those cases are compared between age and gender groups to indicate that although a mobile phone has seemingly become ubiquitous and homogeneous across population (Geser 2004), different use practices distinguish the user groups significantly. For the sake of clarity we have summed the responses "Often, regularly" and "Sometimes" to one percentage of the frequent use and the percentage is given of the mobile phone users rather than the whole population.

We have used the qualitative data to give further insight to the meaning of the quantitative data. Quotations are mostly used as examples of the quantitative results or where they enable broadening the understanding of the material.

The following section of the empirical material is divided into four sub-sections: first we provide a short overview on the mobile phone ownership, second we look at the use of the sample of mobile phone functions, third we look at the sample of public services and fourth we look at the sample of private services.

## 5. Mobile phones and their uses in Estonia

As elsewhere, mobile phones were initially expensive and exclusive, used only in the business context. First queries about the availability of the mobile phones in Estonia were done in 1993 and the number of users was 2% (BMF, 1994). It has been ever growing, resulting in significant jumps: in 1997 the number of users was 7% whereas in 1998 the number had grown to 33%. The expansion of the user body has kept growing so that in the year 1999 the number of mobile phone users had grown to 52% of the population (Vengerfeldt and Runnel 2004).

By the year 2005, the number of mobile phone SIM-cards had grown to 107% by December and it surpassed the number of Estonian inhabitants in August 2005 (EMT). The number of mobile phone owners was 88% of the population during our study in November 2005 and the differences between men and women were not statistically significant. Important differences in mobile phone ownership are between age groups:

with 96% of owners within the 15 and –19 age group, 98% of owners within 20 and –54 years group and only 59% of owners among 65 and –74-year-olds.

This gap is also visible in the qualitative data where our students often pointed out differences in the younger and older generation phone use and needs. In their essays their opinions show that although the use of the different applications might be not so active among the older generation, they still enjoy the result every now and then:

One of my friends has her phone full of pictures of old ladies because her granny wanted that also her friends' snapshots would be taken (Woman 1).

The difference in the number of SIM cards and in the number of actual mobile phone users indicates that there are people who have several SIM-cards as this enables them to use different applications at the same time. The expert opinion is that four SIM-cards give all the necessary flexibility and enable to use all services: two for telephone, SIM as a key-card, SIM-card for the computer Internet connections. The ownership of the phone itself can have a variety of meanings and depends heavily on the group of people. Our qualitative essays show that the mobile phone is seen as a status symbol mostly among children or teenagers:

For example, when talking to the kids, there is a tendency that even if a primary school pupil wants to get a mobile phone, he rather stays without it than copes with an old model with an antenna. Mobile phone is a status item (Woman 2).

On the other hand, people see the mobile as an integrated part of everyday life. The symbolic meaning of the phone revolves not so much around status, but rather, it is seen as a survival item in the modern urban life.

A mobile phone is a commodity that goes with wallet and keys, and losing it may be as tragic as the illness of a family member (Woman 3).

In seeking the different classification bases for understanding the user perspective on the mobile phone services, we ended with the pragmatic-entertainment scale. Different cultures have different uses for their technological tools. So, for example, research upon Japanese culture shows that there can be made a distinction in the usage of different ICTs: computers are more for professional use and using Internet via mobile phones is more for entertainment reasons (Matsuda, 2005). This shows that differentiating between more pragmatic-oriented and more entertainment-oriented uses of the mobile phone services is important. However, our data suggests that Estonian culture is mixed in its technological openness: mobile phone is used both for leisurely practices and for professional purposes.

Although not so much in my close circle of friends, I nevertheless know a lot of people, who use the mobile Internet, reading-writing e-mails, therefore using the Internet via mobile phones is important. I have also noticed a lot of playing games, sending-ordering-listening to the ring tones; it means that the entertainment part is very important (Woman 4).

The variety of services available for the mobile phone has not so clearly oriented the user practices in either way making it important to look at the different functions and services in combination with each other.

### 5.1. USE OF THE DIFFERENT MOBILE PHONE FUNCTIONS

Mobile phone functions are constantly expanding and manufacturers constantly attempting to guess the needs and wishes of the consumer. Although the industry provides consumers with mobile phones with more and more functions, the qualitative data suggests that there is also thrive for simple phones. Often people own phones with much more functions than they actually use. Others, having simple phones, don't want those to be any more complicated.

I'm personally the owner of the Nokia 3310, almost from the Stone Age, which means that I use phone for a) for making phone calls, b) for sending messages, c) as an alarm clock. Friends have asked, when I'm finally going to renew my soapbox, but until now my answer has remained the same: I don't need them. How much do they use the additional widgets of the phone? I don't believe, that it is done so often as the phone really enables (Woman 5).

Among some phone users, whose orientation is not towards mobile phones as status commodities primarily, technology is renewed more slowly, omitting some technological solutions and moving directly from relatively older solutions to the most recent ones.

For example, quite some of my friends still use some old model of Ericsson phone - why buy a new one, when the old one still works? But when they need a new phone some day, they already obtain a new generation phone, which enables making videophone calls (Man 1).

People also think that often the variation and amount of different mobile phone functions reduce the actual usability of the phone. Not all the applications are meaningful in all life situations. The most typical case is the use of mobile phone functions among the older generation, who in some cases can still be seen learning the basic call function.

In our survey, we also included some mobile phone functions for which we asked the frequency of the use questions. Figure 2 shows the frequency of use for reading e-mails, notebook function, voicemail functions and camera functions of the mobile phone among the phone users. Their use is compared in the age and gender groups.

The most popular is to use a mobile phone as a notebook and already two thirds of 15 to -29 year-olds could be viewed as frequent users. The complication of the text entry is compensated by the reminder applications. Notebook application can also be used as a tool to remind important jobs: take your baby pill; pay your utility bills etc.

Camera function of the mobile phone is a relatively new application as the phones with the cameras have so far been quite expensive. Still, it has gained 41% of users among the youngest surveyed group and as the market today makes it more and more difficult to choose a mobile phone without the camera function, it can be expected that the use of this function is rising though it will be accompanied by the discussions concerning the quality of the photos.

And concerning the photos made with mobile phones, my personal opinion is, that the quality of them lags behind the one's made with photo cameras, that's

why the convenience of use and accessibility don't outweigh the bad quality of the pictures (Man 2).

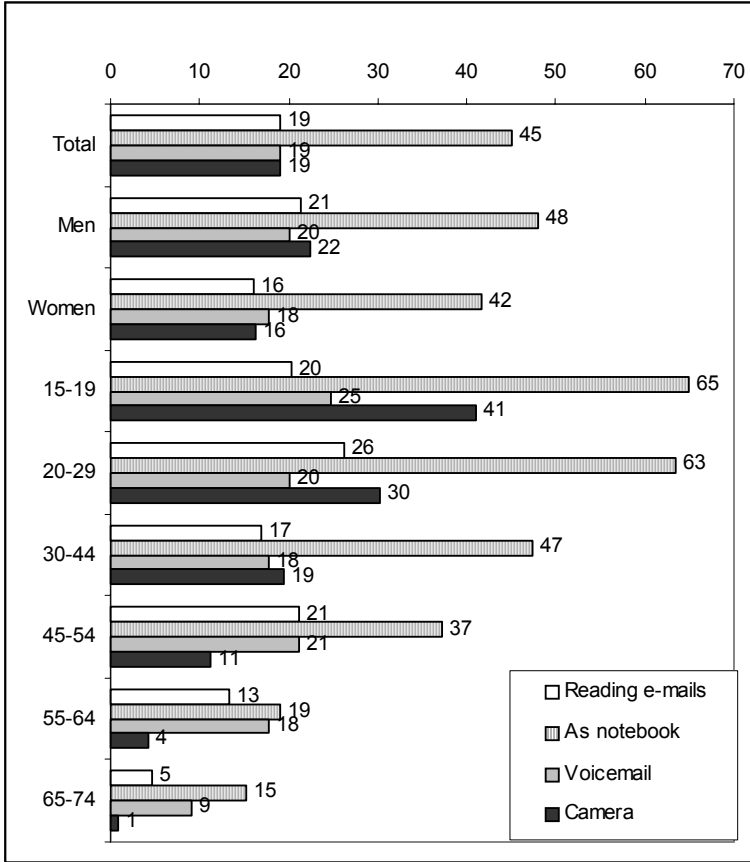


Figure 2. Frequent use of the mobile phones' functions, divided by gender and age groups

The camera function may be available, but not used when people have access to good quality digital cameras; the mobile phone cameras are used when the digital camera is not with the person.

When traveling and on festive occasions one uses photo camera, whereas mobile cameras are used in parties and in night clubs, where you don't take your camera along, or where it is forbidden (Woman 6).

The application of the mobile phone camera is often more accessible and easier and can have another social meanings and uses (Okabe, 2005 and Cohen, 2005), for example widening other modes of interpersonal communication:

For example it is much more influential to send a picture with grilling sticks filled with delicious barbecued meat to a friend than text him “we have a barbecue tonight, why don’t you come over?” Also in intimate relationships a visual image carries in itself more of an added value than a mere informative message (Woman 7).

Also, mobile camera phones can be a means of recording or note taking.

I think that in Estonia mobile camera phones are mostly used for taking visual notes and recording personal moments (Man 3).

Reading e-mails using a mobile phone is most popular among the 20 and –29 year- olds indicating that this is probably mostly a work-related habit. The same age group is also most represented within the Versatile and Interactive Internet user group and variations of their use practices seem to be spreading across the technologies (reference, 2004).

Voicemail is the phone application that we expected to be the most popular, especially as some mobile service providers have made it almost compulsory to its clients, but it seems that people have less need for it and the use of this application is only around one fifth of the mobile phone users.

## 5.2. USE OF DIFFERENT PUBLIC SERVICES PROVIDED VIA MOBILE PHONE

Public institutions and public-private partnerships provide primarily pragmatic, including information-related mobile services. The survey didn’t cover public services, provided also by public institutions like reporting about disorders in town, exchanging information with school or receiving notice about the library due date. But the data enables to see the usage of services provided in public-private partnership, for example buying tickets as the public transport and parking services in various Estonian cities are privately provided. As also noted in development of e-services by Capgemini (2005), more services are provided in the area of revenue collecting, thus also the services presented here, like purchases of parking ticket and bus ticket are meant for collecting money from people.

Figure 3 illustrates that the scale to which people use mobile phone services provided by public institutions is much smaller compared to the use of mobile phone functions. Even as the most popular services, bus tickets among 15 and –19-year-olds and parking among 20 and –29 year olds is only used by 15% of the mobile phone users. Mobile services provided by the public institutions in this example are all very much life-situation based, there is no point in using mobile parking if you don’t have a car or park it in places where you can’t use mobile payment.

Mobile parking is available in five Estonian towns, and it was introduced in the Estonian capital Tallinn in 2000. By the year 2005, 43% of the revenues from parking in Tallinn were collected via mobile phone (Taim, 2005). Mobile parking itself is an application, which usability improves very much during the use; the initial barrier comes from acquiring the m-parking sticker and familiarizing yourself with the parking zones. Once this is done, one won’t need to search for parking meters, look for coins and need to run out from your appointment to insert more coins to the parking meters.

The only problem that student essays have identified is the fact that you might easily forget to stop parking and your account will be charged also for the time you are no longer even in the area.

Convenient and easy to use, of course it takes a bit of time to get used to, but if you do it every day, a phone call to start and a phone call to end suffices. No need to look for parking meter and cash, to wait in the line or freeze your fingers while figuring out, how to get your parking receipt (Woman 8).

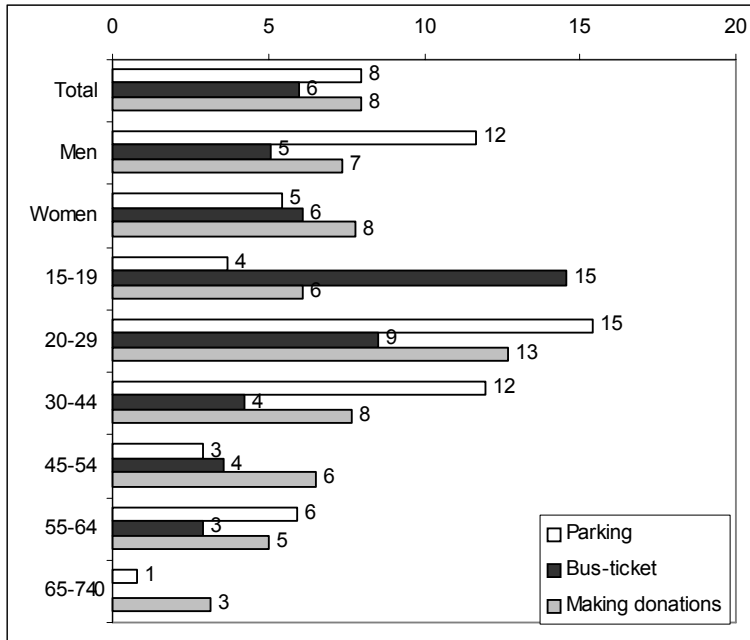


Figure 3. Frequent use of the public institutions' mobile services, divided by gender and age groups

From this group of services, making donations should be viewed separately as the public institutions do not always facilitate donating, but rather the donations are done for the public institutions. There are a large number of donation campaigns during Christmas time and the survey took place some weeks before those campaigns started. Donating is not something people do on the regular basis. Therefore, it might be valuable to add the number of people who have very rarely used mobile phone to make donations. This increases the total to 19%, there are no statistically significant differences between men and women, but among age groups, the 20 and -29 age group has 29% who have ever made donations using mobile phone and making donations seems to be one of the functions, also more eagerly adopted by the elderly, who use mobile phones primarily for interpersonal communication. Taken into account that the culture of making donations is relatively new in Estonia, mobile phones have made it



much more accessible to people. Making donations is also made easier by the fact that your donation is being added to your monthly phone bill, making the purchasing of the 'generosity' cheaper (than a bank transfer for example) and more spontaneous.

### 5.3. USE OF DIFFERENT MOBILE PHONE SERVICES PROVIDED BY PRIVATE ENTERPRISES

In the case of Estonia, it seems to me that we are valuing a little bit more practical things in mobile phones. For example paying with mobile phones and buying and booking tickets are becoming more and more popular, ordering various services (Woman 10).

Although the student essays pointed out the relative popularity of more pragmatic uses of mobile phones, which was also visible in the overview of publicly provided services, in the case of the services provided by private bodies, this tendency becomes less visible. Figure 4 shows that the general use of privately provided services except entertainment-oriented services is relatively low.

Remarkably different is the use of the ring tones and downloadable background images that is very popular among the youngest surveyed group. From the purchases category, the ring tones and background images are probably the most well known as they are also the most advertised service for the mobile phone. One of the reasons for the relative popularity is that these options serve as a means of personalization of one's mobile phone, which is very important in some groups.

For the young people at the age of 11-16 mobile phones are not mere utilities, but one of the signifiers of social status, with which you can attract others, develop conversation, classify/rate others (the fancier, more expensive phone, more various ring tones and background pictures, bigger phone bills, the better "class" you belong to), whereas those out of teenager years can and do use different functions of the phone actively, though they usually reduce it to two or three more important functions/possibilities (Woman 9).

In the Estonian context, mostly privately provided services are about information provision or retrieval, for example reading news and voting in TV and radio prize games, being more popular in the age groups of 15 and –19 and 20 and –29- year olds. Due to their popularity, such interaction possibilities are more and more used also in public service broadcasting, making its classification on the public-private scale more difficult.

Most of the privately provided services belong to the domain of m-commerce. From the users' perspective, they can have pragmatic or entertainment related purpose.

Making payments with the mobile phone for other kinds of goods is not very popular – used in average only by 8% of the phone users, but it is a service that has much higher readiness than the actual user base. Shops in remote areas are much more likely to accept mobile payments than credit cards. M-payments can rather be seen as an alternative to other ways of making transactions. Banks report that there are altogether 55 thousand contracts for mobile payments, but the actual amount of money transferred is small.

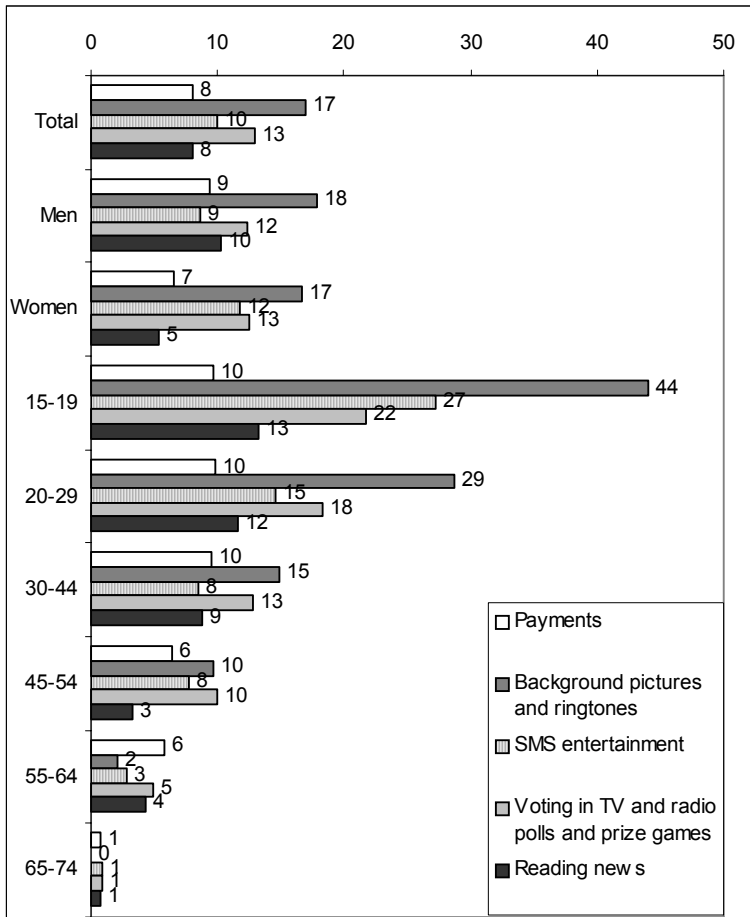


Figure 4. Frequent use of the private enterprises' mobile services, divided by gender and age groups

**6. Conclusions**

The lack of the mobile phone research in the context of the information society and IT studies characterizes the narrow scholarly approach to “the world of the ‘PC + Internet’” (Dentsu Soken, 2000:18). Internet as mostly been viewed as an information channel and mobile phones as interpersonal communication channels. Internet research has long overcome the metaphor of “information highway” and widened the discussion of Internet use. With this article we have demonstrated that mobile phones should no longer be viewed as solely interpersonal communication devices, but their use has expanded across different social practices. The mobile phone is no longer only a

communication device, but also can be one's your wallet, newspaper, notebook and music box.

Mobile phone use is also related to the issue of general information culture in Estonia. In the Estonian context mobile phones are not so much used as another platform to access web, but for providing the mobile phone services that surpass the Internet altogether and are stand-alone applications. Service providers are interested in providing mobile services, as mobile phones help get closer to particular individuals, as phones are more personal devices. Accordingly, also charging money is simpler. For example, when compared to the Internet, many service providers have opted for using mobile payments as a simple way out. It enables to charge smaller sums of money, so that a person does not have to bear the cost immediately, making spending easier. One does not have to give out credit card details or other sensitive information.

We can make some conclusions concerning the usage patterns of mobile phone functions and services in different groups. First, the usage varies mostly according to a particular application or service, where the most significant variable is age. Also, when looking at various services according to the provided classification scheme, the clearest difference appears on the scale of entertaining vs. pragmatic functions of the phone, where the phone use of the 15-19 year olds is most entertainment oriented, whereas the age group of 20-30 years old uses pragmatic services/applications the most. On the scales of information exchange to purchases and public to private, age is not a differentiating factor. Men and women do not differ in their user practices very clearly, except within particular services, for example men read more news than women, they use more parking service than women and in the case of mobile phone functions, men read e-mail and use phone camera more.

The data suggests that mobile phone use in Estonia has moved beyond interpersonal phoning and text messaging. Usage has become fragmented – the ways of applying it in everyday life varies substantially. The aim of the classification scheme introduced in the article is to critically study other classification schemes for mobile phone applications presented in other disciplines (technological platform-based, m-commerce-centered, communication model-oriented) in order to develop a scheme, where multiple functions of the mobile phone and services provided via phones are mapped from the perspective of usage. An outline of actually provided services within a particular time and geographical location has been used for that.

Although in this particular instance, the services analyzed give no definite answers to the user typologies, comparison in the demographic categories gives a reason to speculate that similarly to different types of computer users we could identify different types of mobile phone users and differentiate between them especially on the active-passive scale, but also on the pragmatic-entertaining scale presented in this article. In the future, the in-depth studies about mobile phone usage could use assumed user types as a starting point.

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# Computers and Internet Related Beliefs among Estonian Computer Users and Non- Users

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**Abstract.** This paper aims to look at the computer and Internet related beliefs among Estonian computer users and non-users. It uses data from two nationally representative surveys to analyze seven Internet and computer related beliefs. The paper also discusses how understanding the opinions of computer users and non-users should influence the policies of the information society. As a conclusion, policy suggestions on visibility of the technologies, digital literacy, and data monitoring needs are made.

**Keywords:** technology related beliefs, computer users and non-users, information society policy, adaptive theory

## 1 Introduction

As new technologies emerge and constantly outdate each other, it is difficult to imagine that only less than fifteen years ago, there was no internet connection in Estonia and that computers were highly specialized tools kept in labs. No one thought that usage and distribution of these technologies might become an important part of the notion of information society. Yet, nowadays, it is hard to imagine anyone living in Estonia who has not heard about these technologies. The Estonian case is interesting because of the simultaneous co-occurrence of several “revolutions”, alongside with the “singing revolution” contributing to the political collapse of the Soviet Union, Estonia witnessed a rapid turn towards capitalism and market economy. At the same time, international “technology revolution” also reached Estonia and flooded society with options and possibilities that were very positively received.

The aim of this paper is to look at the context of Estonian information and technology developments from the perspective of social informatics. Social informatics has

several different aspects – micro level of design and uses and macro level of institutions and societies. It also has many disciplinary backgrounds and as Rob Kling [1] puts it: “It is a field that is defined by its topic rather than family of methods”. Diversity of the disciplines and ever-expanding research objects makes social informatics somewhat difficult to comprehend; yet we need to learn many valuable lessons.

The aim of this paper is to look at the computers and internet related beliefs of the Estonian people and draw some policy conclusions from this material.

## 2 Theoretical context and focus of the study

One of the major problems with technology research is that it either is overpowered by political assumptions or hopes nicely referred as punditry [1] or that they are very empirical and lack theorization. Social informatics has been building the body of research over twenty-five years and has connected the ideas of empirical and theoretical research.

Derek Layder [2] is one of those who seek an answer on how to connect theoretical and empirical work. In his opinion, social theory often lacks the connection between well-grounded empirical research and more theoretical approaches. He proposes a notion of adaptive theory.

“The word ‘adaptive’ is meant to convey that the theory both adapts to, or is shaped by, incoming evidence while the data itself is simultaneously filtered through, and is thus adapted by, the prior theoretical materials (frameworks, concepts, ideas) that are relevant to their analysis”[3].

This paper tries to follow the ideas of the adaptive theory by first providing a conceptual framework for the data, by using the notions of social informatics and information environment. In the second half of the paper I will analyze the data with the help of the questions that social informatics asks and provide some policy suggestions. We can consider social informatics to be a very good example of what Layder considers as adaptive theory, as it is constantly revising itself in the face of the empirical material provided.

Social informatics has used the methods of the adaptive theory to help empirical material to understand better and often to overthrow some of the everyday beliefs that have received the status of theories, like for instance the direct effect theories [4]. One of the key aspects of the social informatics is to find and to stress the importance of the socio-technical character of the information technologies. The present study will investigate one aspect of the socio-technical network, namely people and their beliefs. We will look at the everyday understanding of the state of the information society in Estonia and the way it has changed in the years of 2002-2005.

Beliefs and attitudes are expressions of the human emotional disposition, subjective preferences and goals [5]. Beliefs are communicated through interpersonal communication or media; they can be acquired also though individual contemplation. Beliefs and attitudes do not guarantee behavior in desired direction, but rather reflect the overall disposition towards the topic. Therefore, we cannot conclude that positive beliefs will result in positive behavior. Investigation of computer and technology related beliefs shows a more general public opinion and helps to understand the cultural context of the technology adoption.

## 2.1 Focus on the information environment

Estonia is one of the fastest developing countries in Europe in the late 1990s. Its speedy developments in the field of electronic governance and internet in schools has influenced Estonian people. The general understandings of the technological developments have been supportive and that understanding has spread to individual use of the new technologies. Although the internet adoption rates are not as good as in neighboring countries such as Finland and Sweden, they are significantly higher than in other Baltic states [6]. That advantage has also supported Estonian's self-image as active and technology-savvy country.

There have been many discussions as to what contributes to such rapid developments. Estonian society has been welcoming different initiatives with open arms. Hence, the aim of this article is to look at one of the possible reasons as to why ICTs have been so popular in Estonia. There are number of different explanations as to what contributes to the social environment that is so encouraging for the take-up of new information technologies.

Social informatics helps us in asking the question about the cultural context of specific adoption process. Leah Lievrouw [7] in her article about knowledge dissemination in society defines *information environments* as social settings or milieux in which these resources, relations and technologies undergo a structuration-type process of change called *informing*. In her schematic model, she divides the environment into "an *institutional aspect* and a *personal/relational aspect*, which are closely related and interact" [8]. Looking at those different aspects of information environment enables us to locate a variety of factors that influence ICTs dissemination in culture-specific contexts. Government, businesses, and media provide the institutional aspect; individual beliefs, values and understandings as well as social networks like family, kin, and workmates constitute the personal/relational aspect. They are strongly influenced by one another and therefore very complex to research. From these different factors, this article focuses on the technology related opinions among Estonian computer users and non-users. Their beliefs provide one measurable aspect of the social and cultural context in which the adoption of new technologies takes place. It is important to understand that the technology adoption is not a once-off experience, but rather a repetitive cycle where each new application of the same, already adopted technology, needs to be re-adopted continuously. Beliefs and understandings form an important background for such a process.

I am going to compare the different opinions and attitudes among computer users and non-users. I think this is an important step in understanding the notion of human choice in computer and internet adoption as our opinions and beliefs strongly govern the way we behave. This paper is part of a larger study that uses longitudinal data to investigate Estonian people at the wake of the 21<sup>st</sup> century. Data gathered within this project is versatile and covers many areas of people's everyday life, media use, values, beliefs, relation to money, politics, culture, and to other people [9]. This paper only manages to introduce very few of the issues covered – namely internet and computers related beliefs, but I think they are very important ones to be considered when talking about the social and cultural context of the particular adoption.

### 3 Method

I will look at data from two representative longitudinal surveys conducted in Estonia – in late 2002 and early 2003 and late 2005. The survey was conducted in Estonia, with the representative sample of 1470 people in 2003 and 1475 in 2005. We collected data with a written questionnaire complemented by an oral interview. Interviewers left the respondents the survey booklet containing about 700 questions. In addition to that, interviewers agreed time to meet with the respondents, collect the questionnaire and ask additional 80 questions from those who qualified for the oral interview. The survey was conducted in 150 survey points across Estonia with the “youngest male method” where interviewers asked to speak with the youngest male member of the household and if he was not present, the youngest female was asked to participate. The survey was conducted within the age group of 15-74 and 500 of the respondents were Russian speakers (for more detailed information about the study see Kalmus, Lauristin, Pruulmann-Vengerfeldt [9]).

For the present paper, the following question asked from the respondents is most relevant: “With computers and internet becoming a part of everyday life, there are many opinions about them. Hereby we provide you a list of some of those opinions that have been circulating about computers and internet. To which extent do you agree with them?” The following options were given: “agree completely”, “agree to a certain extent”, “disagree to a certain extent”, “disagree completely”, and “I don’t know, don’t have an opinion” were given. In 2003, there were fourteen and in 2005, there were twenty statements in the survey. For the present analysis, I have divided the answers into three subsets: complete and partial agreements, complete and partial disagreements, and no opinion. I have selected seven variables that are comparable between the years and that I consider more related to the computer and internet adoption rates.

I will compare the answers of users and non-users of the computers as well as compare different years. For the purpose of this study, I define computer users as those who answered “Yes” to the following question: “Do you use a computer?” We asked the question with no specific definition of the use and without a timeframe, which leaves the definition of the use up to the respondent.

Statements that are under investigation cover both computer and internet use, but the variable we compare them against is only computer use. This is because the number of people who use computers, but do not use the internet is relatively small in our sample. In 2003, 48% of the respondents were computer users and 90% of them were internet users. In 2005, the level of computer usage has risen to 68,5% of respondents, and the level of internet usage has risen to 94% of the computer users. As the computer-use variable was used as the gatekeeper variable to the internet use question, then there is no information about those people who would say that they are internet users without actually defining themselves as computer users. We have assumed that the number of those people is very marginal.



#### 4 Internet related beliefs and opinions in empirical material

In Table 1, we have gathered information about seven statements that we asked the computer users and non-users to rate. The most significant difference between the users and non-users are that besides being more positive and optimistic about the internet and computers, in general, computer users are more opinionated. The number of computer non-users, who do not have an opinion about the statements, is remarkably larger than the proportion of computer users who are unsure about the given statement.

**Table 1:** Internet and computer related opinions of the computer users and non-users in Estonia, in 2003 and 2005

Statement	Year	Computer use/non-use	Agreement with the statement	Disagreement with the statement	Uncertain, don't know
Frequent use of computers and the internet is not good for your health	2003	User	53%	37%	10%
		Non-user	59%	12%	29%
	2005	User	56%	37%	6%
		Non-user	58%	8%	27%
The internet makes people to waste work and study time	2003	User	35%	60%	5%
		Non-user	31%	38%	30%
	2005	User	38%	56%	5%
		Non-user	39%	33%	21%
The internet enables citizens to influence politics more	2003	User	25%	55%	20%
		Non-user	14%	40%	46%
	2005	User	17%	64%	17%
		Non-user	13%	41%	40%
The internet alienates people from each other	2003	User	36%	54%	10%
		Non-user	41%	23%	36%
	2005	User	46%	45%	8%
		Non-user	42%	23%	28%
Using computers and the internet scares me	2003	User	5%	89%	6%
		Non-user	17%	49%	34%
	2005	User	9%	83%	7%
		Non-user	19%	37%	35%
All children must have the possibility to use computers and the internet as early as possible	2003	User	71%	24%	5%
		Non-user	64%	23%	14%
	2005	User	46%	45%	8%
		Non-user	37%	36%	20%
All people who don't have access to the internet are disadvantaged in all aspects of life	2003	User	54%	39%	8%
		Non-user	50%	28%	22%
	2005	User	53%	38%	8%
		Non-user	35%	37%	20%

These statements demonstrate the positive attitudes prevailing among the Estonian public. I will now discuss each of those statements separately.

Connection between internet or computer use with health issues is very common in everyday discourses in Estonia. People are mostly worried about their eyesight, but sedentary lifestyle of computer users is also an issue. Very common is the understanding that children who are using computers are not interested in participating in sports. Also in our sample, more than half of the people agree with the idea that frequent computer use may not be good for your health. The opinions about this statement show that more computer users have become to agree with that statement.

Wasting time with computers has been one of the negative attitudes among general optimism. We expected a rise in productivity, although social informatics studies elsewhere are not supporting this optimism [1]. Similarly in Estonia, people, who originally placed much hope on computers diminishing the workload and increasing productivity, found that people could do so many things with computers and the internet. People tend to start dividing their attentions and not concentrating on the issues of work alone. Results from the survey show that more than half of the computer users disagree with the idea that computers make you waste the time. The number of non-users who disagree with the statement has decreased over the years. The concept that new technologies are adopted in the context of the existing lifestyle is not new. Non-users who feel that meaningful activities fill their lives, they fear that using computers may make them waste the time they have now for other things like reading and spending time with the family. However, the levels of being uncertain about this issue have decreased quite significantly among the non-users, indicating that people who have remained non-users are more sure in their opinion whether ICTs are waste of time or not.

The next statement is strongly connected with the optimistic hopes that people have had towards the technology. Estonia's e-government is a very successful project that received much attention. For instance, Network Readiness Index has rated Estonia to the 5<sup>th</sup> place in e-governance index in 2001 and to the 8<sup>th</sup> place in e-governance index in 2002 [10]. Estonia has also a digital democracy project called Today I Decide (TOM in Estonian) that received much media attention at the time of its creation in June 2001. It is possible to see disappointment of the computer users in this system – the number of computer users who believe that internet enables citizens to influence politics has dropped and the number of those who disagree with the statement has risen.

Discussion that has received a lot of attention from social scientists is the issue of alienation and social capital of the internet users [11, 12]. Different reactions have made this issue to be on the top of the internet related agenda for quite some time. The data reveals that in 2003 more than half of the people who used computers did not believe that computers cause alienation, but in 2005, the percent has dropped below half. At this point, it is difficult to say what causes this: changed opinions, changed experiences, or enlarged user-body are probably all part of the explanation.

A number of people are hesitant to adopt new technologies because they are scared of them. People might be afraid of the consequences of technology adoption or fear that they look stupid or that they might break something. In our sample, it is interesting to see that the number of people who are afraid of using ICTs has risen

among the computer users and declined among the non-users. It may be that the pressures in the society to apply new technologies are so remarkable that people are adopting them in spite of their fears and use of the technology has not made them overcome their fears

In recent years the debate of computer addiction and children has become livelier in Estonia. The result is that 73% of the population thinks that children's computer addiction has become a serious problem. The replies to the question of whether children must have early contact with the computers also reflect this. The percentages of people who agree with this statement have declined among the computer users and the non-users.

In spite of the pessimistic and cautious beliefs, more than half of the computer users believe that people who don't have access to the internet are disadvantaged in their life. The number of non-users who believe the same thing has decreased and partially probably because they are computer users now.

With the negative statements, the health related statement is the only one where more than half of the people agree with it, be they computer users or not. All other negative statements have less than half of the population supporting them. On the other hand, the positive statements receive also less than half of the population's support. It shows there is overwhelming agreement does not exist with either positive or negative attitudes. However, in general, computer users are more inclined to have positive beliefs towards the information and communication technologies, whereas non-users have more people among them who are uncertain.

## **5 Implications for the information policy of Estonia**

Most of the statements under investigation here are common day-to-day statements that circulate between people, in public and private texts. It seems that although people sometimes consider Estonia very optimistic and positive in attitudes towards the internet and computers [13, 14], the data indicates that the optimism is not so overwhelming. There are several policy lessons we can learn from these findings.

Without wanting to go too deeply into policy analysis, I would still like to draw a few conclusions from the current study that the Estonian information society policy could find useful. Estonia is currently in the process of formulating new principles in the information society policy for the years 2007-2010. This is the first policy document where active involvement of the researchers has been encouraged and enabled. Previous policies have been technology and economic centred [15, 16] whereas there is a strong possibility that the policy document under construction will also consider human and social aspects of the new technologies.

Firstly, we consider a lesson that is strongly connected to Roger's [17] theories about diffusion of innovations. It is clear that information about the innovation is very important. The fact that approximately one fifth of the non-users doesn't have an opinion about the statements that were provided shows that there is still not enough information, not enough possibilities to observe other people using information and communication technologies. If information policy-makers are

interested in influencing the human choice towards adopting new technologies and government-provided services in new media environment, they must foster a well-balanced and open information environment.

Today, the ICTs related information provided by the government is hectic and inconsistent. It is also not focusing on the day-to-day usage by the individuals, thus not providing the necessary observation moment for the non-users. There are different possibilities for local or state government to promote their own services in a way where use of those services can be observed publicly and therefore people would be more inclined to try themselves. However, the indifference towards a technology might mean that people generally ignore the public messages about technology related activities and might therefore be more difficult to reach. For them, the educational aspects of the information environment may be available through the personal aspects of their information environment where friends and relatives can become proxies for mediating the ICTs related information provided by different institutions.

Second, a policy lesson that can be learned is that the issue of young children's use of computers and internet is something that needs even wider public discussion and probably some political decisions. Children seem at risk from computers and internet and often parents even do not know how to help them. Information society policy should acknowledge the concern and find ways to support parents in their attempts to regulate children's exposure to new information and communication technologies. Thus, information society for all needs clear political activities to provide digital literacy not only in a way to be able to use technologies, but also to interpret the content accessed by those technologies in a safe way. The role of the policy makers is to make sure that digital literacy skills are included in the school programmes and that they are meaningful and helpful for all different levels of user competences and abilities.

Another idea that can be taken to policies outside Estonia is that monitoring these kinds of opinions and understandings through surveys can help to see how they are changing, what is on agenda and what concerns people have in relation to the technology. The set-up of the current study was the following – for the first questionnaire we devised our questions based on an international survey (World internet Project [18]) and modified them to suit our survey. In 2005, however, we took the same questions, removed some that had vague wording and added new ones that we had derived from media analysis. Media, especially traditional media that is most popular for that particular cultural context, is an important source for information in today's mediated world and sometimes it seems that computer and internet studies do not pay enough attention to the content of "old" media. At least in Estonia, where for instance newspaper readership is relatively high, the press is a very important shaper of the public opinion.

## **6 Conclusion**

Researching the internet and computer related beliefs and opinions, gives an important insight into human choice and ICTs. It shows some underlying principles

that people use in their decision making whether to adopt new technologies or not. The more complex the technology under investigation, the more important the issue of knowledge about the innovation becomes. In order to understand the human choice in the question of information technology adoptions, understanding attitudes towards the common beliefs related to that technology is a first step. The complexity of the information environment exposed to modern people is too large to address in only one paper. This study is only part of a larger project that investigates the different aspects of the institutional and personal information environment.

There are several policy lessons that we can learn from the study, mostly showing the key aspects of the concern by the public, but also helping to understand the factors underlying the decisions people make in relation to the information technologies. Today, data about the beliefs in the different countries is relatively difficult to access and probably not available at all in many cases. However, knowing the stronger currents in public opinion related to information and communication technologies would make the information society more accessible and understandable for all. Having material for international comparison would give better understanding of the different factors in shaping the social and cultural context of the particular technologies adoption.

Social informatics is a good example of adaptive theory that helps us to understand that empirical research, theoretical generalizations, and policy lessons are all strongly interconnected; we cannot and should not consider them in isolation.

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# Exploring social theory as a framework for social and cultural measurements of the information society<sup>1</sup>

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## Abstract

Using Layder's domain theory (1997) as an analytical framework, this paper shows how the information society can be measured through various levels of society. Layder's notions of psychobiography, situated activity, social setting, and contextual resources help identify cultural and social indicators for understanding changes in the information society. With the help of empirical indicators for each domain, this paper uses the case of Estonia to show that there is often more to the information society than what is captured by traditional measures. This paper calls for a context-sensitive approach, which takes into consideration social and cultural indicators. Measurements from all four domains are necessary for understanding the complexity of information society related issues.

**Keywords:** information society measurements, domain theory, social and cultural aspects, Estonia

## Introduction

Metrics used for measuring the development of the information society tend to be technology-centric. As Mansell (2002) points out, in most cases, the benefits of the technology are assumed, although there are no grounds for such assumptions. In the same vein, Heinderyckx (2003) shows how the Internet adoption rate (often used as one of the core indicators of the development of information society) can give mixed and problematic results. Petric, in this special issue of *The Information Society*, provides a critical overview of digital divide measures, pointing to an overly technology driven approach. Duff analyzes the use of the information society concept in academic and everyday literature and summarizes the problem:

The information society thesis must be in some sense an outcome of the Boolean equation, Information AND (Work OR Flows OR Technology) AND Society. It is therefore incumbent on information society theorists to articulate the nature of the relationship between information and society, and in this

matter, too, they have for the most part been remiss. For example, a typical formulation of the information technology version will simply point to a mass of empirical data concerning IT applications in the home or office, and then proceed without further conceptual ado to talk about the information society! (2001: 235)

Webster (1995, 2002a, 2002b) groups various theoretical viewpoints into six categories — technological, spatial, economical, occupational, cultural and holistic — and criticizes all but the last one.

...they [those who argue that an information society has arrived] seek to identify the information society by counting phenomena which they assume characterise the new order. These may be information technologies, the economic worth of information, the increase in information occupations, the spread of information networks, or simply the obviousness (and hence not needing to be counted) of an explosive growth in signs and significations (Webster, 2002a, p. 272).

When a technology is regarded as the prime initiator of change in society, measuring the changing technology might seem to be enough — we just “count the number of connected computers” and then we can tell from that how advanced a society is. However, as many theorists (e.g Braman, 1989; Mackay, 1995; Dutton 1999; Wyatt *et al*, 2000) have pointed out, society is not exclusively — if at all — driven by technology; thus, measuring computers, cables, and connections tells us very little about the actual state of society. According to Mansell and When (1998) “these technologies do not create the transformations in society by themselves; they are designed and implemented by people in their social, economic and technological contexts” (p. 12). In order to understand the information society, we must go beyond measurements of the diffusion of pieces of hardware and even increase of information in stocks or flows and investigate the social context within which these developments are taking place.

This paper provides an overview of an approach that attends to how people’s everyday lives are changing with new technologies — what has changed in their opinions, values, lifestyles, and life contexts. It draws on the work of Derek Layder who rejects the possibility of “binding together of agency and structure and macro and micro elements” (Layder, 1997, p. 228). Layder emphasises the interconnectedness of different aspects of social life. Instead of trying to seek a balance between structure and agency, he proposes that society should be studied and understood within four analytical domains through which everything is bound together — “psychobiography,” “situated activity,” “social settings” and “contextual resources.” The psychobiography domain focuses on personal attitudes, values, and understandings of identity and behaviour. Situated activity is characterized by communication situations between people. Social settings are the locations where situated activities take place – workplace, school, home, street and so on. Contextual resources deal with power,



domination, discourses and practices that underlie society (Layder, 1997). Layder emphasizes that all of these domains are interconnected and should not be examined in isolation.

This approach is illustrated via a study that was conducted in Estonia, a unique case for investigating the information society. This small country of 1.4 million people has one of the fastest developing economies in the former Soviet block and an ICT infrastructure that is more advanced than that of some EU countries (Bogdanowicz *et al.*, 2003). While Western countries have had to deal with issues related to the post-industrial or post-modern society as they move into the information age, the process has been even more complex in Estonia and other former Soviet republics because they have had to also manage the transition from a totalitarian system to more open societies.

The changes in the political structure made many information society-related processes possible. Opening of the “iron curtain” allowed the import of new technologies, often prohibited in the Soviet era, into Estonia. They also necessitated a lot of new legislation, which was designed and adopted in accordance with the latest developments to ensure that the laws would not hinder technological development. Successive governments in Estonia have paid varying attention to new media technologies. The youngest European prime minister Mart Laar was very interested in new technologies and they were a high priority during his second time in office (1999–2002); other governments have paid less attention. Nevertheless, Estonia’s paper-less government is the most advanced e-government project, and Estonian information laws and policies are considered to be some of the “best” in the world (Vengerfeldt and Runnel, 2004).

Another important factor in the development of the information society in Estonia was the collapse of the communist era financial system with the fall of the Soviet Union. The development of a new banking system from scratch allowed for the easy adoption of the state-of-the-art electronic banking technologies (Kerem, 2003). Electronic services in Estonian banks have been successful not only in the range of services they provide, but also in their popularity among customers. Banks have played an important role in training new Internet users for e-banking since it reduces their costs. Currently, the Estonian government is working on a third information policy, which aims at consciously facilitating development towards an information society.<sup>2</sup>

## **Estonian Study**

In this study we operationalized Layder’s four domains in order to understand the social and cultural changes in the information society. In doing this, different levels of analysis were used mostly as examples of the possible analytical entry points. The measures discussed here range from broad and

general to specific and context-sensitive, in order to show the variety of factors that can be examined when measuring the development of the information society.

Data presented below is mostly quantitative, originating from three different nation-wide studies, but there is also a more qualitative data set from a pilot study on the representation of information society in the largest daily newspaper in Estonia. The different measures vary from easily quantifiable and regularly measured, to qualitative and rarely comparable.

Three large-scale surveys were conducted by the University of Tartu and Södertörn University in the years 2002, 2004 and 2005. The first of the three representative surveys was conducted between December 2002 and January 2003 by a group of researchers at the University of Tartu (Kalmus, Lauristin, and Pruulmann-Vengerfeldt, 2004). One thousand Estonian and 500 Russian speakers were surveyed via a written and oral questionnaire covering more than 800 variables. The respondents were randomly selected from 150 survey points all across Estonia, and the sample was representative of the whole population. Respondents were visited twice — first they were given the survey booklet and a follow-up visit was arranged, then their completed survey booklets were collected and additional interview questions were asked. The third survey in 2005 was also from the same research group using similar research methods and was partially based on a longitudinal sample from the initial survey. However, data introduced here do not reflect the longitudinal nature of the research project.

The second survey was a follow-up study to the initial survey, conducted by Södertörn University in October 2004. Some similarly worded questions were used with another representative sample of 1500 people; approximately 400 variables were covered.

The qualitative data on *Postimees*, the Estonian daily newspaper with the largest circulation, comes from a pilot study conducted in cooperation with Rica Semjonova. In this study a sample of 300 articles from the 1995–2002 period were examined to identify major trends in the coverage of information society related topics. Articles were analyzed and grouped into major themes discussed below.

Although I propose a number of characteristics that should be taken into account, it is not possible at this stage to specify a quantifiable threshold of change in any category that would be enough to signal the arrival of the information society. These characteristics should be treated as additional social and cultural measures, which can complement existing measures and provide a more comprehensive understanding of the changes.

### **Psychobiography**

Layder's notion of **psychobiography** covers many socio-demographic variables that are traditionally used in information society measurements, especially in digital divide research (see, for instance, Katz and Rice, 2002; Norris, 2001;

Servon, 2002). However, it should be kept in mind that these measures are far from sufficient for understanding the processes affecting society. Heindreyckx (2003) critically reviews some psychobiography measures that are used in information society measurements and points to a number of difficulties related to them. It is therefore important to also look at values, skills, individual capacities, interests, and affinities. Besides using traditional survey methods to research these categories, I also include text analysis and interview techniques, to better understand the interests and capacities of particular individuals or groups. For the purposes of this paper, I examine the attitudes towards technology and the role technology plays in society, to illustrate information society-related changes in the psychobiography domain.

In popular discourse, people are often labelled “technology-savvy”; some times even nations are described this way, especially neighbouring Finland. In order to identify the technology savvy people, a measurement of the general attitude towards technology is very important. Table 1 shows some questions wherein Estonians were asked to evaluate technology-related changes. The data shows that overall Estonia is very technology-optimistic. People like technology-related changes, think of the Internet as a tool that is necessary for all life situations and believe that new technologies make the world better.

*Table 1: Attitudes towards technologies and technology-related changes, % of the population.*

<b>If you think of changes in Estonia in last five to ten years, how do you rate changes in technology, use of new machines and technologies?</b>		
	<b>2003</b>	<b>2005</b>
Positive and very positive	82	84
Negative and very negative	6	5
I don't know, haven't thought about it	12	11
<b>With the arrival of the computers and the Internet in everyday life there is also a multitude of different opinions about them. To which extent do you agree with the following claim: people who don't have access to the Internet are in the worse situation in all aspects of life?</b>		
	<b>2003</b>	<b>2005</b>
Agree and agree completely	52	49
Disagree and disagree completely	37	39
I don't know, haven't thought about it	15	12

I would argue that one of the conditions of an information society is a positive attitude towards technology. When information technologies are viewed as positive and necessary additions to one's everyday life, then it is much easier to promote their adoption and use. Optimism about these technologies is also reflected in public opinion, as the section on contextual resources will show.

## **Situated activity**

Layder considers the domain of **situated activity** to be a very important addition to the structure–agency debate. This is the context in which people interact with each other. Layder’s notion of situated activities could be the ethnographic studies of media, especially those related to domestication processes whereby technology is appropriated through its use in everyday life (see for instance Silverstone & Hirsch, 1992; Berker *et al*, 2006). The limitation of domestication studies in my opinion comes from the lack of a broader context, i.e. connections to other domains. It is problematic to look at the layer of situated activity in isolation. However, when the results of domestication studies are placed in a larger context, they can also be used for information society measurement. Information on the larger context can be obtained from media and policy analysis or through survey.

For the purposes of this paper, I will look at the role of technology-related activities in lifestyle types, in order to illustrate the domain of situated activity.

Layder’s definition of situated activity deals more narrowly with the face-to-face interactions of people, but there are other instances for seeking an understanding of Internet users and non-users’ situated activity. As new technologies do not get adopted on an empty canvas, looking at existing lifestyles can aid the understanding of the context within which ICTs are adopted. As Bourdieu observes, “social space tends to function as a symbolic space, a space of lifestyles and status groups, characterized by different lifestyles” (Bourdieu, 1990, p. 133).

Expanding Internet adopter categories beyond traditional socio-demographics or innovators-laggards scales (Rogers, 1995) helps us to better understand the context and nature of adoption. For the purpose of this analysis, lifestyle types are based on a cluster analysis of 30 activity-related questions. The lifestyle variables (e.g. do you go to movies, theatre, engage in various hobbies etc.) were clustered using the K-means cluster analysis method. A number of cluster groups were investigated, but the most comprehensive solution had eight clusters. This solution was also similar to a factor analysis of the same data (Nigul, 2003). Table 2 gives an overview of how one of the cluster analysis components — How often do you engage in computer related activities (games, chat rooms, creating programmes, web pages, music etc) — relates to the lifestyle clusters. The data indicate how often different lifestyle types engage in the use of computers. The context of this question is mostly related to free- or leisure- time activities and does not look at the computer usage in any specific context.

Table 2. Lifestyle types engagement in computer related activities, % of the group.

	How often do you engage in computer related activities (games, chat rooms, creating programmes, web pages, music etc)?				Total % of respondents in this lifestyle cluster
	Often, regularly	Sometimes	Rarely	Never	
Active lifestyle	56	28	9	7	9
Work and culture oriented lifestyle	19	21	21	39	15
Thrill and entertainment oriented lifestyle	38	26	17	19	5
New media and socially active lifestyle	47	26	16	10	13
Home-centred, traditional lifestyle	2	9	6	83	15
Technology and hobby-centred lifestyle	16	22	18	43	14
Reading and book-centred lifestyle	2	7	8	83	13
Very passive lifestyle	2	5	7	86	17
% from total population	19	17	13	51	100

We can see that among the eight lifestyle types, three use computers more often than the others: the active lifestyle, the thrill and entertainment-oriented lifestyle, and the new media and socially active lifestyle, accounting for 27% of the population. Overall, there are other lifestyle groups where a large majority of people never use computers (accounting for 45% of the whole population).

Using lifestyles as an indicator for adopter categories helps us to better identify which segments of the society have not yet found use for information and communication technologies. I am assuming that the goal for any country working towards an information society is to maximise the use of the technologies across the whole population. Researching different lifestyle indicators, we can see that there are people who are highly unlikely to adopt technologies, even when the possibility is presented to them, as it is difficult for them to see computers as part of their lifestyles. In Estonia the more traditional lifestyles are associated with population groups that are generally viewed as problematic in the context of technology adoption. So, for instance, a reading and book-centred lifestyle is most common among Russian-speaking women and finding situated context that would help them see the need for new technologies is very difficult.

In the discussion about the Estonian context, I also talked about the role of banks in the recruitment of Internet users in Estonia. In a sense, banks have provided contexts for situated activity to foster Internet adoption through the

generation of real-life situations where the usage of the Internet can visibly advance and improve everyday life. By reducing the staff in their offices, banks precipitated a situation where the situated activity in making a bank transaction in the actual bank was far more unattractive than the situated activity of bank transactions online.

I am assuming that one of the possibilities for enlisting people with well established and non-Internet related lifestyles to the Internet would be to improve through Internet usage some negative situated activities that they encounter.

### **Social settings**

The next domain, **social setting**, is summarized by Carlsson (2003) as: "...things like the culture of the organization, artefacts like ICT-based IS that are used in situated activities, power and authority structures...not just particular patterns of activity" (p. 13). Together with the next category of contextual resources, this is similar to Robert Taylor's (1991) work on the information use environment, where he seeks to identify the elements that "affect the flow and use of information messages" (p. 218) and "determine the criteria by which the value of information messages will be judged" (p. 218). His work has been taken up by many people attempting to understand the different impacts of information and new technologies. Also Menou (1993) uses the information use environment as a model and expands a list of components developed for researching these two domains.

The social setting can be computer-mediated in the context of discussions and interactions. With regard to information society measurement, the social setting can be measured through computer adoption in the workplace, through the availability and use of Open Internet Access points, and the availability and use of computers amongst friendship groups. One of the major discussions in the early computer-mediated communication literature is mostly related to use of chat-rooms and online multi-user games (see for instance Turkle, 1997; Jones, 1998). The use of chat-rooms has never been very popular among the general population,<sup>3</sup> yet discussion on how the use of computers changes communication is very prominent in this literature.

A measurement that seems important to me is the evaluation and use of instant messaging technologies. This measure can be seen to be a much more important tool of computer-mediated communication than chat-rooms that are not very widely used. Instant messenger technologies are part of the social settings of people and "places" in more and more communication situations. Table 3 shows changes that have taken place in Estonia over a period of 3 years. When we look at changes in the number of people for whom instant messaging technologies have become part of the social setting, then we might conclude that Estonia has definitely moved towards an information society.

Table 3: Frequency of using MSN, ICQ or other instant messenger, (% of the population).

	Often	Sometimes	Never	NA1
2003	6	7	42	58
2004	23	8	22	47
2005	35	8	29	36

My argument here is that a high level of use of instant messaging technologies indicates that computer-mediated communication has become an important social setting for discussions, thus making this an indicator of the advancement of the information society.

In the initial survey in 2003, the instant messaging technology was of marginal importance, used mostly by the youngest surveyed group. By 2005, the use of instant messaging reached one-third of the whole population and its use spread through different groups. Some of the qualitative data we have gathered indicates that instant messaging is not only a tool that brings together social groups, but it is also helping different generations (children and grandparents) and different social hierarchies (bosses and employees) to communicate more often. This kind of informal communication can reduce hierarchies and foster development of social capital.

### Contextual resources

The largest and most macro-level domain is the one of **contextual resources**. This domain encompasses the overall societal context in which we work and act. It includes the legislative and economic environment, which supports or hinders advancement of the information society. Contextual resources are often considered to be the most important factors of information society development and, therefore, they are quite often measured. In the context of information society measurement, contextual resources include the availability of the Internet, broadband access and speed of international connections, and the legislative environment — laws that support information society developments and so on. The legislative and economic indicators are often measured as part of different indices (Vengerfeldt and Runnel, 2004). On the other hand, media, which are also important part of the contextual resources and play an important role in information society development, are not researched. Therefore, I would argue that a media analysis of some kind is also an important indicator of the cultural and social measurement of the information society.

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1 The high number of NAs is due to the fact that this question was only asked of people who answered ‘yes’ when questioned whether they used computers.

The scope of this paper does not allow a very detailed analysis of the Estonian media as an aspect of contextual resources development, but I will attempt to give a brief overview. Even if we have abandoned the idea of media effects as a one-way process, researchers have barely explored the importance of media as shapers of the information society. Yet, media analysis should be an important part of social and cultural measures of the information society.

The media have a very clear role in shaping the information environment, as the majority of a contemporary person's experiences and knowledge is mediated. The media have given much coverage to information society related issues in Estonia and have strongly influenced the positive attitude of Estonians towards information technology. The information society and information technologies have been depicted as a way forward, towards 'Europeanness' for Estonia, and as an escape from the past Soviet era. Table 4 outlines four major types of information technology-related discourses in the Estonian media. In the first theme, Internet use is depicted as a key ingredient for success and a happier life in modern Estonia. It is important to remember that, for Estonia, the progressive move into the information society came together with freedom from the Soviet Union. Therefore, the discourses of capitalism, free market, and free society are strongly connected to those of the technologies. Keller (2005) describes how the notion of freedom is connected with mobile telephone technology through the context of advertisements. Similarly, freedom is connected to information technologies in everyday Estonian rhetoric. Three of the dominant discourses look at the positive aspects of new technologies. The negative discourse of the "dangers" theme is in some respects indicative of the importance of the new technologies in everyday life, with Estonians being "scared of people using too much of the new technology".

*Table 4: Four dominant discourses of information technology and information society in Estonian largest daily newspaper Postimees (1993–2002)*

<b>Theme</b>	<b>Description of the content grouped under this theme</b>
1. Constructing the "winners" and the "losers"	Describes Internet users as winners of E-Estonia and non-users as laggards and losers. It typically includes quantitative measures.
2. Dangers	Brings half-tones to the winners/losers discourse, by illustrating the dangers of the Internet (e-crime, regulative aspects, dependency or over use by children).
3. Potentials	Describes research related to potential users and potential profit brought to investors.
4. The future	Includes the somewhat technologically deterministic notion whereby computers and the Internet are seen as changing the environment, and bringing balance and new directions.



These discourses are in general happy and optimistic, and geared towards very positive attitudes for an Estonian information society. The four areas outlined above strongly influence the contextual resources for an Estonian information society, and provide a backdrop to the individual actor and his/her participation in the development of the information society.

Media research could explore contextual resources to provide very interesting insights, and in some aspects the media are still quite under-researched. In spite of the fact that many Internet researchers have worked in media research previously, media coverage of information society issues has had very little impact in the theoretical or empirical literature. Yet, media coverage can be an important indicator of public perceptions and institutional discourse about the new technologies. In Estonia, media coverage is mostly positive and optimistic in its tone. But, for example, in Hungary there was a case where a bomb in a streetcar was associated negatively with the Internet. The justification for the negative association was “Everyone can learn to make bombs from the Internet”, although the actual bombing had nothing to do with new technologies. This shows that countries with very similar economic and political backgrounds can take very different routes in development, for different cultural and social reasons.

## **Conclusions**

More often than not, the information society metrics are based on technology adoption. This paper aimed to use domain theory to identify additional windows through which we might observe and measure the information society.

Through an understanding of different domains in operation in society: individual, social context, situated activities and contextual resources, we can gain a comprehensive understanding of the constant interactions between various components of society. In order to understand the qualitative change towards the information society in different domains, this paper argues for the addition of social and cultural measures to traditional ones.

In this paper, different sets of data were used to illustrate the four domains of society. I would argue that the multiplicity of methods makes international comparison more difficult, but gives far better evaluation in the context of individual countries. Using qualitative data such as media analysis, interviews and policy analysis adds important aspects and a context to survey data.

This paper covers only a selection of possible indicators and has probably left many questions un-answered and raised a good few more. The examples in each domain show the benefits of additional social and cultural dimensions. Connecting the measurement of the information society to social theories helps us to see other important points of departure for research.

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## Notes

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<sup>2</sup> Praust (1998) identifies the following five principles for the development of an information society in Estonia:

1. A society where the bulk of information stored by the humanity is kept, transformed and transmitted in a universal digital form by means of certain devices (successors of the present computers).
2. A society where people have entrusted to machines both hard physical work and routine mental work, leaving only creative mental work to human beings.
3. A society where nearly the whole world is linked by means of a unified information transmission network — the successor of the present Internet—capable of transmitting, at an adequate speed, all sets of information necessary for human activities.
4. A society where the majority of values created by humanity are contained in information (Section 1.2).
5. Information society is a society where the activities of man are designed as rationally as possible, basing on the above principles.

<sup>3</sup> Data from the University of Tartu surveys shows that people frequently participating in the chat rooms in 2005 were only 10% of the Internet users accounting to 6% of the total population.

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2001–2003 Projektijuht, ajakirjanduse ja kommunikatsiooni osakond,  
Tartu Ülikool  
Jaan.–Okt. 2003 Külalisteadur, Marie Curie Fellow, Dublin City University,  
Iirimaa  
Nov.–Dets. 2004 Külalisteadur, Konstanzi Ülikool, Saksamaa  
Jaan.–Veeb. 2005 Külalisteadur, Brüsseli Katolik Ülikooli, Belgia  
2003– ... Teadur, meediauuringute õppetool, ajakirjanduse ja  
kommunikatsiooni osakond, Tartu Ülikool

## **Erialane enesetäiendus**

Mai 2001	<i>Diskursus ja interaktsioon arvuti poolt toetatud ühisõppes</i> , Nordic Interactive Doctoral Summer School, Oslo, Norra
August 2001	<i>Marketing küberruumis</i> , Helsingi Ülikool Suvekool, Helsingi, Soome
August 2002	<i>Public Access and Interactivity in the Digital Age</i> , Intensive Programme for Doctoral Research in Communication, Westminsteri Ülikool, London, Suurbritannia
Juuli-August 2003	<i>Doctoral Summer School</i> , Oxford Internet Institute, Oxford, Suurbritannia
Juuni 2004	<i>Today's research training — tomorrow's scientific quality</i> NORFA doktoriõppe suvekursus, Druskininkai, Leedu
August 2004	<i>Media industries in changing Europe</i> , Intensive Programme for Doctoral Research in Communication, Helsingi Ülikool ja Tampere Ülikool, Helsingi, Soome

## **Teadustegevus**

### *Peamised uurimisvaldkonnad:*

Infoühiskonna teooria ja praktika. Kuidas inimesed kasutavad info- ja kommunikatsioonitehnoloogiat, kuidas seda mõtestavad ja millised on infotehnoloogiate poolt pakutavad kasutegurid igapäevaeluks. Infoühiskonna poliitika Eestis. Infotehnoloogiate mittekasutajad ja nende kaasamine

Uudised Internetis ja muudes digitaalsetes keskkonnas — uudiste vastuvõtu praktikad ja vastuvõtukeskkonnast tulenev lisaväärtus

Interneti kogukonnad — võimusuhted, tüpoloogiad, infovood.

### *Kuulumine erialaorganisatsioonidesse:*

European Communication Research and Education Association (ECREA),  
Young Scholars Networki president  
The Association of Internet Researchers (AoIR)