



Digital Divide In Estonia and How to Bridge It

Editors:

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Emor and PRAXIS Center for Policy Studies

Tallinn 2002

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This report was prepared at the order, with funding from and in direct partnership with **the Look@World Foundation, the Open Estonia Foundation, and the State Chancellery.**



Co-financers:

The study was co-financed (partial research, pdf-publications, PRAXIS' Policy Analysis Publications, distribution) by the International Bank for Reconstruction and Development (IBRD) for the Information for Development Program (infoDev) by a grant to the PRAXIS Center for Policy Studies for ICT Infrastructure and E-Readiness Assessment (Grant # ICT 016).

The translation into Russian and English, and publication of the web-version was supported by the Open Society Institute – Budapest.



Contractors:



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ISBN: 9985-78-736-6

Layout: Helena Nagel

EXECUTIVE SUMMARY**Mari Kalkun, Tarmo Kalvet, Daimar Liiv, Ülle Pärnoja 6**

- 1. Objectives of study 6
- 2. “Blue collar” individuals and “passive people” are distinguished among non-users of the Internet 7
- 3. Main barriers of non-users of the Internet 9
 - 3.1. Motivational barriers 9
 - 3.2. Skill barriers 9
 - 3.3. Access barriers 10
- 4. Recommendations 11
- 5. Structure of report 12

PART I: BACKGROUND AND RESULTS OF STUDY 13**I. INTRODUCTION**

- Mari Kalkun, Tarmo Kalvet 14**
 - 1. Background of study 14
 - 2. Objectives 14
 - 3. Methodology 15
 - 4. Structure of report 17

II. ESTONIA'S ADAPTATION TO ICT BASED SOCIETY

- Tarmo Kalvet 18**
 - 1. Change in techno-economic paradigm 18
 - 2. Estonia in a whirlpool of changes 21
 - 3. Internet penetration in Estonia: a theoretical background 24
 - 4. Internet penetration in Estonia 25
 - 4.1. Influence of Nordic countries 25
 - 4.2. Telecommunications market and Internet 26
 - 4.3. Modernisation of the education sector 28
 - 4.4. Internet based applications 28
 - 4.5. Public Internet access points 28
 - 5. Digital divide in Estonia 30

III. SUMMARY: BARRIERS TO INTERNET USE IN ESTONIA

- Mari Kalkun 31**
 - 1. Motivational barriers 31
 - 2. Skill barriers 32
 - 3. Access barriers 34

IV. RECOMMENDATIONS FOR IMPROVING INTERNET PENETRATION

- Tarmo Kalvet ja Daimar Liiv 35**
 - 1. Introduction 35
 - 2. Motivational barrier 36
 - 2.1. Nature of barrier and its relation to the groups 36
 - 2.2. Recommendations for overcoming the motivational barrier 38
 - 3. Skill barriers 41
 - 3.1. Nature of barrier and relation to the groups 41
 - 3.2. Recommendations for overcoming skills barrier 42
 - 4. Access barrier 43
 - 4.1. Nature of barrier and relation to the target groups 43
 - 4.2. Recommendations for overcoming the access barrier 44

PART II: STUDY REPORTS..... 47

V. SPECIAL ANALYSIS OF E-TRACK

Kristina Randver 48

1. Introduction48

2. The number of computer users has remained relatively stable over recent years49

3. There are 591,000 non-users of the Internet51

4. Home computer penetration has rapidly increased over recent years.....54

VI. FOCUS GROUPS SUMMARY

Mari Kalkun 58

1. The Internet is not perceived as a means of seeking information for personal purposes58

2. The cell phone is the biggest rival to the Internet as a means of communication in Estonia59

3. Only Internet banking is seen as a virtual partner in the management of affairs59

4. Lack of need as the main reason for non-use of the Internet.....60

5. Lack of opportunities and skills are reasons for light use of the Internet60

6. PIAPs are associated with children and other skilled users61

VII. STUDY OF VALUE ORIENTATIONS OF NON-USERS OF INTERNET

Mari Kalkun 62

1. Introduction62

2. Non-users of the Internet.....62

3. Positive qualities of the Internet.....65

4. Which functions of the Internet would non-users like to use?67

5. Reasons for not using Internet.....68

6. How to reach "Passive People"?69

7. How to bring the "Blue Collars" to the Internet?69

8. "Experimenters" will very likely find their way to the Internet themselves71

VIII. ESTONIAN EXPERTS' VIEW OF THE PROBLEM

Andre Krull 72

1. Assessment of General Developments72

2. Digital Divide in Estonia73

3. Recommendations76

4. Prognosis of Estonia's development78

REFERENCES 79

ANNEXES 82

ANNEX 1: PUBLIC COMPETITION ANNOUNCEMENT OF OPEN ESTONIA FOUNDATION 83

ANNEX 2: DESCRIPTION OF E-TRACK SPECIAL ANALYSIS METHODS

Kristina Randver 85

1. Sample.....85

2. Fieldwork.....86

3. Data processing.....86

4. Confidence limits86

ANNEX 3: TABLES OF RISC STUDY OF VALUE ORIENTATIONS

Mari Kalkun 87

ANNEX 4: FOCUS GROUPS REPORT

Mari Kalkun 95

1. Method96

2. Results98

EXECUTIVE SUMMARY

Mari Kalkun, Tarmo Kalvet, Daimar Liiv, Ülle Pärnoja

1. Objectives of study

Digital divide¹ is an acute issue when speaking about the development trends of information society both in developed and developing countries. As the present change is a wide-based one that arises from information technology, the task to diminish the size of the population group whose adjustment to the technological change is slower (i.e. the task to bridge the digital divide) has both economic and social implications while it remains the only way to guarantee sustainable development. But if the problems of this group are ignored, a part of the population would effectively be excluded from actively participating in economic activities. This implies a decrease in the number of consumers and lower labour quality for the private sector, and, in the worst-case scenario, the generation of an army of unemployed for the public sector, which in turn may cause extensive social problems.

Against the background of Estonia's rapid developments, less attention has been paid to the digital divide issues, and the initiative of the Look@World Foundation, the Open Estonia Foundation, and the State Chancellery to carry out a study in the area should be appreciated very highly.

The study aimed to answer the **following questions:**

- Which are the broader social factors that hinder the inclusion of users of new means of communication in information society?
- Can specific groups of the population be identified among whom computer and Internet penetration is significantly lower?
- If so, what are the needs of the light users and non-users of the Internet, what are their attitudes, prejudices and expectations in respect of new communication technologies and services?
- Which are the relevant and effective arguments and channels to involve non-users in information society development?

This report answers these questions, **relying on:**

- sociological surveys carried out by AS Emor, Estonia's largest market research and market consultation company;
- interviews by the PRAXIS Center for Policy Studies with representatives of the private, third and public sectors and analysis of the experience of different countries.

The surveys and studies were carried out from January to July 2002.

¹ Digital divide – the gap between individuals, households, businesses and geographic areas at different socio-economic levels with regard both to their opportunities to access information and communication technologies and to their use of the Internet. The digital divide reflects various differences among and within countries (OECD 2001, 5).

2. “Blue collar” individuals and “passive people” are distinguished among non-users of the Internet

The report of the value orientations survey conducted by Emor (RISC study) indicates that **non-users of the Internet** account for 58% of the Estonian population bracket in the age group 15–74, i.e. 607,000 people, as of February 2002.

Every second non-user acknowledges one or many benefits of computers or the Internet, while one-half of the non-users cannot point out any benefits of the Internet. When speaking about personal Internet use, two-thirds of non-users (65%) cannot specify any areas that could be of personal use to them.

It may be claimed on the basis of the conducted studies that one-third of non-users of the Internet are motivated to use the Internet and have access to the Internet with the help of ongoing projects. This is because they have a more open attitude to learning new skills, on the one hand, and an ability to overcome any barriers to Internet use that may arise, on the other hand.

New projects should pay special attention to those two-thirds of the non-users of the Internet (393,000 people) who do not associate the possibilities of Internet use with their lives. There are two distinct categories in this group: retired persons and workers, from RISC-based analysis² known as “passive people” (“Passive People”) and “blue collar” individuals (“Blue Collars”):

- **“Passive People”** (28% of non-users of the Internet):
 - o about 60% of the people in this group 50 or older;
 - o relatively little interest in matters outside their daily life;
 - o relation to the Internet or computers is very weak, they see no benefits in the Internet and have no need to use it;
 - o they prefer to use traditional media (even if the Internet were cheaper and more convenient), as besides generally displaying a lack of interest they are constrained by the language barrier and incapable of handling the user interfaces of computers; they are also relatively less able to learn and memorise new things, and unwilling to change their habits.
- **“Blue Collars”** (27% of non-users of the Internet):
 - o mainly unskilled and skilled workers who do not use computers in their work;
 - o about a half of the people in this group see no benefits in the Internet and would not very willingly change their daily routines as the Internet is unattractive for them;
 - o a personal monetary gain would make the Internet attractive for them;
 - o there are social and psychological barriers (fear of new technologies, no perception of the need for lifelong learning, a fear of demonstrating their lack of skills to others), skill barriers (lack of computer and foreign their language skills) and economic barriers (income per family member is on Estonian average level).

² These titles are conditional, general terms. The names are derived from the value orientation study, taking into account the mentality and socio-demographic background of the people forming the groups. See Chapter VII for more details.

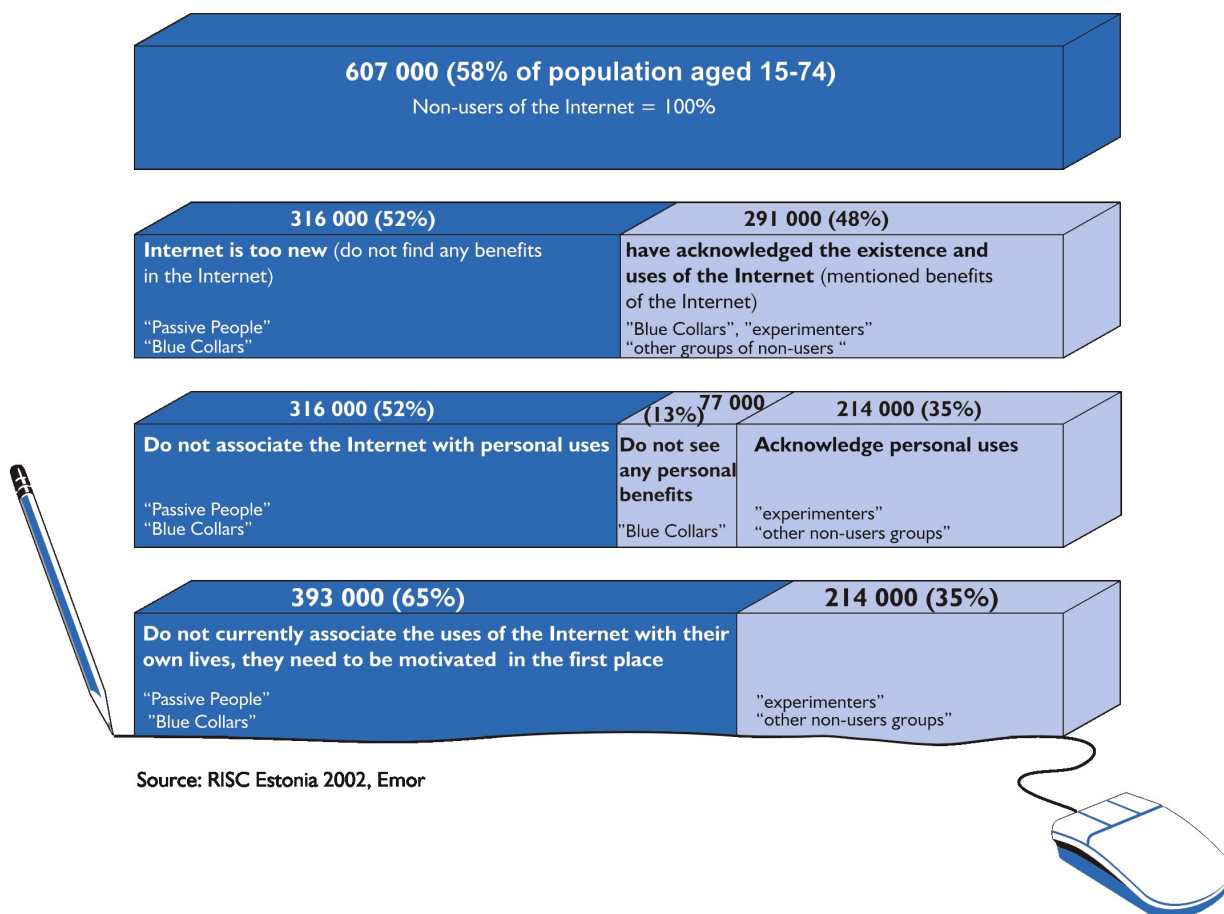
There are an estimated **176,000 retired persons** in Estonia who belong to the "Passive People" group; "Blue Collars" include **151,000 workers** (unskilled and skilled workers) and **42,000 medium-level specialists and client service personnel**.

These groups have not perceived a relation between their lives and the Internet so far, which is why the number one task is to motivate them: to introduce Internet services adjusted to the habits of these target groups, and to develop suitable Internet services where necessary.

It is also important to pay attention to the Internet skills and Internet access problems of the "Passive People" and "Blue Collars" groups -- they require a different approach. Members of the "experimenters" and "other non-user groups"³ already have motivation to use the Internet.

It may be said with fair certainty that the socio-demographic characteristics of the population segments who do not use information technology are similar to those of other countries.

Lack of motivation is key factor in 2/3 of non-users of the Internet



Source: RISC Estonia 2002, Emor

³ The group is titled "experimenters" because the people forming it are characterised by a desire to try everything that is new. "Other non-user groups" is a more heterogeneous group as concerns the mentality of its members, which is why its title does not refer to any particular way of thinking. See Chapter VII for more details.

3. Main barriers of non-users of the Internet

The following is a description of the different barriers that prevent non-users from reaching the Internet. The analysis is based on the studies of Emor: a focus group study of light users and non-users of the Internet; e-track; RISC Estonia 2002.

3.1. Motivational barriers

The main barrier in Estonian society is the fact that **the possibilities offered by the Internet are not associated with personal needs. It is believed that “computers are not for me”**. One of the reasons underlying this belief may be the Internet access structure typical to Estonia — as the living standard is relatively low, quite many do not have computers at home; school children are above-average users of the Internet owing to the Tiger Leap Programme, while various institutions also switched to using computers quite quickly as they adopted the Western methods of work. As a result of these tendencies, it has become a common view that computers are either for children for school assignments or for adults in their work.

The uses of the Internet are rather well known on the general level (a larger volume of information is the most frequently mentioned benefit of the Internet).

Another barrier is the fact that **the existing means can satisfy all the basic needs** that the Internet can be helpful for: communications, information search, management of affairs. It may be concluded that for the people currently not using the Internet, the content services offered are not attractive enough or the non-users are not aware of the services that they could personally benefit from.

A specific barrier in Estonian society is the small number of **Russian language** web sites and Internet services concerning Estonian society.

3.2. Skill barriers

Of all non-users of the Internet, 26% mentioned poor skills or the complexity of use as a reason for not using the Internet. At the same time, we have to keep in mind that it is easier to say that the Internet is unnecessary or inaccessible than to admit the lack of skills. The infrequent mentioning of poor skills as the reason for not using the Internet (lack of access was the most popular reason, followed by lack of need and lack of skills) may also give insight into the logic of Estonian people when it comes to the Internet – they first expect to have a computer along with Internet connection, then a need to use it, and finally comes the willingness to learn.

- Internet use turns out to be complicated for both non-users and light users because of **the complicated logic of use of computer and Internet**, including language problems, memory problems and poor opportunities for practising, which in turn causes the fear of damaging expensive machinery or “damaging” oneself (such as making a money transfer to the wrong account).
- Both “Blue Collars” and “Passive People” have strong social fears of learning in a group or using the Internet in a public place: **they fear falling behind the group and are not willing to demonstrate their lack of skills** (to appear the dumbest; to prevent the activities of the group/others by their poor performance).
- Further to skill barriers and psychological barriers, there are attitudes and value orientations that are less supportive of the acquisition of Internet skills: **non-approval of the principle of lifelong learning, a view of one’s life in the existing frames, a stronger than average need for a hierarchy and order, lower than average initiative and creativity** — when facing an obstacle, the people would rather give up than seek new opportunities and try again.

Relying on the studies, we conclude that the learning opportunities and teaching methods so far offered have not been acceptable to “Blue Collars” and “Passive People”. Overcoming the skills barrier is crucial particularly in the case of “Blue Collars”. Namely, many “Blue Collars” have children, and when they buy a computer, the children may become the only users of it and the “Blue Collars” themselves will never independently use the Internet.

3.3. Access barriers

The main place where the Internet is used in Estonia is the workplace (53% of Estonian Internet users aged 15–74), followed by home (40%), school (29%), the workplace or home of acquaintances (23%), and public Internet access points (15%) (Emor 2002a).

- Today’s non-users of the Internet would like to use the Internet at home. A majority of non-users cannot be expected to need the Internet in their work in the forthcoming years (retired people no longer work, the work of “Blue Collars” does not require computer skills). A majority of non-users do not wish or cannot use a public Internet access point (PIAP) because of inconvenient opening hours, etc. These circumstances make economic barriers the greatest obstacle to access, as people cannot afford to buy a home computer. The monthly income of “Passive People” is EUR 64–128 per person. “Blue Collars” earn an average of EUR 64–192 per month per person, but their families are often young (with children) and their expenditure is much greater than that of retired people, and other household appliances are usually considered more important than a computer.

Economic problems cannot be expected to be solved in the next few years, meaning that other solutions have to be sought to enhance Internet penetration. Hence, it is important to consider **the barriers to using public Internet access points**. There are two main reasons why a PIAP is unattractive:

- **“PIAP is for younger and more skilled persons”** (unwillingness to demonstrate one’s lack of skills);
- **going to a PIAP requires substantial effort** (reserving a computer, inconvenient opening hours for working people).

However, the most important, though hidden reason seems to be the **unwillingness to change the habitual routine** (home–work–shop–home for “Blue Collars”; home–post office–shop–home for “Passive People”).

Since neither “Blue Collars” nor “Passive People” wish to change their daily routines, the existing PIAPs cannot be expected to help attract a majority of them to the Internet.

4. Recommendations

Based on the barriers, PRAXIS has developed **recommendations** for a strategy for popularising information and communication technology in order to increase computer and Internet use among the Estonian population.

The main groups observed were “Passive People” and “Blue Collars”, as people belonging to the **“experimenters”** group and **“other non-user groups”** will find their way to the Internet with the help of projects already launched. The catalyst in their case is an extension of the current activities particularly through breaking the motivational barrier, as members of this group include potential users of public Internet access points. The most important actions in the short term are training and more efficient informing about the (private sector) services available.

The conducted study shows that both in respect of effectiveness as well as the guarantee of a broader economic development, it is reasonable to focus on the **“Blue Collars”**, for whom the **motivation problem** is the main problem at the moment (“computers are not for me”, “it is necessary for children or those who need it in their work”).

In the case of “Blue Collars”, the most important step is to introduce the possibilities of Internet use more extensively and to stress the direct benefits to the target group. It is important to add value to e-services (a time saving and a lower service fee only would not, but the availability of specific information would be a sufficient argument). Considering the share of the non-Estonian speaking population in the group, translation of the existing public and private sector information content and services into Russian would be highly effective when accompanied by a relevant advertising campaign.

Overcoming the **skills** barrier is also of great importance in the case of “Blue Collars”, because even when they have a computer at home, children may be its only users. The best place for training is the workplace, and as the unemployed are one of the groups of non-users, direct pressure by the state to involve these people in training would be effective (for example, more extensive Internet training as a part of conversion training).

As PIAPs in their present form do not satisfy “Blue Collars” (unwillingness to demonstrate lack of skills in a public place, inconvenient opening hours, the need for previous reservation), an effective solution would be the creation of specialised PIAPs (**SPIAP**) in places where they are easily accessible to “Blue Collars”, who would then be surrounded by people like them. An appropriate information campaign (also concerning the existing PIAPs) would help involve the Russian speaking population.

Internet use among “Blue Collars” would also be improved by a campaign (involving motivation enhancement and the price mechanism) for increasing the number of home computers and promoting Internet connection for home computers.

In order to bring “**Passive People**” closer to the Internet, a broader understanding of the “Internet for everyone” notion has to be promoted, as the **motivational barrier** is the main barrier for “Passive People” who believe that “computers are not for me”.

Alongside an appropriate advertising campaign, **SPIAPs** have to be created for this group at their points of gathering (hobby organisations) and, if possible, also in post offices (which can be quite effective if post office workers introduce specific services and provide hands-on training).

Only after the broad social barrier is overcome, more specific services (such as a special information portal with a health services page as the main feature) will become more attractive for the current non-users.

5. Structure of report

The **first part** of the report (**Chapters I-IV**) gives an overview of the background and main results of the study.

Chapter II proposes a theoretical perspective for analysing the development of information society and analyses some aspects of Internet penetration in Estonia when compared to developments in Central and Eastern Europe and the European Union member states.

Chapter III presents a summary of the main results of the study -- the main barriers to using the Internet. **Chapter IV** gives recommendations to bridge the digital divide, based on the previous chapters.

Part two of the study consists of the reports of different studies.



PART I: BACKGROUND AND RESULTS OF STUDY

I. INTRODUCTION

Mari Kalkun, Tarmo Kalvet	14
1. Background of study	14
2. Objectives	14
3. Methodology	15
4. Structure of report	17

II. ESTONIA'S ADAPTATION TO ICT BASED SOCIETY

Tarmo Kalvet	18
1. Change in techno-economic paradigm	18
2. Estonia in a whirlpool of changes	21
3. Internet penetration in Estonia: a theoretical background	24
4. Internet penetration in Estonia	25
4.1. Influence of Nordic countries	25
4.2. Telecommunications market and Internet	26
4.3. Modernisation of the education sector	28
4.4. Internet based applications	28
4.5. Public Internet access points	28
5. Digital divide in Estonia	30

III. SUMMARY: BARRIERS TO INTERNET USE IN ESTONIA

Mari Kalkun	31
1. Motivational barriers	31
2. Skill barriers	32
3. Access barriers	34

IV. RECOMMENDATIONS FOR IMPROVING INTERNET PENETRATION

Tarmo Kalvet ja Daimar Liiv	35
1. Introduction	35
2. Motivational barrier	36
2.1. Nature of barrier and its relation to the groups	36
2.2. Recommendations for overcoming the motivational barrier	38
3. Skill barriers	41
3.1. Nature of barrier and relation to the groups	41
3.2. Recommendations for overcoming skills barrier	42
4. Access barrier	43
4.1. Nature of barrier and relation to the target groups	43
4.2. Recommendations for overcoming the access barrier	44

I. INTRODUCTION

Mari Kalkun ja Tarmo Kalvet

1. Background of study

In the autumn of 2001, the Look@World Foundation, the Open Estonia Foundation and the State Chancellery announced a public competition for conducting a study on the subject "Social aspects of information technology in Estonia" (see also Annex 1). The joint tender of AS Emor and the PRAXIS Center for Policy Studies with a budget of EUR 10,545 won the call.

At a later stage of implementation of the project, the International Bank for Reconstruction and Development (IBRD) for the Information for Development Program (infoDev) joined the study as a co-funder by a grant to the PRAXIS Center for Policy Studies for ICT Infrastructure and E-Readiness Assessments (Grant # ICT 016).

2. Objectives

The study of AS Emor and the PRAXIS Center for Policy Studies (hereinafter: Emor and PRAXIS, respectively) focused on analysing the population groups in Estonia who are light users⁴ and non-users of computers and the Internet.

The main objective of the study was to identify the broader social factors that prevent the involvement of users of new communication technologies into information society, to specify the segments (population groups) among whom computer and Internet penetration is significantly lower when compared to the reference group of active users of these IT means, and to identify the needs, attitudes, prejudices and expectations of light users and non-users of computers and the Internet in respect of new information communication technologies and services.

The study focused on analysing the **digital divide**⁵ and the ways to bridge it in Estonia. The study was based on an assumption that there are "individuals and households" in Estonia who have a lower than average readiness and possibility to use computers and the Internet. In the course of their work:

- the relevant groups were defined;
- the reasons for the formation of these groups were observed: whether the reasons are economic, psychological (lack of necessity, fear of other people and technology, established attitudes), social (differences in value orientations, education) or skill-related (a different learning ability);

⁴ For the purposes of this study, light users of computers and the Internet means those who use these means of communication less frequently than once a week.

⁵ The term "digital divide" refers to the gap between individuals, households, businesses and geographic areas at different socio-economic levels with regard both to their opportunities to access information and communication technologies and to their use of the Internet. The digital divide reflects various differences among and within countries (OECD 2001, 5).

- potential motivations were sought to bring the target groups to the Internet depending on their reasons for non-use.

(The study does not answer the question of how large a proportion of non-users of the Internet will never be able to acquire computer and Internet skills.)

The results of the study can be used primarily in planning various measures **for bringing non-users closer to the Internet**. The recommendations proposed in the report are aimed at both the private sector (the non-profit and business sectors) and public authorities (the Government of the Republic). Although many of the recommendations are mainly aimed at the Government of the Republic, the implementation can only be carried out in cooperation with the private sector. Following from the analysis on which the recommendations are based, the private sector may also use them as argumentation in demanding the public sector to develop and implement appropriate measures, to a suitable extent, from state budget funds. It has to be taken into account that a majority of the recommendations cannot be used as a business plan for enterprises, because the underlying research did not specify the potential user groups in sufficient detail and did not attempt to identify the factors relevant to creating specific economic relations. Giving such recommendations would require studies of a different objective and depth.

3. Methodology

The study was conducted in cooperation between Emor and PRAXIS from January to July 2002 and it consisted of several stages.

Firstly, **e-track** was used to determine the segments whose Internet use was subjected to further survey and the development dynamics of these groups over the recent years⁶. The e-track analysis provided statistically reliable information about the actual type and size of the target groups of the study. On the basis of the e-track results, the population groups of non-users and light users of computers and the Internet in Estonia were determined and divided into several segments.

The defined segments were then studied qualitatively in the form of **focus group interviews**.

The goal of focus group interviews was to gain a thorough overview of the attitudes and beliefs of the respondents concerning information technology and Internet use. Focus group interviews gave answers to questions such as:

- What are the factors (including needs) that motivate and influence the computer and Internet use of different segments?

⁶ From January 2000, Emor conducts an e-track study in the framework of an omnibus survey, which is a basic study about the computer and Internet use of Estonian inhabitants aged 15–74. Comparison data from the years 1996 to 1999 originate from BMF Gallup Media National Readership Survey of Estonia. This study is based on data collected in 2001 (about 6000 respondents).

- What attitudes hinder computer and Internet use (e.g. lack of trust, low security level, etc.)?
- What is the logic behind the technology and Internet use of the target segments (including the simplicity and comprehensibility of using the technologies)?

Thirdly, a **value orientations survey report** was prepared on the basis of the focus group interviews and the RISC study⁷ of the value orientations of Estonian inhabitants conducted by Emor in February 2002. The purpose of the report was to provide a quantitative overview of non-users of the Internet in Estonia. Answers were sought to the following questions:

- Can we distinguish between segments with different value orientations among non-users of the Internet?
- If so, what are the peculiarities of these segments?
- What is their current attitude to the Internet and its possibilities?
- What are the barriers to Internet use?
- What would potentially motivate Internet use?

From 15 June to 2 July 2002, the PRAXIS working group conducted **interviews with experts**. Relying on the focus group study performed by Emor, the RISC study of the value orientations of Estonian inhabitants, and e-track analysis by Emor, the experts were asked to give a general evaluation of Estonia's IT developments so far, of the relevance of the digital divide problem in society and its underlying reasons, potential solutions for the involvement of the risk groups as users of new means of communication, and specific recommendations as to what the national IT action plan should contain in the forthcoming years to reduce the digital divide.

The following persons were interviewed:

- Alar Ehandi – Look@World Foundation, Head of Foundation;
- Mait Heidelberg – Ministry of Transport and Communications, Deputy Secretary General;
- Olari Ilison – AS Hansapank, Distribution Channels Area Manager;
- Maiko Kalvet – AS Eesti Telefon, Media Service Manager;
- Arvo Ott – Ministry of Transport and Communications, Head of Department of State Information Systems;
- Kristjan Rebane – Estonian Information Technology Foundation, Development Manager;
- Ivar Tallo – author of the “Principles of the Estonian Information Policy”;
- Marek Tiits – Research and Development Council of Estonia, Permanent Secretary;
- Meeli Veskus – Minister of Culture, Adviser (library science);
- Linnar Viik – Estonian Information Technology College, Lecturer.

⁷ The study that Emor carries out since 1992 is based on the RISC (Research Institute on Social Change) methodology. The present study was performed in February 2002 and involved 1000 Estonian inhabitants.

An **expert forum** was carried out in cooperation between PRAXIS and Emor on 15 July 2002. The expert forum involved specialists in information technology, economics and social sciences, and discussed the collected quantitative data on the light users' and non-users' segments. A goal of the expert forum, serving the elaboration of the final report, was to combine a theoretical discussion on the use of information and communication technology with information collected in other studies about Estonia's and other countries' experience in implementing practical ICT applications.

To summarise all of the activities described above, the analysts of PRAXIS compiled an **expert analysis** in June and July 2002, which also gives recommendations for solving the digital divide problems in Estonia besides introducing the conducted studies.

4. Structure of report

The first part (Chapters I–IV) of the report provides an overview of the background and main results of the study.

Chapter II proposes a theoretical perspective for analysing the development of information society and analyses some aspects of Internet penetration in Estonia when compared to developments in Central and Eastern Europe and the European Union member states.

Chapter III presents a summary of the main results of the study -- the main barriers to using the Internet. Chapter IV provides recommendations to bridge the digital divide, based on the previous chapters.

Part two of the study consists of the reports of different studies.

Chapters V, VI and VIII and Annexes 2, 3 and 4 reflect the results of the sociological study conducted by Emor. The first of them (**Chapter V**) briefly presents the dynamics of computer and Internet use in Estonia and identifies the segments of non-users. A summary of the focus group study is given in **Chapter VI**, the full report in **Annex 4**. The segmentation of non-users of the Internet, based on value orientations, in **Chapter VII**, complements the results of e-track and the focus group study.

Chapter VIII describes the understanding of the problem and the developments in Estonia as seen by Estonia's leading IT specialists, economists and civil servants.

II. ESTONIA'S ADAPTATION TO ICT BASED SOCIETY

Tarmo Kalvet

1. Change in techno-economic paradigm

A multitude of writings have appeared since the 1970s, describing how the organisation of society has undergone an "information revolution", "a third wave", etc. Indeed, since the 1990s the ICT development has been explosive in both developed and developing countries. This in turn has given some countries an opportunity for larger economic growth; attempts have been made in a majority of countries to rearrange the organisation of the public sector, and individuals have perceived a rise in the quality of life owing to the introduction of new technologies.

At the same time, science, technology and innovation analysis is currently centred around an understanding that such "revolutions" or changes in the techno-economic paradigm have already taken place many times in human history. Namely, preference is given to an historical approach and the theory of economic waves, i.e. the idea that the economy is based on some fundamental principles. The pioneer of this approach is Joseph A. Schumpeter (1883–1950) and according to the approach, in the centre of the capitalist economic system lies a phenomenon called creative destruction, which stands for the process of changing inherent to the capitalist economic development, in the course of which economic innovation and the development and changing of the techno-economic paradigm always brings about the destruction of the "old" industries and the related social frameworks, and their substitution by new branches of the economy which are central in the new paradigm (Schumpeter 1939). Carlota Perez describes these paradigms as follows:

"The irruption of such significant clusters of innovative industries in a short period of time would certainly be enough reason to label them as "technological revolutions". Yet what warrants the title [techno-economic paradigm] for the present purposes is that each of those sets of technological breakthroughs spreads far beyond the confines of the industries and sectors where they originally developed. ... This leads each time to the modernization and regeneration of the whole productive system, so that the general level of efficiency rises to a new height every fifty years. The techno-economic paradigm comprises the entire economic sector, including its organisational and financial structure. Each technological revolution gradually gives rise to a new techno-economic paradigm, which guides entrepreneurs, innovators, investors and consumers ..." (Perez 2002).

In this context, there is a reason to view ICT as a technology currently leading a change in the techno-economic paradigm of the whole world. Parallels can be

found in history: for example, cotton, coal and iron, steel, oil and plastic have also been in the centre of technological innovations of all-embracing influence in the production sphere. It should be mentioned about this wave that even those who have disputed the revolutionary character of earlier waves of technical change often have little difficulty in accepting that a vast technological revolution is now taking place, based on the electronic computer, software, microelectronics, the Internet, and mobile telephones (Freeman and Louca 2001, 301). Such an approach is widely represented in different theoretical sources (such as Freeman and Perez 1988; Freeman and Soete 1997; Perez 1985, 2002; Bell 1973; Toffler 1980; Masuda 1981; Castells 1996, 1997, 1998).

Since the Internet is an infrastructural technology, one may agree with Metcalfe's law, according to which the value of a network increases by the square of the number of users. The acknowledgement of a sharp increase in the number of equipment to be connected to a world-wide network in the near future is also the key idea behind one of the most prominent reports published recently by the Information Society Technologies (IST) Advisory Group (ISTAG) (2001). It points out that our everyday lives and work will probably be surrounded by ambient intelligence (AmI) in the year 2010.

The concept of Ambient Intelligence (AmI) provides a vision of the information society where the emphasis is on greater user-friendliness, more efficient services support, user-empowerment, and support for human interactions. People are surrounded by intelligent intuitive interfaces that are embedded in all kinds of objects and an environment that is capable of recognising and responding to the presence of different individuals in a seamless, unobtrusive and often invisible way (2001, 8).

In order to actualise such a vision, it is highly important besides technological aspects to observe the social aspects. A number of indicators were identified in the study that make AmI socially acceptable:

- AmI should facilitate human contact;
- AmI should be orientated towards community and cultural enhancement;
- AmI should help to build knowledge and skills for work, better quality of work, citizenship and consumer choice;
- AmI should inspire trust and confidence;
- AmI should be consistent with long term sustainability — personal, societal and environmental and with life-long learning. In essence, the challenge is to create an AmI landscape made up of "convivial technologies" that are easy to live with;
- AmI should be controllable by ordinary people — i.e. the "off-switch" should be within reach: these technologies could very easily acquire an aspect of "them controlling us". The experts involved in constructing the scenarios therefore underlined the essential need that people are given the lead in way that systems, services and interfaces are implemented (ISTAG 2001, 8–9)

The same report also points out the risk that differences in income, education, skills, age and profession may prevent the development of an all-embracing Aml (15).

The changing and development of the new techno-economic paradigm thus has both its winners and losers. Namely, some countries, population groups and persons adapt to changes more easily, others are more passive or even work against the changes. That is why the main function of the state is to analyse the challenges brought about by the techno-economic paradigm and the creative destruction process, and to change and reform the existing political measures and institutions accordingly so as to again involve those who have become the losers in the economic development. Although the primary goal is to ensure the emergence of new (ICT-based) branches of industry (particularly through research and development activities, industrial and technology policy) and employment, the digital divide risk should not be underestimated.

... the term "digital divide" refers to the gap between individuals, households, businesses and geographic areas at different socio-economic levels with regard both to their opportunities to access information and communication technologies and to their use of the Internet. The digital divide reflects various differences among and within countries (OECD 2001, 5).

Hence, the digital divide is a complicated question by its nature, as it involves motivation and other issues. For example, even if financial limitations are not an obstacle to the acquisition and use of technology, a lack of motivation may become an obstacle. The issue of the digital divide is therefore acute in all countries and not only in transition societies, and the related issues are central in all reports dealing with the development of information society. A typical report is the *Future Bottlenecks in the Information Society* (Clements et al. 2001), which points out that the four bottlenecks preventing information society development are:

1. access to networks and services;
2. standardisation and the potential for abuse of proprietary standards;
3. electronic payments systems and their convergence with communications services;
4. future privacy issues.

It may be said in general that a majority of countries have reached a balanced approach. Namely, it is stressed that in order to introduce the Internet (and other information technology) to society on a broader scale, a guarantee of access (i.e. a developed telecommunications network) is not sufficient. People will be actually interested in using technology when they have motivation (when content services are offered). Similarly, Kai (2001) stresses that there are four enablers of development: affordability, availability, awareness and adaptation. A similar understanding is demonstrated in all latest reports on developed countries (see, for example, Committee for Economic Development (CED) 2001, 46–59; Kirschenbaum and Kunamneni 2001; OECD 2001, 5);

For example, the Committee for Economic Development (2001) very correctly points out that there are three crucial factors. Firstly, programmes for bridging the digital divide cannot replace programmes addressing the root of the problem -- poverty. Therefore, programmes promoting the use of computers and the Internet should be integrated with undertakings focused on the development of human skills and a general enhancement of the education level, a regionally balanced development and the overall development of social and physical infrastructure. Secondly, the gap will disappear when people who lack access to (and the skills to use) the Internet are motivated to acquire such skills. Thirdly, it is stressed that markets are dynamic and technologies will keep changing -- even if the current gap in respect of Internet use closes, another will surely open as those with higher incomes move up the technology ladder to more powerful and sophisticated technology. These principles have to be taken into account when developing programmes for addressing the digital divide (2001, 45).

Although it seems like a trivial notion, policy recommendations in Central and Eastern European (CEE) countries tend to excessively stress the technical aspects of access, particularly the level of spread of the telecommunications network, establishment of universal services, etc. An illustration of this is the report of the Global Internet Liberty Campaign (2000) titled "Bridging the Digital Divide: Internet Access in Central and Eastern Europe".

2. Estonia in a whirlpool of changes

Estonia alongside other Central and East European countries has undergone a turmoil of events during the last decade as its economic environment has been reformed from centrally planned into a free market economy. When compared to the other transition countries, Estonia is characterised by a remarkable success in this respect. Estonia has been able to create a stable macroeconomic environment which in turn has provided conditions precedent to further development. At the same time, Estonia like other countries is adapting to the new techno-economic paradigm, but in this respect, the response to the challenge has been insufficient in Estonia, just like in the other CEE countries.

Estonia's transition to a market economy has become reality largely with the help of a neo-liberal laissez faire policy, meaning the non-interference of the state. Estonia's economic policy is characterised by a strong orientation to market mechanisms, a rapid and extensive privatisation, free trade and a liberal investment climate. A stable monetary policy and the principle of a balanced state budget have been the main priorities. Market failures have been the main concern of Estonian policy makers -- state intervention has aimed at creating a sufficient market through supply and an appropriate price mechanism. These steps have been very helpful for switching Estonia from planned to a free market economy, but all this is insufficient for supporting Estonia in its adaptation to the new techno-economic paradigm (Kalvet and Kattel 2002, 45).

Adaptation can be viewed from two aspects: 1) the development of new technologies, and 2) the application of new technologies. The Estonian industrial sector has great problems concerning the first aspect; although Estonian industry as a whole has been reorganised, new branches of industry have been slow to appear and practically no innovative (information) technology on the world scale is being developed in Estonia.

Comparing the portfolio of publicly-funded projects against the European common IST vision (Information Society Technologies Advisory Group 2001) leads to the following conclusions:

- the large majority of current academic research themes are useful in sustaining and improving the quality of higher education, but the majority of the projects have a limited chance for innovation. For example, small and under-financed Estonian research teams with no respective local industry in the cluster are not able to compete alone in segments that are dominated by large international corporations (software technologies, micro electronics, etc.);
- the research response to the developing information society, to the needs of the society and emerging new markets is weak; only up to one-third of the projects contribute to the development of the Key Emerging Technologies needed for making the European IST vision reality;
- of the Key Emerging Technologies, micro- and optoelectronics, and language technologies are met most substantially; there is also some focus on data security technologies (Kalvet et al 2002, 18).

However, Estonia is characterised among both transition countries and developed countries as a successful adopter of new technologies. Indeed, Estonian society has demonstrated a great readiness to adopt modern technologies and to experiment with new solutions, justly reflected by international media coverage under headlines such as "Estonia: 10 Years from Communism to Advanced e-Democracy!" (Pandev 2002). A more thorough account of Estonia's success is provided internationally, for example, in the report of McConnell International (2001) "Ready? Net. Go! Partnerships Leading the Global Economy", in which Estonia's situation is considered favourably as regards e-government, human capital and e-business environment. Only South Korea reaches a similar level among the countries observed. According to a calculation based on the human development report of the UN Development Programme (2001) about Estonia's position as regards the level of technology application, Estonia ranks 30th in the chart of world technology achievements (Viik 2001), while being 44th according to the general human development index.

On the one hand, Estonia's success in rapid development can be explained by the catching up model (Abramovitz 1986). According to this concept, technologically relatively less developed countries grow faster than developed countries, as the transfer of technological knowledge allows them to apply the technological competence of developed countries more easily, thus supporting a relatively faster growth in the quality of life. Besides accumulation of technology, the aspect of social capability also plays a crucial role in such processes, primarily concerning the existence and effective functioning of institutions that facilitate an international spread of technological knowledge. The education and financial systems are generally thought of as the main guarantees to the development of social capability. The education system is on a high level in Estonia when compared to the other transition countries, and the reorganisation and stabilisation of the financial system has been and continues to be an economic policy priority of Estonia.

Catching up has particularly taken place as regards consumer products class of ICT products (computers, the Internet, cell phones). Estonia's economic and cultural link to the Scandinavian countries that have excellently adapted to the new techno-economic paradigm has proven to be an advantage for Estonia.

When approaching Estonia's development using the catching up model, we have to give up the extrapolation of the developments using previous periods. Namely, it would be premature to assume that the different trends that reflect the application of technology will continue endlessly. Different empirical studies indicate a slowing down of development: for example, the deceleration of Internet penetration (see Chapter V for more details). It would thus be too arrogant to expose Estonia as the only possible model among other countries where the transition processes started later, even though there is much to be learned, though not necessarily copied, from Estonia's experience.

It is also important to note that as a relatively high level of ICT use has already been reached in Estonia at a fairly low standard of living, socio-economic factors become increasingly more important than technological factors. For example, the study conducted by the PRAXIS Center for Policy Studies "Effect of Social Benefits on Labour Supply and Poverty" (Kuddo et al. 2002) points out that 15.5% of families, i.e. about 212,000 people live in poverty in Estonia (with an average income of EUR 42 a month per family member). As these families have, on average, twice as many children as richer families, poverty is reproducing itself over generations.

From it follows the need to apply (ICT-related) measures to avoid the poverty risk, including through educational and labour market policy and through relevant direct aid by the state (e.g. similarly to dwelling compensation).

As mentioned above, the Internet is a technology that lies largely in the centre of information society development. There is therefore a reason to observe certain aspects relating to the development of the Internet in Estonia.

3. Internet penetration in Estonia: a theoretical background

Many writings have appeared on information society topics and the related social, political and cultural aspects (see e.g. Castells 1996, 1997, 1998; Lyon 1988, Poster 1990, Webster 1995), but as Drechsler (2002) argues, a majority of these analyses are superficial, although Dreyfus (2001) and Barney (2001) are some of the recent writings that are deeper and see the important problems inherent to the Internet and information society. However, one has to admit that opposition to the adoption of information technology has been relatively weak over times, particularly when compared to the previous changes in the techno-economic paradigms. This weak or even non-existent opposition may be explained, according to Bauer (1995), by the fact that the risk perception of the public mostly depends on the size of the risk and the possibilities of managing it, and less on the frequency of its occurrence (9). When observing the ICT-related problems, of which technological ones are primary for the public at the moment, one has to admit that problems do arise frequently (we all see our computers crash every day/week/month), but the related risks are lower and controllable on the aggregate. Social risks, however, are not so evident at this moment, with a majority of activists concentrating on a fight against biotechnology and related innovations.

Unfortunately, scientific analysis that would explain the varying levels of Internet penetration in different countries is extremely scarce, and only three of the recent writings employ econometric methods (Kiiski and Pohjola 2002)⁸:

1. Hargittai (1999) analysed the number of Internet connections per number of inhabitants and the correlation of different indicators (income, education, telecommunications infrastructure) in 18 OECD member states. The author concluded from the analysis that the main factor that shapes the development of the Internet is the regulative environment and its effect on establishing competition. According to Hargittai, there is positive correlation between these two indicators.
2. Norris (2000) studied Internet use in a sample of 179 countries, seeking correlation between the number of Internet users and various economic, social and political factors. The author points out regional dummies for certain regions (the Nordic countries, North America and Western Europe) that refer to social and cultural peculiarities. He concludes from his analysis that the GDP per capita and the share of research and development expenditure in the GDP are statistically relevant. At the same time, the scope of literacy of the adult population, the spread of secondary education or the level of democratisation of society do not have a significant statistical explanatory power.
3. Kiiski and Pohjola (2002) themselves claim about the OECD member states that the factors shaping the penetration of Internet connected computers are: a) the GDP per capita and b) the costs of Internet access. After studying a larger sample of industrial and developing countries, they conclude that the level of education is becoming an important factor.

⁸ Analysis of theoretical literature has been limited to a few more recent articles.

Kiiski and Pohjola (2002) also justly attack the notion that competition on the telecommunications market could shape the development: it probably will do so, but it will do so through the price mechanism. Competition in itself can only be a means of introducing cheaper and/or higher quality services to the market, which in turn increases the number of users.

It is important to note that two of the above-mentioned studies point out the need to correct the model with the regional dummies in the case of Nordic countries because of the social, economic and technological peculiarities of these countries.

4. Internet penetration in Estonia

The following is a discussion of some of the aspects of Internet penetration in Estonia. The fragmentariness is due to an intended briefness and the need to only present what is most important in the present context.

4.1. Influence of Nordic countries

As mentioned above, it has been necessary to introduce regional dummies to the econometric models proposed by different authors in the case of the Nordic countries. Considering Estonia's economic and cultural link to the Nordic countries (that have very well adapted to the new techno-economic paradigm), their positive effect ("positive externality") has probably also affected Estonia. This is illustrated by the econometric model developed by Kiiski and Pohjola (2002), with the two variables being the number of Internet connected computers on one axis and the GDP per capita, taking into account the purchasing power, on the other axis. A logarithmic relation appears between these two variables. It also follows that Estonia is among the countries in which case, based on the GDP per capita, a smaller number of Internet connected computers could be presumed than there are in reality. Estonia thus deviates from the general trend like the Nordic countries and there is every reason to believe that the application of a certain "Scandinavian coefficient" to Estonia is justified.

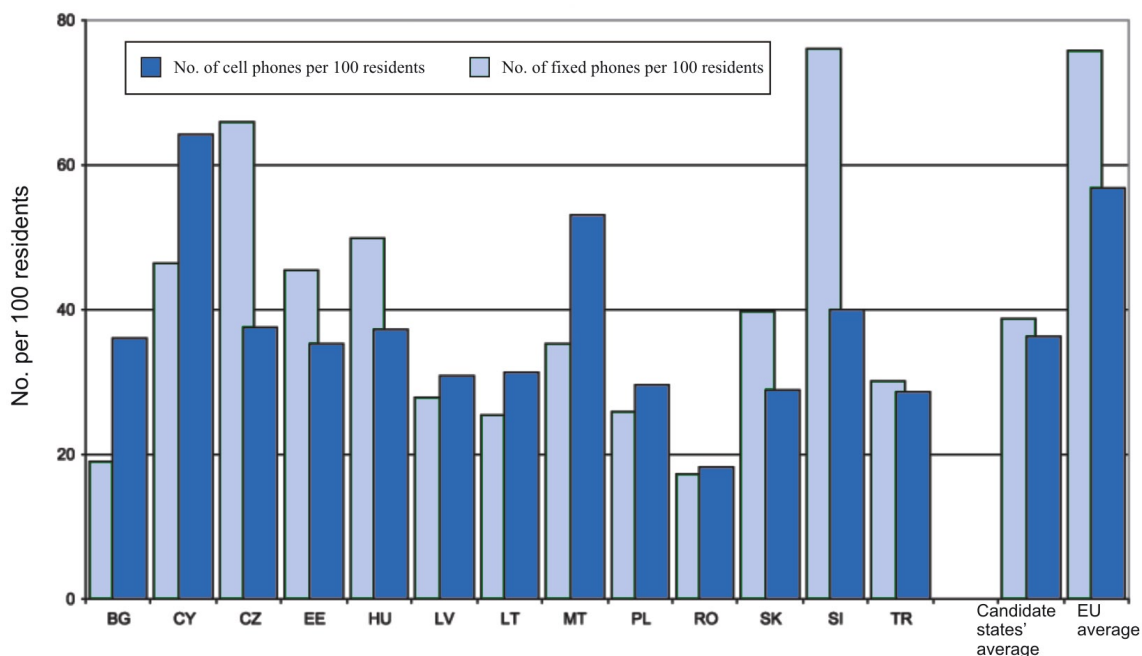
It is also interesting to note the following concerning the innovation system of the Estonian ICT sector: "The effect of Scandinavia can be summed up in a dual manner: on the one hand, it has facilitated the uptake of novel technology and provided Estonian companies with sustainable income through subcontracting; on the other, it reinforces the lock-in effect as the Estonian ICT industry is captured in low value added activities with little promotion of incentives for innovation" (Kalvet et al. 2002, 20–21).

4.2. Telecommunications market and Internet

The high level of Internet use in Estonia largely owes to the early adoption of the Internet in the research and higher education sector and the existence of a developed telecommunications network. Estonia is characterised by a large number of telephone connections both in respect of fixed and mobile telephones (Figure 1).

The reason for the rapid development of the telecommunications market was the fact that Estonia was one of the first Central and East European countries that liberalised its telecommunications market and achieved a remarkable level of foreign investment by assigning special rights under a concession. Concession agreements were signed between the Government of the Republic of Estonia and AS Eesti Telefon (Estonian Telephone Company, ET) in 1992, granting ET special rights for the main services (national and international fixed telephone, telex and telegraph services, their installation and mutual connection) for eight years (up to 1 January 2001).

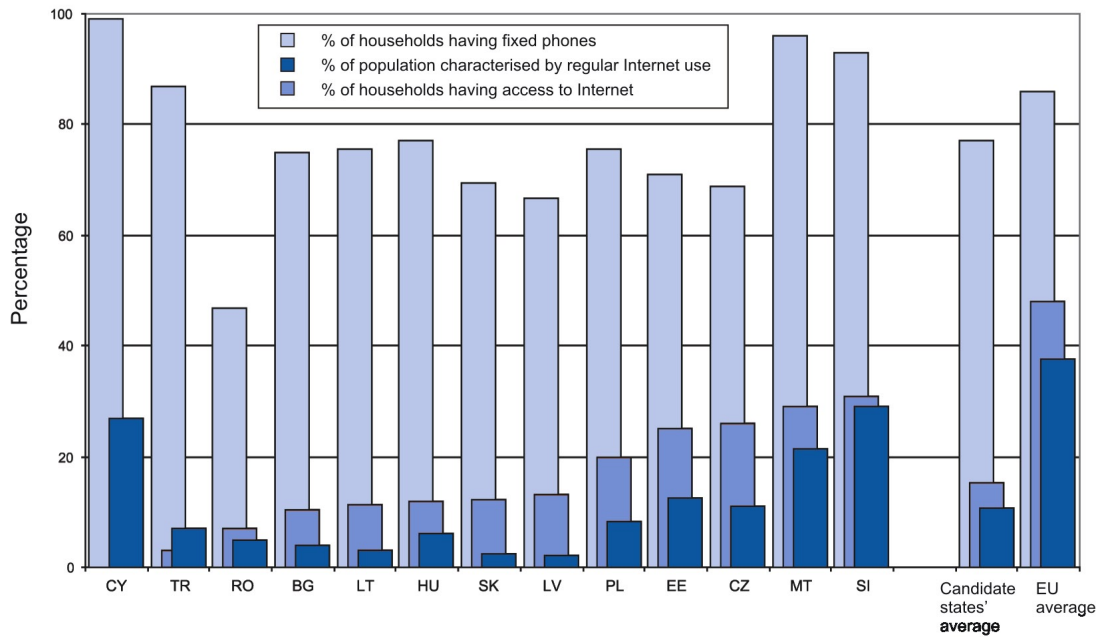
Figure 1. Number of telephone lines



Source: eEurope+ 2003 Progress Report

There are further factors that influence the level of Internet use and the Internet is relatively less used in some countries despite the existence of telephone lines (Figure 2).

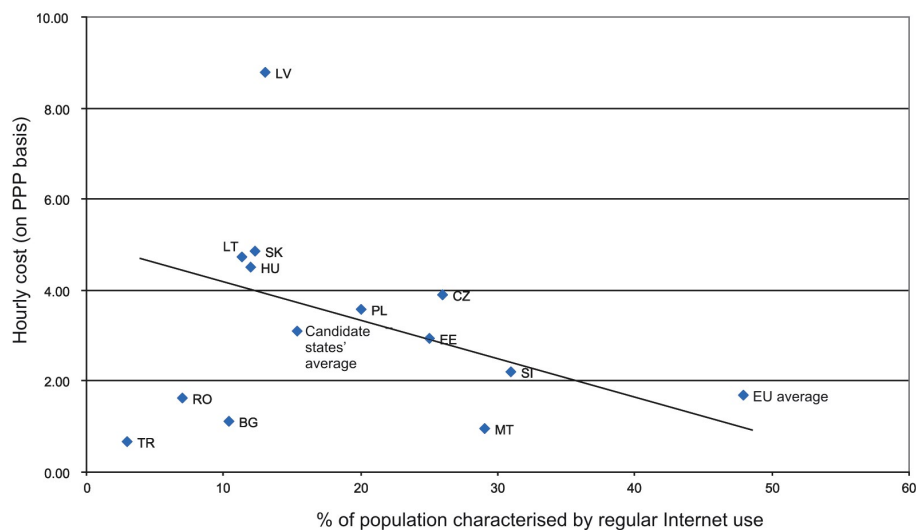
Figure 2. Percentage of regular Internet users compared to households having fixed phone connection



Source: eEurope+ 2003 Progress Report

An important factor that affects the (frequency of) Internet use is the price of the service (Figure 3) (eEurope+ Progress Report, 18).

Figure 3. Cost of Internet access



Source: eEurope+ 2003 Progress Report

4.3. Modernisation of the education sector

Another important factor that should be pointed out is EENet, the Estonian Education and Research Data Communication Network, and the Tiger Leap Programme. Both have substantially supported the improvement of Estonian school education through an large-scale application of ICT – for example, in the year 2000 there were no basic schools or upper secondary schools in Estonia without a computer; 75% of all schools have a permanent Internet connection. As a result of the programme, Estonian pupils have acquired computer skills and, furthermore, as the results of several studies show, this has also indirectly attracted adults to computers and the Internet.

4.4. Internet based applications

Internet banking and the overall activities of banks on the Estonian ICT landscape have acted as important shapers of the development, and ICT-based innovation (accompanied by a greater convenience of use and a saving on bank transfers) have certainly contributed to Internet penetration in Estonia. Also, banks in cooperation with other companies are providing various popular services over the Internet (motor third party liability insurance contracts, etc.).

The rapid development of the Estonian banking sector and the hi-tech solutions developed by the development departments of banks have most clearly increased the need for new, quality software and reliable and secure products, thus making a positive impact on the creation of innovative solutions (Kalvet et al. 2002, 22).

However, the Internet use has primarily acquired a social rather than a business dimension among the Estonian population. Internet trade, particularly in the B2C area, is practically non-existent, while the public sector services are used quite extensively. This is due to the overall encouraging attitude of the public sector toward innovative technological solutions both via the legislation (the Public Information Act has made a great impact) and specific investments in information technology. However, these reorganisation processes are still at an initial stage. For example, only a part of the e-government services listed in the "eEurope action plan" have been made available, and further actions have to focus on the development of electronic services, particularly on creating secure ID card applications for citizens and improving the internal efficiency of public administration.

4.5. Public Internet access points

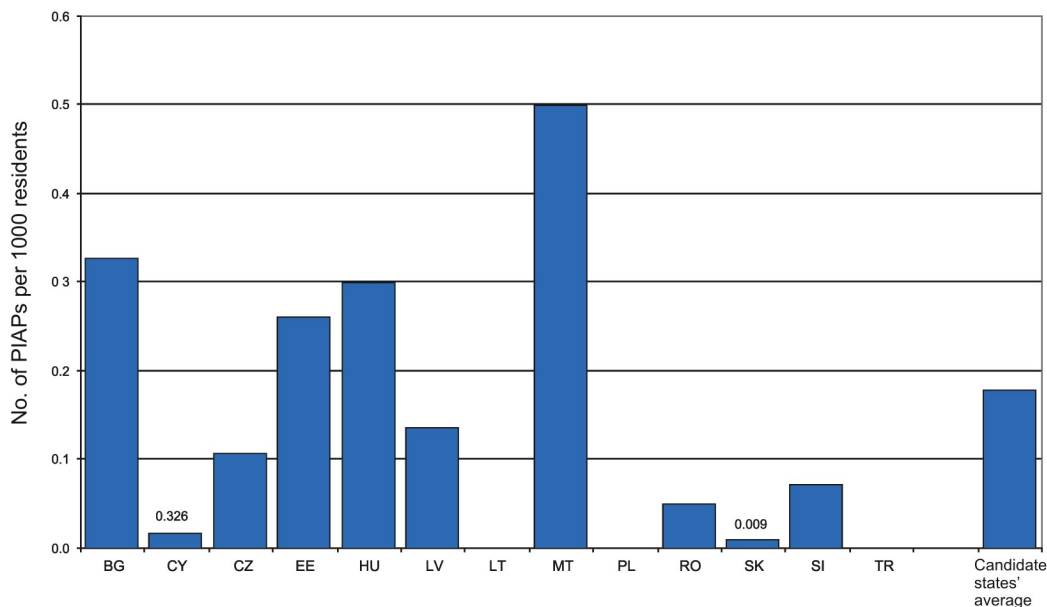
As the focal point of the present study is the digital divide, a few facts should be presented about public Internet access points.

Public Internet access points (PIAPs) are rooms equipped with Internet-connected computers, where as a rule, no fee is charged for using the computers (at least for using Internet services). According to the vision of the initiators behind the creation of public Internet access points, PIAPs should guarantee everyone's free access to electronic information and complementary training where necessary.

The first PIAP in Estonia was opened on 21 February 1997 on the seventh floor of the Estonian National Library. The project was funded from an aid project of the UN Development Programme (UNDP) for supporting Estonia's integration into information society and for extending access to electronic information. The Internet room contained six workstations with Internet access for those interested. In April 1997, two more PIAPs were opened in Hiiumaa (in Kärđla and Paope) with support from the UN Development Programme, and another one, the Sõru PIAP, was opened in June. The initiative of the UN Development Programme was followed up by the Open Estonia Foundation which announced a public competition for support to the establishment of public Internet access points in Estonian small towns and rural areas in the autumn of 1997. Amongst other things, the competition announcement stated: "Public Internet access points are rooms equipped with Internet technology, where free access to Internet resources will be guaranteed to all those interested..." The project announcement also mentioned that "...libraries, museums, information rooms and other environments that have become the gathering points of local people and would become more attractive owing to Internet access..." would be preferred in the evaluation of project applications. In most cases, a PIAP is located in the local government or library facilities and during its opening hours, free consultations are provided by a consultant who works in his or her principal job or in a part-time job (Kalvet and Mürsepp 1999).

The initiative was further continued by the Look@World Foundation; the state has also extended support to the establishment of PIAPs through the Ministry of Culture. A nationwide network of PIAPs, which is sufficiently large when compared to other EU candidate states, has been created in cooperation between different parties (Figure 4).

Figure 4. No. of public Internet access points (PIAPs) per 1000 residents



5. Digital divide in Estonia

The Estonian case confirms the fact that changes in and the development of the techno-economic paradigm have both their winners and losers.

It may be said on the basis of Emor research results that the number of computer users (aged 15–74) has persistently increased over the last five years (autumn 1997 – 31% of the sample, May 2002 – 51%). The number of Internet users has stabilised since the end of 2000: there are 410,000 Internet users in Estonia as of the end of May 2002, forming 39% of the target group (the respective figure at the end of 2000 was 30%) (Chapter V).

There are thus about 607,000 non-users of the Internet in Estonia, among whom there is a higher than average number of:

- representatives of other nationalities;
- people aged 50–74;
- people with basic and secondary education;
- non-working people;
- people with a lower than average income (monthly income per family member is less than EUR 128);
- inhabitants of western and southern Estonia and the Virumaa region (Chapter V).

The socio-demographic indicators describing the population segments not using ICT coincide with those of other countries. Differences in income, education, and age are referred to as the reasons for the digital divide everywhere. According to the same analyses, gender is usually not statistically relevant. (See e.g. the analysis of Kai (2001) about Hong Kong; Fall through the Net (2000) and the National Telecommunications and Information Administration and the Economics and Statistics Administration (2002) about the USA; Foley (2000) about the United Kingdom; the report by Kai (2001) on Japan, Singapore, Korea, Taiwan).

The Estonian strategy and action plan for the implementation of information technology are established in the "Principles of the Estonian Information Policy" approved by the Parliament (The State Gazette (RT) I 1998, 47, 700) and the information policy action plans regularly updated by the Government. The "Knowledge-Based Estonia" strategy, approved by the Parliament on 6 December 2001 (The State Gazette (RT) I 2001, 97, 606) also specified user-friendly information technologies and information society development as a key area subject to priority development. However, one has to admit that although the reduction of the digital divide has been prioritised in different political and public policy documents, more attention has to be paid to the implementation. The principles of information policy are too generalised, they do not lead to specific activities, and the related framework plan is too technically oriented, neither is its implementation mechanism actually working.

The activities of the Estonian state are thus passive when it comes to reducing the digital divide. However, the creation of public Internet access points and the development of content services has started in Estonia on the initiative of the third sector (mostly the Open Estonia Foundation), followed up by the praiseworthy incentive of the Look@World Foundation.

III. SUMMARY: BARRIERS TO INTERNET USE IN ESTONIA

Mari Kalkun

The following is a description of the different barriers that hinder non-users from reaching the Internet. The analysis is based on the studies of Emor: a focus group study of light users and non-users of the Internet (Chapter VI, Annex 4); e-track (Chapter V); and RISC Estonia 2002 (Chapter VII).

1. Motivational barriers

The main barrier in Estonian society is the fact that **the possibilities offered by the Internet are not associated with personal needs. It is believed that "computers are not for me"**. One of the reasons for this belief may be the Internet access structure typical to Estonia — as the standard of living of Estonian people is relatively low, not too many have computers at home; school children are above-average users of the Internet owing to the Tiger Leap Programme, while various institutions also switched to using computers quite quickly as they adopted the Western methods of work. As a result of these tendencies, it has become a common view that computers are either needed by children for school assignments or for adults if needed in their work.

Awareness of the possibilities of the Internet is rather good on the general level (the larger volume of information is mentioned the most frequently). The current non-users have often **not even thought about** why they do not use the Internet. We may conclude that the Internet is not a relevant topic for them. This also means that these people should not be addressed by starting from the term "Internet", but should be approached from the point of view of their daily lives (such as the TV shows they mostly watch).

The focus group study sought an answer to the question **in case of which services the Internet is perceived as a partner and which services may attract new users**. We primarily focused on the services offered by the state.

- When speaking of **communication**, the Internet is not perceived as a means of communication like the cell phone, fixed phone, SMS, letter and face-to-face communication. Only 14% of non-users mentioned that they would like to send or read e-mail messages on the Internet (Chapter VII). The cell phone is currently the greatest rival to the Internet in Estonia. Considering the fact that the number of cell phone users sharply increased in Estonia in 2001 and exceeded the 50% of the population threshold, the cell phone may prove a fruitful means of promoting the Internet.
- When **seeking information**, the perceived means are television, radio, newspapers, other people and telephone (in case of managing various personal affairs); the focus group participants did not spontaneously mention the Internet. Of all non-users, 24% mentioned a wish to use the Internet for seeking information (news / weather forecasts / education).

- o The belief that the information received from the Internet might not be **reliable** (up-to-date and precise enough) was evident particularly in the case of information necessary for the management of affairs.
- **In the management of personal affairs**, the only perceived Internet partner is the **Internet bank**; the Internet is not seen as a partner for public sector services, because these services are perceived in a very personalised way (the process is not distinguished from the person offering the service; one specific civil servant is seen as the decision-maker; every civil servant is believed to require different documents). There is a common belief that civil servants need to be met personally (often many times) to reach the desired outcome. When discussing the different services offered by the public sector, it appeared in the focus groups that people generally have little contact with public sector services. We may conclude that the introduction of a few separate services on the Internet will not increase the number of Internet users. The area that may attract new users when introduced on the Internet is health care. On the one hand, people come into contact with different health care services (doctors and pharmacists) most frequently, and on the other hand, people have to follow several troublesome procedures to benefit from these services.
 - o As regards managing one's affairs on the Internet:
 - **security is not a problem**; it was most often mentioned that "simple people like us" have nothing to fear. Of all non-users, 1% mentioned security concerns as the reason for not using the Internet (Chapter VII);
 - **no time gain is perceived**, particularly in the case of state services; there is a strong belief that results are not reached when managing affairs from a distance and at once. A saving of time may not be the argument that attracts current non-users to the Internet; a cheaper price could be a much more powerful argument;
 - **information provided on the Internet is not believed to be up-to-date and reliable**, or to specify all the requirements for various documents.

2. Skill barriers

Of all non-users of the Internet, 26% mentioned poor skills or the complicity of use as a reason for not using the Internet. At the same time, we have to keep in mind that it is easier to say that the Internet is unnecessary or inaccessible than to admit to one's lack of skills. The infrequent mentioning of poor skills as the reason for not using the Internet (lack of access was the most popular reason, followed by lack of need and lack of skills) may also give insight into the logic of Estonian people when it comes to the Internet -- they first expect to have a computer along with Internet connection, then a need to use it, and finally comes the willingness to learn.

In the focus groups we inquired whether computers and the Internet are easy to use and what the main obstacles to learning are. The most important result is that there are many people who consider the use of computers complicated both among those who have (slight) earlier experience and those who have no earlier experience in using computers.

- The Internet is difficult to use because of the **complicated logic of using computers**, and also the **complexity of Internet services**:
 - o **language concerns** (English for Estonians; Estonian and also English for non-Estonians in the case of content services). The cell phone has the advantage of being in the Estonian language;
 - o **memory concerns** (particularly in the case of retired people, but also “Blue Collars”), relating to poor opportunities for practice (what is learned requires repeating and further learning; if there is no computer, it cannot be done. Even when there is a computer at home, a “mentor” is needed who would give instructions on what to do and how to do it). The cell phone has an advantage because the owner carries and uses it constantly;
 - o **a fear of damaging** expensive (someone else’s) machinery (the cell phone has an advantage — it is cheaper). The cell phone is smaller and therefore less frightening;
 - o a fear of **“damaging” oneself** (transferring money to the wrong account).
- Social fears in case of learning in a group or using the Internet in a public place:
 - o learning in a group is difficult because of the **fear of lagging behind the group** (appearing the dumbest; constraining the groups’ activities by one’s poor performance);
 - o people are **afraid of demonstrating their lack of skills** at public Internet access points (to appear unskilled, to hinder others in their activities, e.g. in a queue to use bank services).
- Mentality and value orientations:
 - o **the lack of the principle of lifelong learning**. A majority of “Passive People” and “Blue Collars” are not used to the idea of further learning after the mandatory school education has been completed;
 - o people live peacefully **within the existing boundaries**, without a need for changes in their lives;
 - o a higher than average need for **hierarchy and order**: “I am older, i.e. wiser than my child”. Parents are not willing to break this illusion and demonstrate their poor skills;

- o lower than average **initiative and creativity** — when facing an obstacle, the people would rather give up than seek for new opportunities and try again.

3. Access barriers

The main place where the Internet is used in Estonia is the workplace (53% of Estonian Internet users aged 15–74), followed by home (40%), school (29%), the workplace or home of acquaintances (23%) and public Internet access points (15%) (source: Emor, e-track. March 2002 – May 2002). Home is the primary place where the Internet is used in Finland.

Today's non-users of the Internet would like to use the Internet at home. A majority of non-users cannot be expected to need the Internet in their work in the forthcoming years (retired people no longer work, the work of "Blue Collars" does not require computer skills). A majority of non-users do not wish or cannot use public Internet access points because of inconvenient opening hours, etc. These circumstances make economic barriers the greatest obstacle to access, as **people cannot afford to buy a home computer.**

- The monthly income of "Passive People" is EUR 64–128 per person. Most of it is spent on the inevitable goods.
- "Blue Collars" earn an average of EUR 64–192 per month per person, but their families are often young (with children) and their expenditure is much greater than that of retired people, and other household appliances are frequently considered more important than a computer.

Economic problems cannot be expected to be solved in the next few years, meaning that other solutions have to be sought to increase the number of Internet users. Hence, it is important to consider the barriers to using public access.

- There are two main reasons why PIAPs are unattractive:
 - 1) **"PIAPs are for younger and more skilled persons"** (unwillingness to demonstrate one's lack of skills);
 - 2) **going to a PIAP requires substantial effort** (reserving a computer, inconvenient opening hours for working people);
- o however, the most important, though hidden reason seems to be the **unwillingness to change the daily routine** (home–work–shop–home for "Blue Collars"; home–post office–shop–home for "Passive People").

Since neither "Blue Collars" nor "Passive People" wish to change their daily routines, it may be assumed that the existing PIAPs will not help to bring a majority of them to use the Internet. Powerful changes can only be brought about by new and powerful solutions.

IV. RECOMMENDATIONS FOR IMPROVING INTERNET PENETRATION

Tarmo Kalvet ja Daimar Liiv

1. Introduction

The recommendations were developed on the basis of the sociological research conducted by Emor in Estonia (Chapters V–VII, Annex 4), the interviews of PRAXIS with persons involved in the respective area (Chapter VIII) and an analysis of the expert forum discussion and the experience of other countries⁹.

The recommendations¹⁰ are divided into three categories according to the barriers, identified by the Emor studies, that prevent the current non-users of the Internet from becoming its (active) users. In addition, recommendations are given within each category specifically for each group of non-users and the proposals are prioritised depending on the scope of their potential impact.

The main groups observed were “Passive People” and “Blue Collars”, as the people belonging to the “experimenters” and “other non-user groups” will find their way to the Internet within the framework of projects already launched. The catalyst in their case is an extension of the current activities particularly through breaking the motivational barrier, as members of this group include potential users of public Internet access points (PIAPs). The most important actions in the short term are training and more efficient informing about the (private sector) services available.

The conducted research shows that both in respect of effectiveness as well as the guarantee of a broader economic development, it is reasonable to focus on the “**Blue Collars**” group, for whom the motivation problem is the main problem at the moment (“computers are not for me”, “it’s necessary for children or those who need it at work”). In their case, the most important steps are to:

- introduce the uses of the Internet more extensively and to stress the direct benefits that the target group will receive from adding substantial added value to e-services;
- translate the information content of the existing private sector information into Russian, accompanied by a relevant advertising campaign;
- train the people at their workplace;
- ensure Internet access for the Russian speaking population at specialised PIAPs (SPIAPs) and to carry out a supplementary information campaign (also concerning the existing PIAPs).

⁹ Many of the recommendations provided here have already been discussed in Estonia (mainly at the brainstorming sessions held by the Look@World Foundation in Pärnu in 2001 and in Haapsalu in 2002) and the authors have also used the respective materials.

¹⁰ Although the recommendations proposed here follow from the sociological research conducted by Emor, they only reflect the positions of the authors.

In order to bring “**Passive People**” closer to the Internet:

- a broader understanding of “Internet is for everyone” has to be promoted;
- PIAPs have to be created at their places of gathering (social organisations, etc.) and also, for example, at post offices, if possible.

2. Motivational barrier

2.1. Nature of barrier and its relation to the groups

The motivational barrier to Internet use has several reasons of a differing nature. A fundamental reason is the development of the Internet as an economic phenomenon. Namely, despite extremely high expectations, the “Internet economy” has proved successful only in a few branches of the economy (particularly in banking and information-related branches of the economy). These fields are largely orientated at developing services for the more innovation-minded groups of society, while the development of services directly aimed at other groups has more seriously appeared only in the last few years. When comparing reality to the initial, overly optimistic attitude, it is clearly noticeable that people have become much more rational in respect of the possibilities and benefits of Internet use and relate the matter with their personal needs rather than jumping on the bandwagon.

The study by Emor shows that one-half of non-users see various benefits in computers and the Internet, and the problem lies in access and the acquisition of skills -- they do have at least a minimum level of motivation. Those non-users mainly belong to the “experimenters” and, to a lesser extent, also to the “Blue Collars” groups. Thus, we should not forget, when speaking about motivation, concerns that nearly a half of non-users of the Internet already have a positive attitude toward the Internet and a mere information campaign will have little effect on them. The main factor that may bring them to the Internet is direct training and overcoming the price barrier. Retired persons form another large group, a vast majority of whom (69%) do not see any benefits in the Internet and who, indeed, need a positive emotion about the Internet in the first place.

Although every other non-user finds that computers and the Internet have various good qualities, two-thirds of the non-users do not find a single area that they could personally benefit from when speaking about personal uses of the Internet. Therefore, the target groups’ awareness of the existence and content of services has to be guaranteed alongside the development of such content services. It is also important to note that the concern of the Estonian population is not so much a lack of trust in technology and related security problems (the positive attitude probably roots in positive experience with bank cards, for example), but rather, non-users believe that the information is not reliable (precise and up-to-date enough). Therefore, there is a reason to assume that if services are

also available in an alternative form within the meaning of e-services, and the use of an e-product/service does not prove revolutionarily attractive (the price of technology enabling the use of e-services is high, the added value of an e-product/service is low), content services reasonable for the target groups might not generate sufficient motivation to become Internet users.

The study by Emor (Chapter VII) shows that of the positive qualities of the Internet mentioned, those relating to information dominate -- an average of 40% of non-users of the Internet find that the Internet is good, as it gives access to a larger volume of information, because "the needed information can be found conveniently without leaving home" (23%) and one "can study and discover anything of interest" (19%). Considering the groups of non-users and the channels they use to get information -- television, radio, newspapers, other people and telephone (in the case of management of various affairs) -- the existence of the Internet as an important information channel has to be acknowledged to them. At the same time, it has to be kept in mind that only 14% mentioned time saving as a positive quality of the Internet and only 2% mentioned the lower service charges.

Related to the above is the fact that both non-users and users of the Internet see information seeking as its main function. However, non-user groups already have well-established channels for finding information (television, radio, newspapers). Internet banking is seen as the sole Internet partner for managing one's affairs, and public sector services are mainly associated with the specific persons who provide the service. Therefore, in order to achieve a rational Internet use, non-users have to be demonstrated that the Internet is a channel necessary specifically for them. This in turn requires an internal reorganisation of the work of the public sector to avoid the disappointment of users and a further strengthening of the belief that "no outcome can be reached when doing things only once and at a distance".

Another important watershed in Internet use occurs when looking at age groups. Computer and Internet penetration has required all of those who come into contact with it a development of new skills regardless of age, and in the case of older people, also a change in certain established routines. As younger people acquire new skills more easily and with less problems, the Internet is frequently seen as a new thing aimed at the youth. Therefore, many older, and also some middle-aged people have built barriers to adapting to the Internet, the most illustrative of which is a fear to damage one's authority. Studies by Emor show that these psychological attitudes such as "Internet is for the young" are present in Estonia and play a fairly great role, alongside other barriers, in Internet avoidance and the reasoning of avoidance on the personality level. To bridge this gap, an attitude has to be shaped in society that everyone regardless of age benefits from the Internet. The choice of the correct communication channel is crucial to breaking such barriers, as the lack of interest barrier can otherwise not be broken in any way.

When drafting measures to overcome the motivational barrier, it has to be taken into account alongside the interests and attitudes of the target group that the state plays a very important role here due to the relatively inactive attitude of the business sector. The latter owes to the larger expenses on the development of services and uncertain receipt of income from groups with generally a lower buying power. The state can take various economic and administrative measures here.

2.2. Recommendations for overcoming the motivational barrier

General recommendations for all groups

- 1. Use traditional media channels to introduce the possibilities of the Internet in a language and form comprehensible to the target groups. Explain the nature and positive aspects of Internet use to the "Blue Collars" and "Passive People" and stress the direct benefits to users, by promoting the attitude "Internet is for everyone."**

Impact: The choice of the correct channels (such as popular television series) and the provision of detailed guidelines (such as information on the existence of PIAPs) simultaneously may have a great effect.

- 2. In cooperation between the public and private sector, to develop special Internet-based services aimed at the target groups, which are more convenient and useful when compared to ordinary services. The public sector should order from the private sector the solutions necessary for various target groups of non-users and/or grant tax incentives to the developers.**

Impact: A great effect on current Internet users to intensify their Internet use even more, but a smaller effect on bringing non-users to the Internet. Sociological research (Chapter VII) showed that the perceived positive qualities of the Internet are mainly related to information: an average of 40% of non-users of the Internet find that the Internet is good because it offers access to a larger volume of information. "The convenience of finding the required information without leaving home" (23%) and "the possibility to study and discover anything of interest" (19%) also relate to information.

- 3. Draft a policy and action plan at the Government of the Republic level concerning the social aspects of introducing modern ICT means (particularly, but not limited to the digital divide), involving interested and competent representatives of the non-profit and business sectors in drafting these documents. The Government of the Republic should launch a longer-term research programme to study the social aspects and monitor developments relating to the adoption of ICT.**

Recommendations concerning "Blue Collars"

4. Translate the existing Internet versions of public and private sector services into Russian and add a Russian version to new services from the start.

Impact: Great. A conclusion from the study by Emor (Chapter VII): "Since 40% of non-users of the Internet find that the Internet is good because it allows access to a greater volume of information, and considering the socio-demographic background of non-users, a negative attitude toward the Internet could be reversed by the introduction to the market of information services that could be useful for people aged over 35, to inhabitants of other nationalities (non-Estonians), retired persons and workers".

5. Introduce to the "Blue Collars", in the usual information channels and in a simple form, the Internet services offered by the public and private sectors the use of which gives an immediate economic effect, and do it together with basic training so that the target group can get hands-on experience at once. To create additional Internet services directly beneficial to the target group.

Impact: Difficult to predict, but may generate interest and break the motivational barrier: it followed from the Emor study (Chapter VII) that the "Blue Collars" should not be talked to about what benefits the Internet will offer in the future; they have to see real opportunities bringing immediate personal gain, such as employment classifieds, car classifieds, cheap travel." It is important that the target groups are efficiently informed of the availability of the services and that access problems are solved (the preferred access points are the home and/or the workplace). The service must be of a substantially greater added value when compared to alternative solutions (such as newspapers).

6. Enforce lower state fees (and other service fees) when paid via the Internet in areas concerning the activities of "Blue Collars".

Impact: May be great if the financial gain is clearly perceivable.

Recommendations concerning "Passive People"

7. Create a health care services portal on the Internet.

Impact: A huge potential. The study showed (Annex 4) that health care services are the most used and most problematic when it comes to the management of one's affairs (from a visit to and advice from a doctor to the receipt of medicines from a pharmacy), and hence, the availability of a complex service on the Internet may attract new users.

8. Create a special portal for "Passive People" in cooperation between different sectors.

Impact: Small at first, but may grow to average or great over time, particularly if linked to information of interest to retired people and the service is actively introduced to them on the usual channels. Conclusions of the Emor study (Chapter VII) show: "It may be guessed on the basis of the focus groups and value orientations that "Passive People" are most likely to be interested in different kinds of information: men are interested in the weather and news that are otherwise not available, and women in gardening and home information."

Recommendations concerning "experimenters"**9. Introduce simpler possibilities of Internet use on ordinary media channels, taking into account the fast lifestyle and interests of "experimenters".**

Impact: Great. Members of the "experimenters" group will find their way to the Internet themselves with the support of different projects already launched in Estonia. In their case, the catalysts will be an extension of on-going activities particularly through breaking the motivational barrier, as the members of this group are potential users of public Internet access points (PIAPs), for example. Training and more effective information on the existing (private sector) services are the most important steps in the short term.

3. Skill barriers

3.1. Nature of barrier and relation to the groups

Skill barriers together with motivational barriers form an important obstacle to the adoption of the Internet most directly related to the person himself or herself. As a rule, there are no simple and quick means giving a massive effect to overcome this barrier. At the same time, overcoming of the barrier and acquisition of Internet skills usually results in the application of the newly acquired skills. When drafting activities for overcoming the skills barrier of non-users of the Internet, it has to be kept in mind that the target group consists of adults whose learning and teaching logic differs from those of children. This has to be taken into account both in the preparation and application of a teaching methodology and in the choice of a study place, group and teacher.

When choosing means to overcome the barrier, it should also be kept in mind that the public authorities' possibilities to interfere are relatively limited and indirect, and a majority of effective measures largely depend on the skills and knowledge of the institutions and people specifically engaged in teaching.

Similarly to many foreign countries, great attention has been paid to ICT training in Estonia in recent times. The Look@World Foundation is providing short-term free Internet training for 100,000 non-users of the Internet. This undertaking certainly plays a great role in overcoming the lack of interest (by introducing attractive services, stressing the direct benefits of using the service). However, the problem that may arise with the older population is that "...quite rapidly appearing barriers may reduce the newly emerged interest, particularly language problems in coping with the user interfaces of computers and a relatively poorer ability to memorise the necessary actions. A psychological obstacle may be the unwillingness to demonstrate a lack of skills" (Chapter VII). That is why the effectiveness of training programmes will have to be evaluated (to make sure that trainees do become Internet users) and improved where necessary.

The nature of the skills barrier is best characterised, according to the RISC study data, in the wish of non-users to have a computer at home, in the Estonian language, and to have a familiar person skilled in using it.

Training should thus be organised according to the following principles:

- small groups;
- a computer for everyone;
- a "teaching" teacher;
- a possibility for later practising.

3.2. Recommendations for overcoming skills barrier

General recommendations concerning all groups

- 10. The public authority in cooperation with the non-profit and business sectors should encourage a favourable attitude toward the concept of lifelong learning. For example, the state should facilitate complementary training (in Internet skills) by tax policy incentives (exemption of (computer) training from fringe benefit tax).**
- 11. The state and the private sector should jointly finance the creation of special training programmes for non-users of the Internet, as well as the preparation and complementary training of the relevant teachers. For example, if the outcome of the Look@World Foundation's training project for 100,000 inhabitants is positive, a similar project should be launched by the state.**

Recommendations concerning "Blue Collars"

- 12. Encourage participation in computer training or a direct training offer by the employer.**

Impact: May be great if related to career. The Emor study showed that computer and Internet training must take place within the scope of daily life (preferably at the workplace).

- 13. Create conditions to train "Blue Collars" in a suitable environment (in a "Blue Collars" training group) and at a suitable time in their mother tongue.**

Impact: Great. Overcoming the skills barrier is crucial for the "Blue Collars", because even if they have a home computer, children may be its only users. This is due to a lack of foreign language skills, a fear of new technology (a fear of damaging the computer), non-perception of the need for lifelong learning, a fear of demonstrating one's lack of skills to others, a poorer ability to overcome any obstacles that may arise. Also, people with basic, secondary or secondary vocational education are not used to participating in adult training. The people also require very clear instructions and guidance, as opposed to people with a more flexible attitude who would seek solutions themselves.

- 14. Offer more computer and Internet training as a part of training for the unemployed (such as finding job advertisements on the Internet) alongside introduction of local PIAPs.**

Impact: **A great effect on the unemployed group. A good opportunity to apply direct means of influence.**

15. Actively propagate computer training and the idea of lifelong learning in the specific media channels used by the “Blue Collars”.

Impact: **Indirect and small at first.**

Recommendations concerning “Passive People”

16. Develop a special methodology for teaching older people computer skills in their mother tongue, taking into account their lower learning and memorising ability, and to train them in a multi-cycle programme.

Impact: Existing, but not very large. The effect can be increased by a combined approach that also addresses other barriers.

4. Access barrier

4.1. Nature of barrier and relation to the target groups

The access barrier is a main obstacle to a large-scale Internet penetration in countries with a lower GDP. Even many rich countries, such as the EU member states, see a contribution to overcoming this barrier as a main and broad opportunity to increase the number of Internet users. Various economic regulatory means are used for this (such as tax incentives and support to companies offering ICT products and services), but also direct political interference with market relations (such as state-financed projects for the establishment of telecommunications infrastructure and the sale of second-hand computers to the target groups at a discount). These measures have proved unaffordable to many poorer countries, who have tried to find cheaper solutions. One of the solutions is the establishment and active propagation of a PIAP network.

Because of the limited economic resources at the government’s disposal and the prevalent ideology of a liberal market economy, the Estonian ICT policy has so far paid little attention to the economic and policy means that the state could use to improve Internet penetration by lowering the access barrier. The main strategy that has been employed to bring people to the Internet has been the development of a PIAP network in cooperation between the private and public sectors. A nationwide network of public Internet access points has been created by today in local government bodies and particularly in public libraries.

The access barrier in Estonia, besides resulting from direct economic reasons, also owes to the fact that a large proportion of non-users do not work (60% of the "Passive People" group) or their work does not involve computer use (largely the "Blue Collars" and in part also the "experimenters" group). However, statistics show that computers are mostly used at work and at school. The Internet access structure characteristic of Estonia (in schools -- for schoolchildren, at work -- for those whose job requires it; but not at home) may have caused the understanding that computers and the Internet are not useful for the personal interests of people.

4.2. Recommendations for overcoming the access barrier

General recommendations concerning all groups

17. Review the economic and political means at the disposal of the Government of the Republic that can be used for a quick breaking of the price barrier, and to prepare a clearly focused policy quickly and in cooperation with the private sector. Amongst other things, the used computers of the public sector could be sold at a discount or given away free to the risk groups.

Recommendations concerning "Blue Collars"

18. The public sector jointly with the business sector should create opportunities for the availability of cheap computers and a reduction of Internet connection costs (such as exempting employers from the fringe benefit tax on the home computers and home Internet connection of employees).

Impact: A substantial decrease in the price of computers and Internet connection has a huge effect. But if the overall attitude "computers/the Internet are not for me" is not simultaneously altered and the acquisition of computer skills is not supported, then Internet penetration will not significantly improve among the "Blue Collars" and "Passive People", because their home computers will remain in the use of their children. Exemption of the fringe benefit tax is likely to have a medium effect, as these types of incentives are not common among employers in Estonia.

19. Telecommunications operators should conduct a discount campaign for connecting home computers to the Internet.

Impact: Great. Forty per cent of home computers have no Internet connection.

20. Campaign to increase home computer penetration.

Impact: Great. In the fourth calendar quarter of 2001, 156,000 Estonian inhabitants aged 15–74, who did not have a home computer, intended to purchase one in the following year. The main argument was support to the education process of children (Chapter V). However, a situation may emerge where the only users of the home computer are children, and a positive effect on the parents' computer skills will only appear in the long term.

21. Establish public Internet access points in places of easy access to “Blue Collars” where they would be surrounded by other “Blue Collars”, or provide them separate hours from younger users or separate computer facilities at existing PIAPs. This particularly concerns non-Estonians (and the respective Estonian regions), as nearly 50% of non-Estonian non-users specifically referred to the access problem.

Impact: A huge effect on generating an initial contact with the Internet, particularly when compared to PIAPs of public libraries. When PIAPs are created at workplaces, the bulk of the burden will be placed on employers, whose gain will lie in a stronger link of employees with their workplace, and in the longer term, a labour force with a higher competitive power. Home computer use will be preferred in the longer term.

22. An information campaign on the existing PIAPs among the Russian-speaking population.

Impact: Dissemination of information among the non-Estonian (Russian) “Blue Collars” will prove fruitful, as every other non-Estonian (49%) specified lack of access as the reason for not using the Internet. The campaign should be aimed at converting the “active” part of the Russian population into Internet users (this stage has already been completed in the case of the Estonian speaking population) (Chapter VII). In the long run, this target group also prefers to use a computer at home.

Recommendations concerning "Passive People"

23. Create specialised points of access at the gathering places of "Passive People" (such as hobby organisations) and at post offices.

Impact: Great, if specific services are introduced by a skilled and accepted teacher.

24. Explanatory work for offering "Passive People" discount packages by telecommunications companies.

Impact: Difficult to predict; some effect is likely to occur, but there is a risk of abuse in families where several generations live together.

Recommendations concerning "experimenters"

25. To develop the PIAPs network and to find or reserve suitable Internet hours for "Passive People".

Impact: Medium, may be great as regards the first contact. However, the members of this group would prefer the home as the main place of computer use, and PIAPs would serve as an intermediate stage before home use.

26. To develop solutions for guaranteeing a quick and easy retrieval of information.

Impact: Not particularly effective in the involvement of non-users, but helpful in turning light users into more frequent users.

PART II: STUDY REPORTS

V. SPECIAL ANALYSIS OF E-TRACK	
Kristina Randver	48
1. Introduction	48
2. The number of computer users has remained relatively stable over recent years.....	49
3. There are 591,000 non-users of the Internet	51
4. Home computer penetration has rapidly increased over recent years.....	54
VI. FOCUS GROUPS SUMMARY	
Mari Kalkun	58
1. The Internet is not perceived as a means of seeking information for personal purposes	58
2. The cell phone is the biggest rival to the Internet as a means of communication in Estonia.	59
3. Only Internet banking is seen as a virtual partner in the management of affairs.....	59
4. Lack of need as the main reason for non-use of the Internet	60
5. Lack of opportunities and skills are reasons for light use of the Internet.....	60
6. PIAPs are associated with children and other skilled users.....	61
VII. STUDY OF VALUE ORIENTATIONS OF NON-USERS OF INTERNET	
Mari Kalkun	62
1. Introduction	62
2. Non-users of the Internet.....	62
3. Positive qualities of the Internet	65
4. Which functions of the Internet would non-users like to use?.....	67
5. Reasons for not using Internet	68
6. How to reach "Passive People"?	69
7. How to bring the "Blue Collars" to the Internet?	69
8. "Experimenters" will very likely find their way to the Internet themselves	71
VIII. ESTONIAN EXPERTS' VIEW OF THE PROBLEM	
Andre Krull	72
1. Assessment of General Developments	72
2. Digital Divide in Estonia	73
3. Recommendations	76
4. Prognosis of Estonia's development.....	78

V. SPECIAL ANALYSIS OF E-TRACK

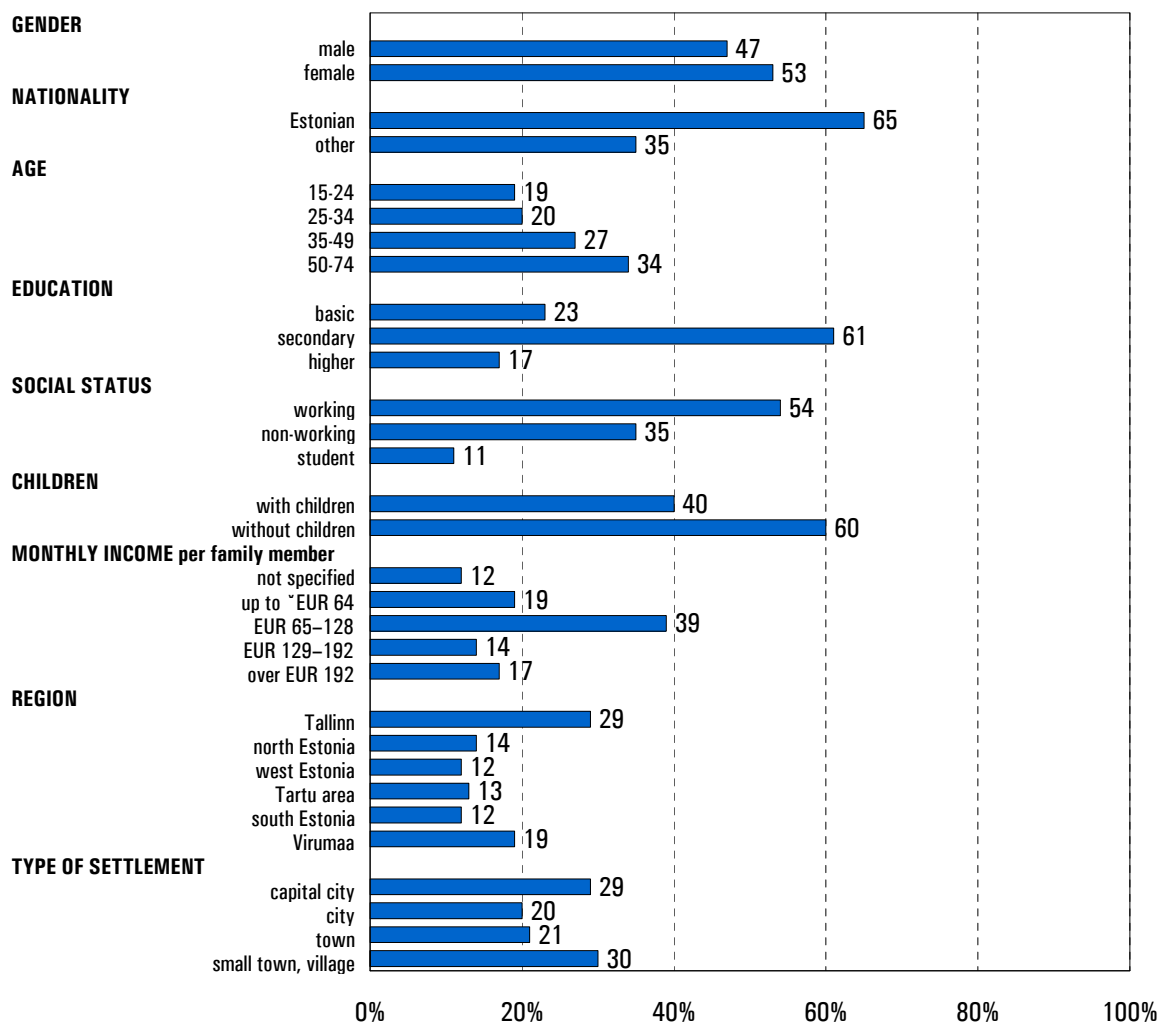
Kristina Randver

1. Introduction

During the last five years, both computer and Internet penetration have increased in Estonia, while there still are many people who have never used none of those. This Chapter gives an idea of who these people are.

Figure 1 provides a profile of Estonian inhabitants aged 15–74, to illustrate the structure of the respective population.

Figure 1. Profile of Estonian population aged 15–74
(% of people aged 15–74, N=1,104,000)



2. The number of computer users has remained relatively stable over recent years

The number of computer users has remained relatively stable over recent years. When compared to 1997, the share of people who have used a computer during the six months preceding the study has increased by 13%, forming 42% of the Estonian population aged 15–74 by the end of 2001 (Figure 2).

In 2000, the number of computer and cell phone users was roughly equal among Estonian inhabitants aged 15–74 (Figure 2). In 2001, the number of cell phone users increased remarkably and by the end of the year, more than one-half of the particular age group used a cell phone.

The number of Internet users has tripled over the last five years (Figure 2). In the fourth quarter of 2001, every third Estonian inhabitant aged 15–74 had sent an e-mail or used other Internet functions during the six months preceding the study. (As of August 2002 the rate of Internet use is 39% in the 15–74 age bracket; E-track, June – August 2002, Emor). When compared to the fourth quarter of 2000, the frequency of Internet use has also increased in 2001 (Figure 4). Two-thirds of those who have used the Internet at least once in their lives had used the Internet during the week preceding the study.

Figure 2. Computer, Internet and cell phone users
(% of people aged 15–74)

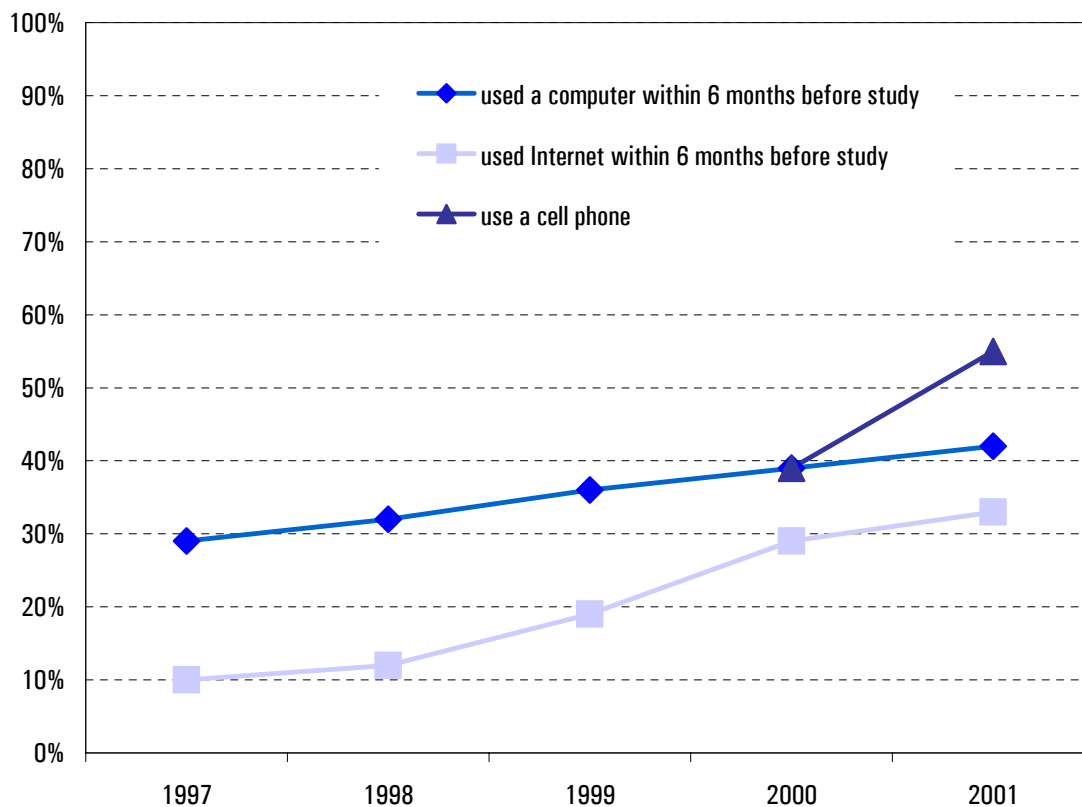
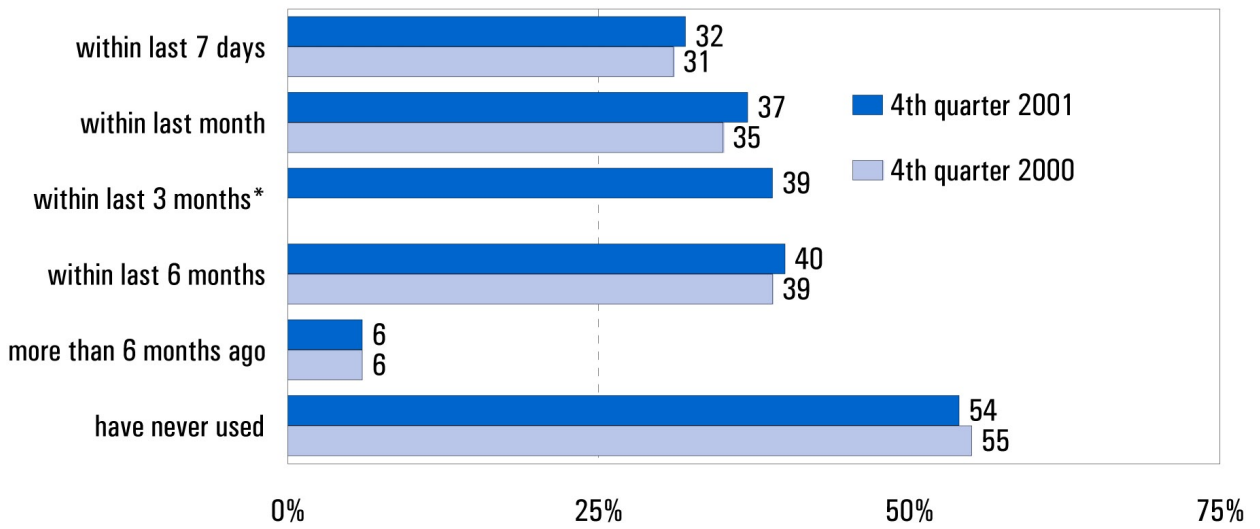
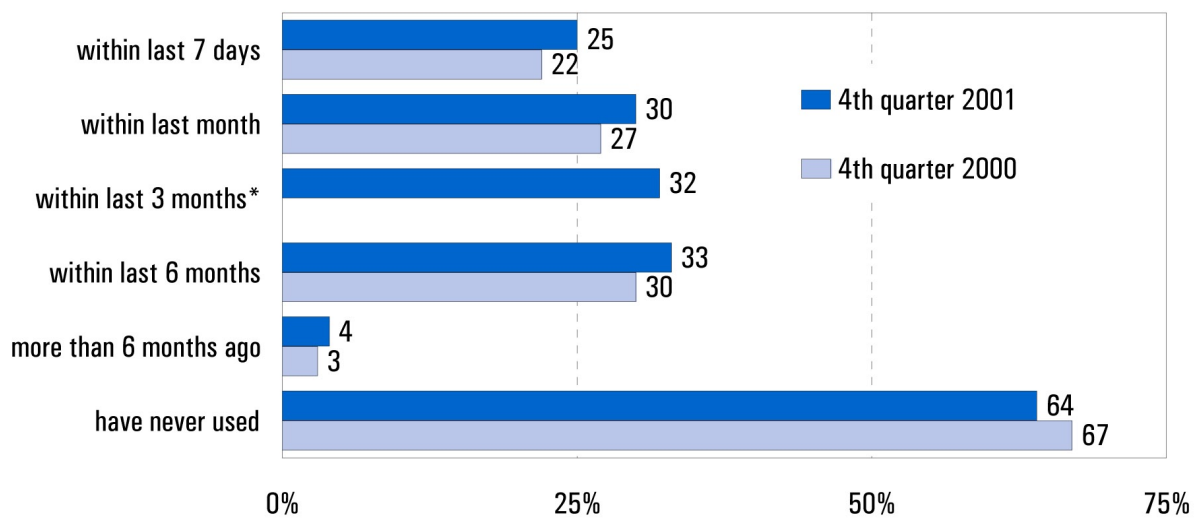


Figure 3. Frequency of computer use
(% of people aged 15–74)



* The alternative was not posed in 4th quarter of 2000.

Figure 4. Frequency of Internet use
(% of people aged 15–74)



* The alternative was not posed in 4th quarter of 2000.

3. There are 591,000 non-users of the Internet

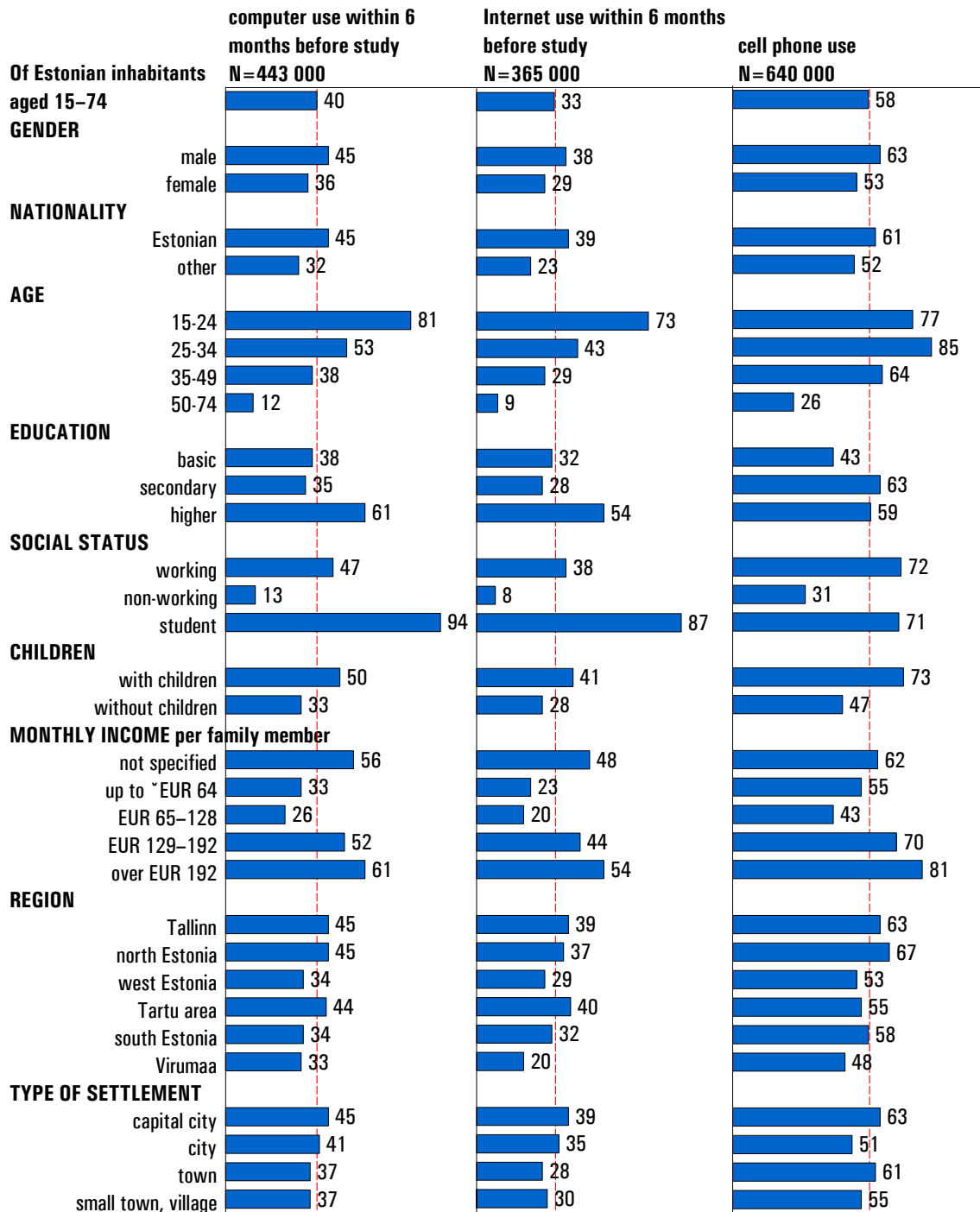
The number of people who have never used a computer was 591,000 in the fourth quarter of 2001, i.e. 54% ($\pm 2.5\%$) of Estonian inhabitants aged 15–74. Among non-users, the share of the following segments is above the average: other nationalities, people aged 50–74, people with basic and secondary education, people with lower than average income (less than EUR 128 a month per family member), and inhabitants of western and southern Estonia and the Virumaa region (Figure 6).

A comparison of the population who have never used computers in the fourth quarter of 2000 and in the fourth quarter of 2001 shows that computer penetration has increased on account of the following groups: non-Estonians, people with an average income, and inhabitants of northern Estonia.

Non-users of the Internet form 63% ($\pm 2.5\%$) or about 700,000 of the Estonian population aged 15–74 (fourth quarter of 2001). A study of the different groups who have never used the Internet shows that the groups in which the number of computer users was below average practically coincided with the groups where the number of Internet users was below average (Figure 6).

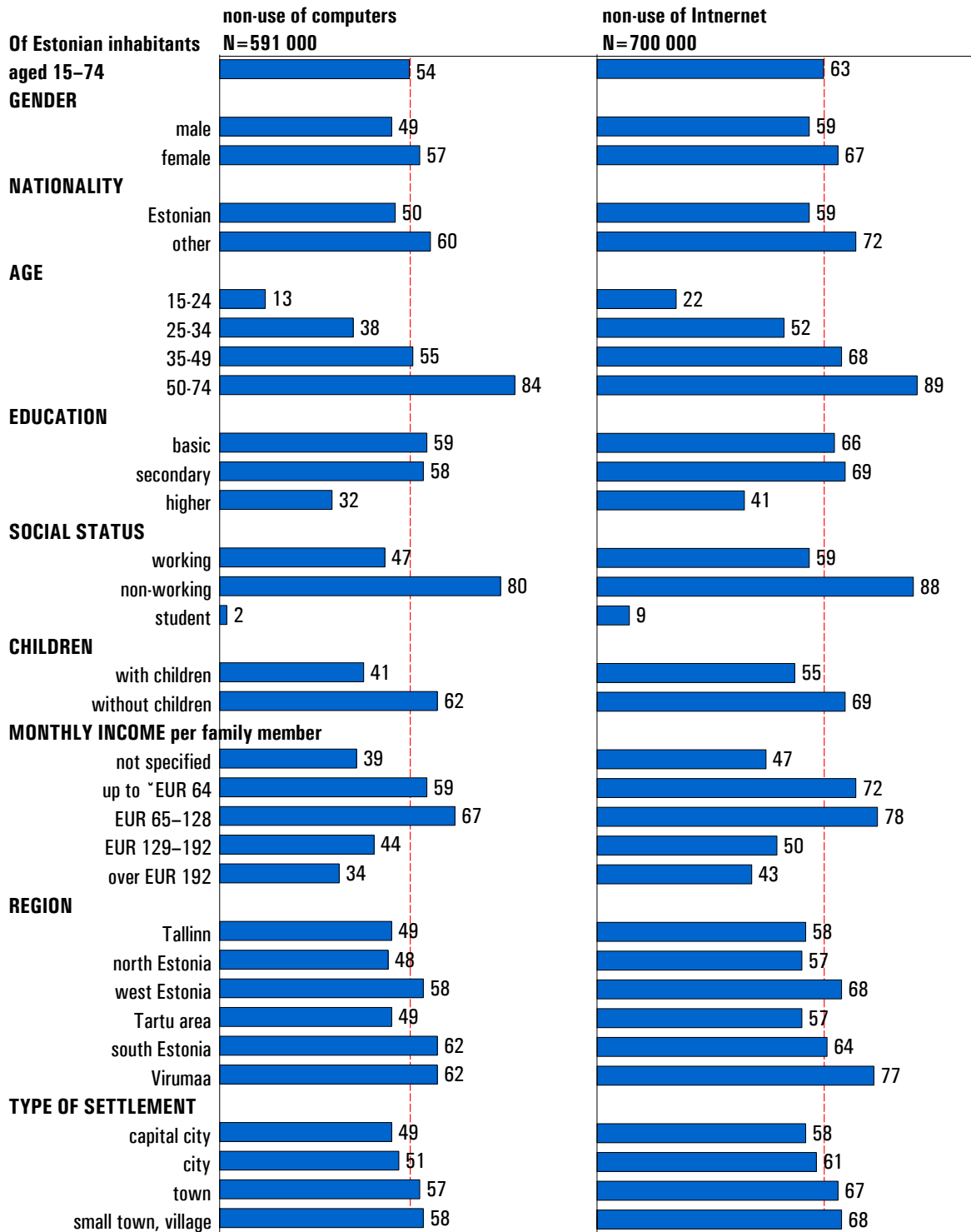
The number of people who are computer users but are not Internet users has decreased during 2001. Internet penetration has increased mainly on account of the following groups: non-Estonians, people aged 35–74, employed people, people with a slightly higher than average income (EUR 128–192 a month per family member) and inhabitants of northern Estonia.

Figure 5. Computer, Internet and cell phone use by target groups*



* The Figure shows how many representatives of each demographic group have used a computer during the 6 months preceding the study, i.e. segments of respondents should be read by the lines. For example, 45% of men have used a computer.

Figure 6. Non-use of computers and Internet in target groups



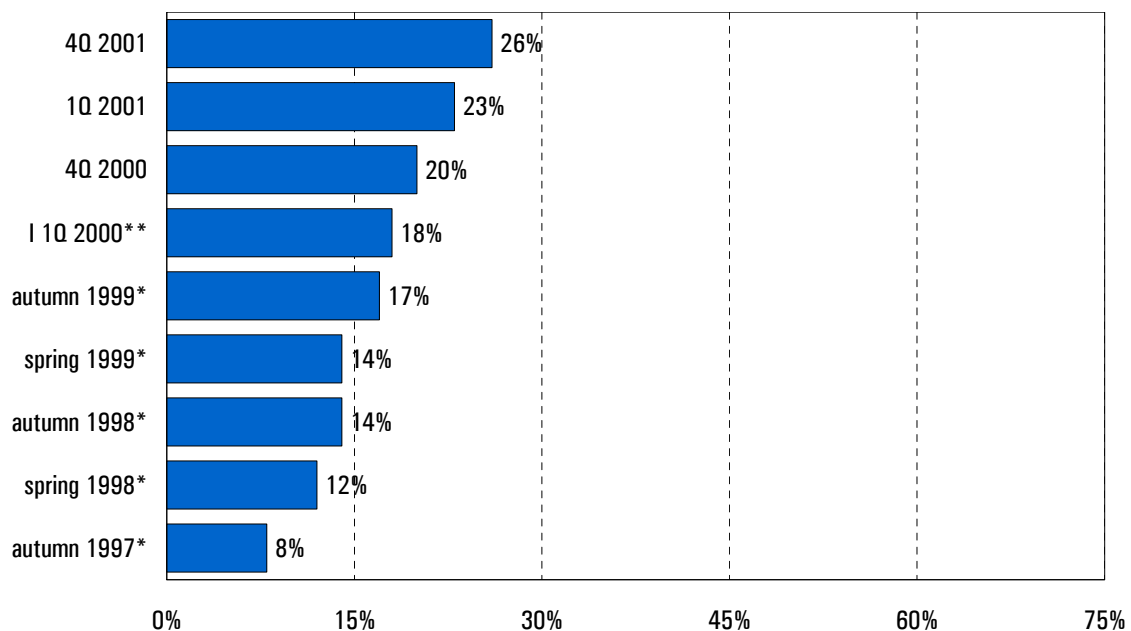
4. Home computer penetration has rapidly increased over recent years

The following is an overview of how many inhabitants of Estonia have a computer at home and who the computer owners are. When compared to 1997, the number of home computer owners has increased almost three and a half times: in the fourth quarter of 2001, 26% ($\pm 2.2\%$) or about 284,000 inhabitants of Estonia aged 15–74 had a home computer (Figure 8). Of those who have used a computer at least once in their lives, 52% do not have a home computer, meaning that they are using a computer either at work, school, public Internet access points or elsewhere. There are 7% of people who have a computer at home but have not used it.

Among owners of home computers, there is a higher than average percentage of Estonians, males, up to 34-year-olds, people with a higher education, working people and pupils/students, families with children, people with a higher than average income and inhabitants of Tallinn and northern Estonia (Figure 8).

In the fourth quarter of 2001, eighteen per cent ($\pm 2\%$) or about 199,000 inhabitants of Estonia aged 15–74 intended to purchase a home computer within the year following the study (Figure 8).

Figure 7. Home computers
(% of people aged 15–74)



* Source: BMF Gallup Media, Eesti Meediauuring

** The survey only covered personal computers.

Other survey periods also cover laptop computers.

Summed results are presented.

Those who intend to purchase a computer are mostly younger people (up to 49 years old), working people and pupils/students, families with children and people with a slightly higher than average income.

In the fourth quarter of 2001, fifteen per cent ($\pm 4\%$) of those who already had a home computer intended to purchase a new computer in the following year. Of the inhabitants of Estonia aged 15–74 who do not have a home computer, 19% ($\pm 2.5\%$) or about 156,000 intend to purchase a computer.

Some changes have taken place in the year 2001 among those who intended to purchase their first computer: the percentages of non-Estonians, people with a lower income and inhabitants of the capital city have increased.

When viewing the intention to purchase a home computer among inhabitants aged 15–74 across the groups of users and those who have never used a computer, we can see that among users, up to 24-years-old and inhabitants of smaller towns are mainly inclined toward purchasing a home computer. Of the people who have never used a computer, people aged 25–49, working people, families with children and people with a higher income have purchasing plans.

The main trigger for purchasing a computer is support to the development of children (Figure 9). Internet use as the purchase argument played a much greater role in the fourth quarter of 2001 than it did in 2000, while it positioned third or fourth among the triggers identified in the study.

Those who intend to purchase a computer to support the development of their children are primarily women, Estonians, people aged 25–49, people with a secondary education, working people, families with children, inhabitants of cities (except Tallinn) and rural settlements.

An observation of the home computer purchase arguments among people who have and who have not used a computer shows that those who have used computer named studies, a home office and Internet use as more or less equal purchase arguments, but among those who have never used a computer the argument of supporting the development of children dominates.

Figure 8. Home computer ownership and purchase intentions in target groups
(% of target group)

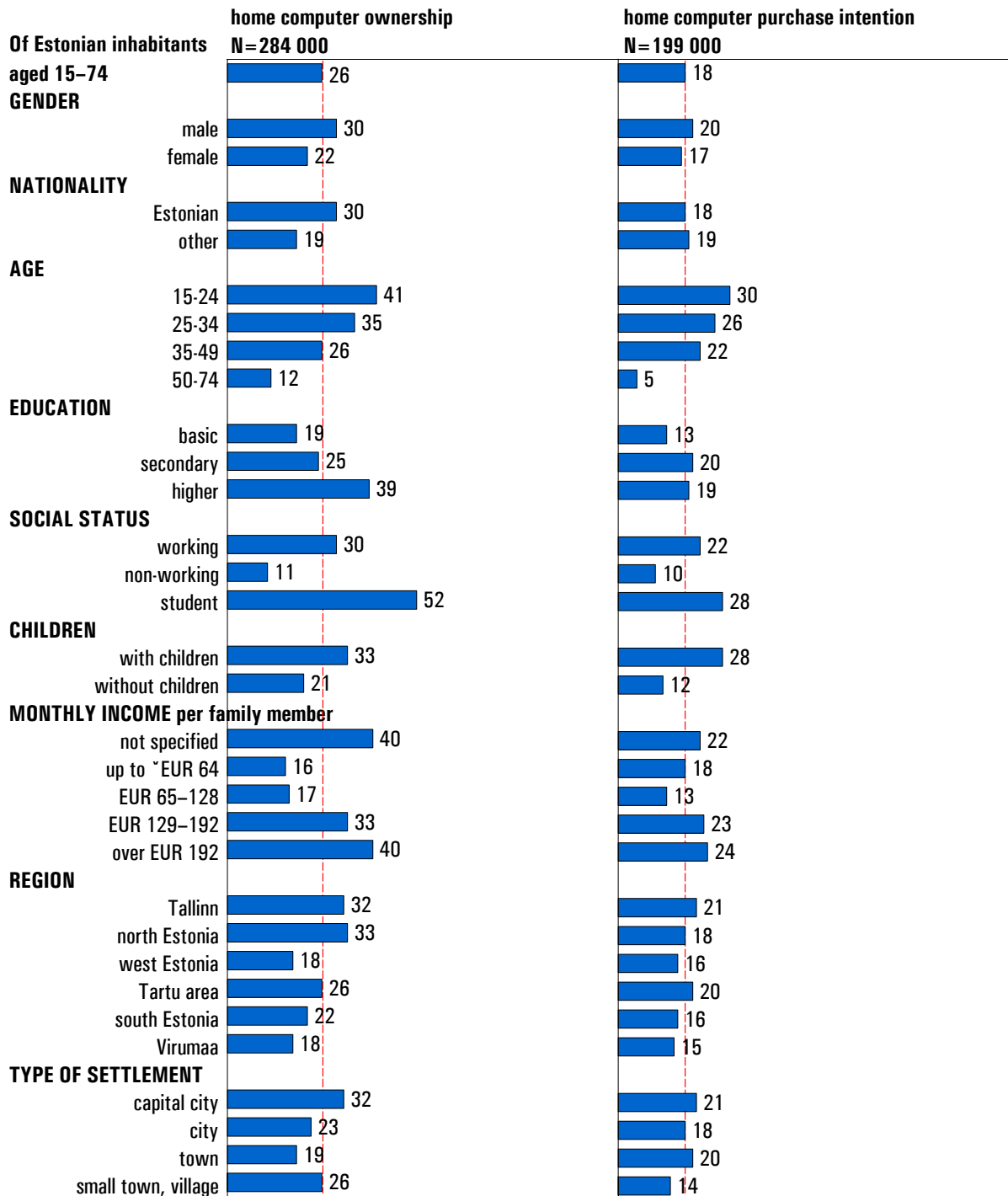
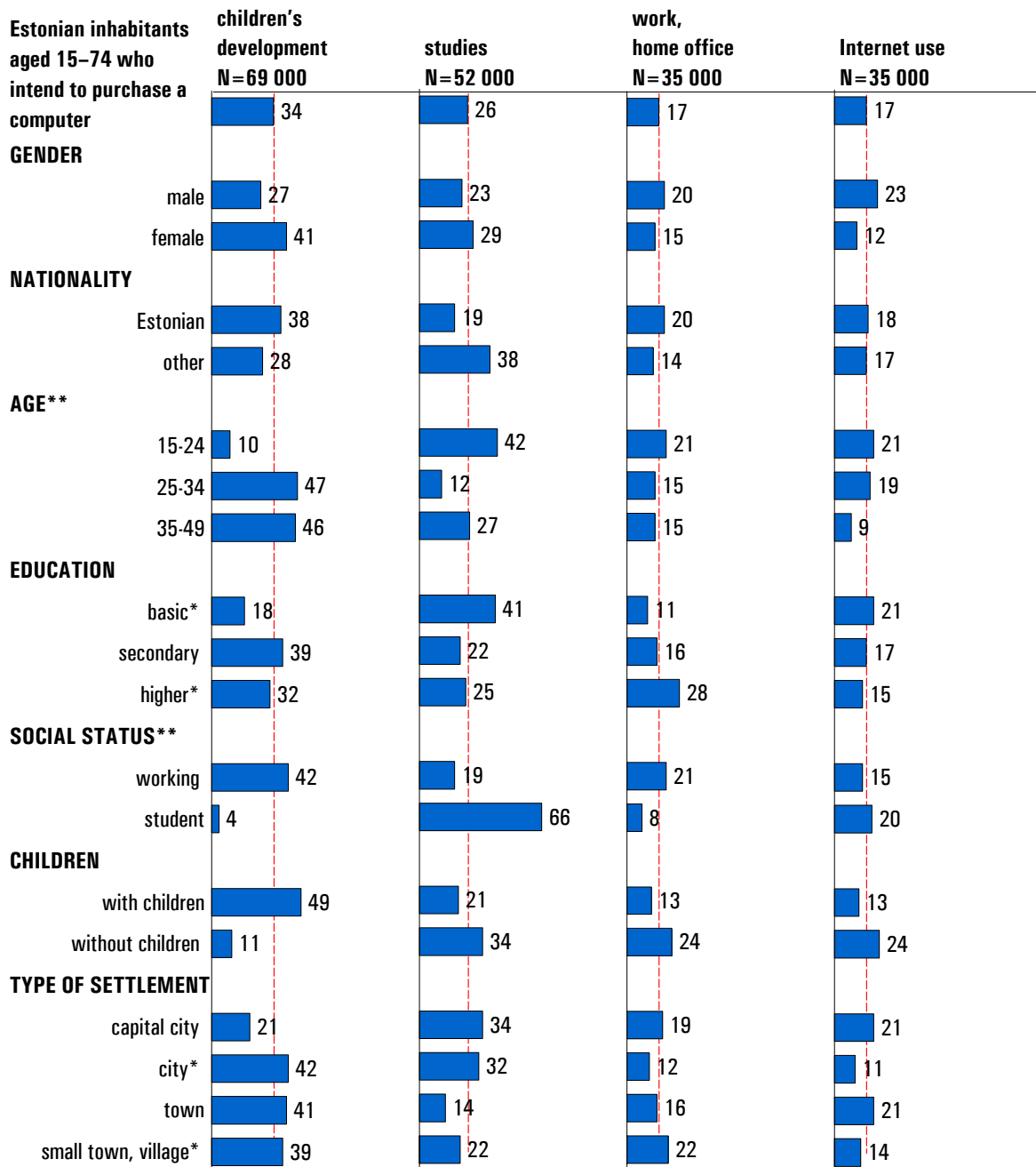


Figure 9. Main reason for purchasing home computer
 (% of those who intend to purchase a computer, N=199 000)



* The greatest statistical error has to be applied when interpreting the results, as the number of respondents in the target group was small.

** Results for age group 50-74 who are non-working are not indicated as the number of respondents was too small in these segments.

VI. FOCUS GROUPS SUMMARY

Mari Kalkun

The following summarising analysis (the full report can be found in Annex 4) has been structured relying on the premise that in the most generalised view, the Internet can help people in information searching, in communications and management of affairs. The mapping covers the needs of Estonian inhabitants in these areas at the moment, the ways these needs are currently satisfied, and the obstacles that prevent people from using the Internet for the same purposes.

1. The Internet is not perceived as a means of seeking information for personal purposes

The need for information is acknowledged by everyone: people want to receive news and other services offered by the media, and to have information about their hobbies and recreational activities. Today, the means that mostly offer information to light users or non-users of the Internet are the traditional media channels (television, radio, newspapers and magazines), telephone and other people (friends, neighbours, colleagues). The Internet as a means for obtaining information was not mentioned by people without any earlier Internet experience, i.e. they do not associate Internet with the information they are interested in.

The information mentioned above most frequently concerns the personal life of people. The possibilities of the Internet are acknowledged when seeking work-related information, but most of those who participated in the groups do not need the Internet (or a computer) in their work. This is the first major gap as regards the opportunities of the Internet in the knowledge of non-users and light users of the Internet: "it is believed that the Internet serves work purposes and is not helpful in personal life".

It is known that the Internet is needed at work and that children need the Internet. Persons who do not need the Internet in their work and who have grown up already do not perceive a need to "Internetify".

While no personal need for the Internet is perceived, a difference from other people who use the Internet is perceived. This generates attitudes trying to justify the non-use of the Internet: children no longer know how to read, some adults sit their whole lives in front of computers and don't know what real life is like.

A reason for such a situation certainly lies in the pattern of Internet use in Estonia: the Internet is mainly used at school and at work, not at home like in most other countries (Emor 2002a).

2. The cell phone is the biggest rival to the Internet as a means of communication in Estonia

Like in the case of information search, the Internet was also not spontaneously mentioned when speaking about communication. The telephone is mentioned above all as the quickest method of contacting another person, and also as a means of communicating any thoughts and questions that may arise during conversation. The possibilities of writing letters and making personal visits were also mentioned, while the most important methods of communication are fixed phones and mobile phones with SMS functions.

Many benefits are seen in the cell phone's ability to facilitate communication (quick contacts, good coverage), while the ease of learning to use a cell phone is an even more important advantage of the cell phone when compared to the Internet. The cell phone is in the Estonian language, it can be carried along and new functions can be learned; when the cell phone breaks down it is cheaper to repair than a computer.

A reason behind the common perception of the advantages of cell phones was certainly the intensive purchasing of cell phones in Estonia in 2000 and 2001 (Chapter V), triggered by a price war between operators.

3. Only Internet banking is seen as a virtual partner in the management of affairs

Non-users and light users of the Internet know that the Internet is used for searching information, communication, entertainment and for many other purposes. The fact that the Internet can be used for making payments and for other bank services is also very well known. However, the possibilities of learning about the opening hours of various agencies, printing of various forms and other public sector services available on the Internet were not spontaneously mentioned.

Firstly, this may mean that people are not aware of the public sector services available on the Internet; secondly, there is a belief that personal visits to state agencies are inevitable; and thirdly, people seldom come into contact with public sector services and the latter are complementary rather than essential features of the Internet.

When speaking of the management of various affairs, the loss of time was mentioned by the participants in the group as the most unpleasant aspect; hence, the Internet should be helpful as a timesaver. However, it should be mentioned that people with little experience in Internet use who have attempted

to manage their affairs over the Internet do not perceive a gain of time, as much of the procedures need to be repeated later at the respective agency. The reason for this is a misunderstanding on the part of the user or an incorrect presentation of the requirements on the part of the agency.

Inconvenient opening hours and poor parking possibilities are also factors that bother people who have to use services. The Internet can also be helpful to remedy these problems, but before the procedural arguments, a person must be convinced that the Internet service is of the exact same quality as the telephone service or a personal visit. This is not the case at the moment.

Quantitative studies conducted among the population of Estonia show that the population is ready to use public sector services on the Internet (Emor 2002b).

4. Lack of need as the main reason for non-use of the Internet

What was described above mainly refers to the lack of need to use the Internet. The quality of the Internet or the services offered by it is a secondary reason.

A part of those who participated in the discussion groups can be defined as the group who have never perceived a need to use the Internet in their personal interests. The group contains people in whose case an acknowledgement of the opportunities may soon lead to a perception of a need, but there is certainly a group that "gives up the Internet". These are people who need to cling to their established routines or feel that engagement in something they are unfamiliar with or not sufficiently good at undermines their high self-esteem.

5. Lack of opportunities and skills are reasons for light use of the Internet

Another part of the participants in the discussion groups are more or less interested in the Internet and its possibilities, but are prevented from use by poor skills and a lack of Internet access. Skills and access concerns are closely related, and the third party also involved in this relationship is the public Internet access point.

The Internet is not considered easy to use, cell phones are believed to be easier to handle. The greatest difficulty in using the Internet is a foreign language (particularly the language of the user interface, but also the language of information, especially for non-Estonians), and the difficulty in memorising the logic of use. There is also the fear of damaging the machine or arriving at an undesired outcome if something goes wrong (the goal is not reached due to the complexity of the task, or in the case of money transfers, all money will be lost because of a wrong click).

The difficulties of memorising logic of use may be regarded as the most important factor. The use of computers and the Internet is naturally not easy for elderly people who tend to forget quickly, but neither is it easy for young people. The group contained several participants under the age of 30 who admitted not to like the computer as they could not cope with it.

Particularly people with little experience in using computers (when compared to non-users) pointed out an important fact -- computers and the Internet have to be used regularly and the related skills have to be improved gradually in order not to forget. Here lies the reason why people do not use the Internet more frequently: they need an Internet connection at home. The home is a place where people can learn on their own at their own pace.

6. PIAPs are associated with children and other skilled users

The reasons why many people do not have a computer or Internet connection at home are mainly financial. To give people an opportunity to use the Internet, the public Internet access points (PIAPs) programme has been launched. A mention of the possibilities of PIAPs in the groups revealed a number of barriers that prevent people from acquiring and practising Internet skills. The most important of these barriers is the lack of self-confidence in a situation where others are presumed to have Internet skills. PIAPs are believed to be dominated by young people who can do everything quickly and smoothly, and it is embarrassing and unpleasant for adults to demonstrate their lack of skills, particularly when more skilled people have to queue up and wait because of one less skilled person. Because of these fears, people wish to have a computer and Internet connection at home where someone who does not condemn them can give advice when necessary. A home computer is also preferred because "public places are just not liked".

The above arguments suggest that non-users and light users of computers and the Internet perceive a certain social pressure: "everyone in Estonia knows how to use the Internet", followed by: "only I do not understand and cannot use it". Although studies of Internet users show otherwise (33% of Estonian inhabitants aged 15–74 had used the Internet during the six previous months in the fourth quarter of 2001), this fear should be considered when addressing non-users and light users.

VII. STUDY OF VALUE ORIENTATIONS OF NON-USERS OF INTERNET

Mari Kalkun

1. Introduction

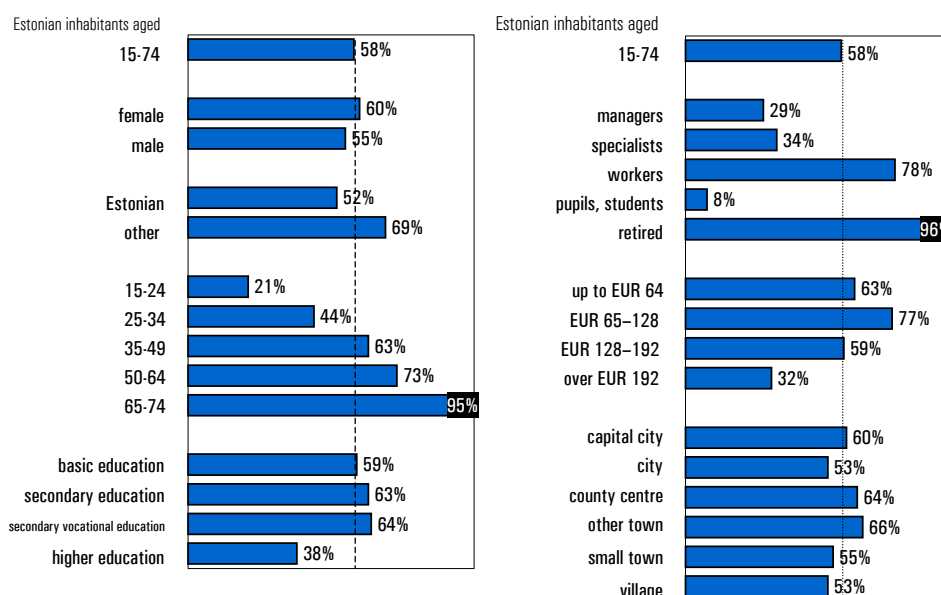
The purpose of this Chapter is to provide a quantitative overview of the people in Estonia who do not use the Internet actively. We sought answers to the following questions: can we distinguish between different segments of non-users of the Internet according to their value orientations? If so, what are the peculiarities of these segments? What is their current attitude to the Internet and its uses? What are the barriers to Internet use? What could motivate non-users to become Internet users?

For the purposes of this Chapter, non-users of the Internet are people who have never used the Internet. The study we rely on is the RISC study of the value orientations of the Estonian population, carried out in February 2002. The study covered 1000 permanent residents of Estonia aged 15–74. According to the study, 58% of people (approximately 607,000 persons) in Estonia had not used the Internet during the previous six months as of February 2002 (this result cannot be compared to the results of the e-track by Emor, because the study methodology was somewhat different).

2. Non-users of the Internet

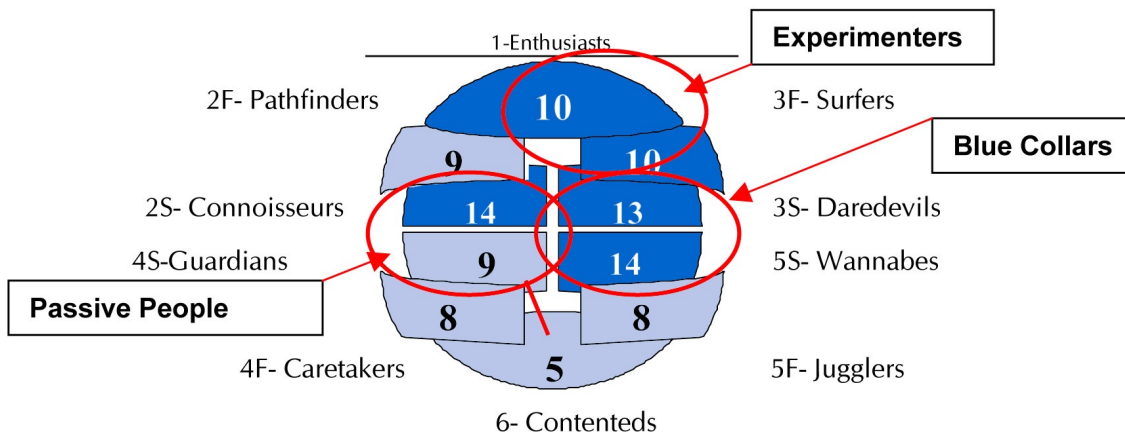
According to the analyses of the e-track by Emor and the RISC study, the percentage of non-users of the Internet is above the Estonian average (58%) among non-Estonians and elderly persons (Figure 1). As regards the status of the people, the percentage of non-users is especially high among retired persons (96%) and “Blue Collars” (unskilled and skilled workers) (78%).

Figure 1. Non-users of the Internet among Estonian population aged 15–74



The value orientations scale according to the RISC system (see Figure 2, the “RISC turtle”) describes groups in which 10% or more of the non-users of the Internet belong (groups: 1-Enthusiasts, 3F-Surfers, 3S-Daredevils, 5S-Wannabes and 2S-Connoisseurs). The groups located closer to each other are characterised by a more similar mentality and view of the world. According to similar views of the world, the above-mentioned five groups can be in turn divided into three sub-groups, which will be observed in greater detail in the analysis below.

Figure 2. Non-users of the Internet on the RISC value scale
 (% of non-users belong to the respective group, n=570)



Basis for RISC segmentation:
vertical axis: attitude to changes — the upper point on the axis signifies development and growth, the lower point signifies an aspiration toward stability;
horizontal axis: attitude to life — the right point on the axis signifies pleasure and the left point signifies responsibility;
space axis: adaptation to changes — the protruding fields signify a flexible/rapid adaptation to changes, the groups not protruding have a stronger need for frames and structure, i.e. adaptation is slower.

On the left of the axes is the group "2S-Connoisseurs", who account for 14% of non-users of the Internet. Members of the "4S-Guardians" and "6-Contenteds" have a fairly similar view of the world to the "Connoisseurs", which is why all these groups are hereinafter viewed collectively as "**Passive People**"¹¹. "Passive People" form **28%** of all non-users of the Internet.

On the right of the axes are the groups "3S-Daredevils" and "5S-Wannabes", who account for **27%** of all non-users of the Internet. These two groups may also be viewed collectively due to their relatively similar value orientations and are referred to as "**Blue Collars**" in the analysis that follows¹².

The groups "1-Enthusiasts" and "3F-Surfers" also contain relatively high percentages of non-users of the Internet, accounting for a total of 20% of non-users of the Internet; they are hereinafter collectively referred to as "**Experimenters**"¹³ due to their similar value orientations.

These three groups cover 75% of non-users of the Internet, leaving 25% yet to be described. These are the groups "2F-Pathfinders", "5F-Jugglers" and "4F-Caretakers". Their position on the "flexibility" side of the third axis of RISC (the protruding groups marked by the letter "F") shows that members of these groups adapt to new and different situations relatively better than the people on the "structure" side (marked by the letter "S"). They are relatively less discouraged by various barriers, believing that there is a way out of every situation. The percentage of non-users of the Internet is average or below average among the people with a more flexible attitude to life, i.e. the people forming these groups do not particularly need external help to reach the Internet. Over time as society develops, the groups on the flexibility side of RISC should not be a problem for Estonian society as regards Internet use. There is a high percentage of non-users of the Internet on the structure side, who appreciate order and frames in their lives and expect instructions on how things should be done. The relatively higher percentage of non-users of the Internet in these groups can be explained by the fact that people appreciating structure tend to give up their pursuits more easily when they encounter obstacles. They tend to prefer the life, the circle of people and the activities they are familiar with.

Before the summary that deals with the three groups separately, we will discuss which benefits the non-users generally see in the Internet, which possibilities of the Internet they wish to use, and what their reasons for not having used the Internet are.

¹¹ We call this group "Passive People" because it includes a larger than average percentage of elderly persons; the title refers to the mentality of the people belonging in this group — they do not expect any new challenges from life.

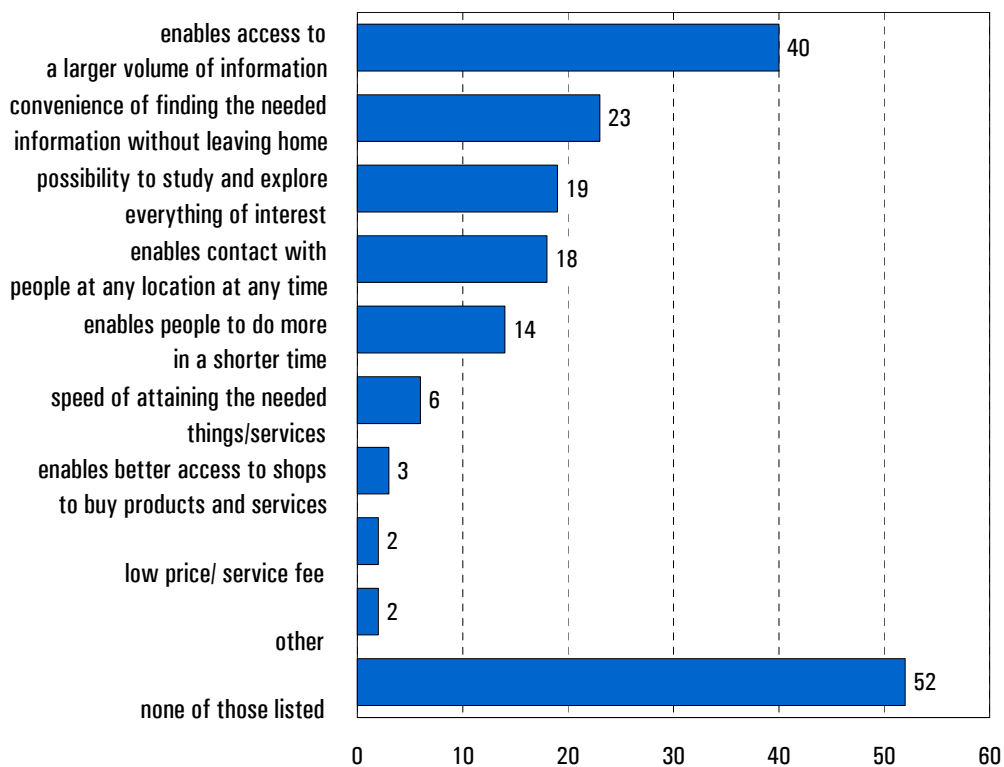
¹² We call the group "Blue Collars" as it contains a higher than average percentage of skilled and unskilled workers; the group is characterised by an attachment to daily routines and activities.

¹³ We call the group "Experimenters" as the people forming it wish to try everything that is new.

3. Positive qualities of the Internet

Of all non-users of the Internet, 52% do not see any positive qualities of the Internet (Figure 3, the respondents were asked to select what they thought were the positive qualities of the Internet from among eight listed answers, one of which was "none of those listed").

Figure 3. Positive qualities of the Internet (% of non-users, n=570)



The result that every other non-user of the Internet sees no positive qualities in the Internet is extremely important, showing that the "Internet" is a very distant topic for a majority of non-users. The result is comparable to the answers received in the focus group study: "I do not associate anything with the Internet". A conclusion of the focus group study also holds true: a conversation with these people should not start with the word "Internet".

In the socio-demographic aspect, retired persons are more distinct from the others -- 69% of them do not see any positive qualities in the Internet. Men and up to 49-year-olds see more positive qualities in the Internet than others. But even in those groups, about 40% do not find any positive qualities.

In the RISC framework, the largest proportion of people who do not see any positive qualities of the Internet can be found among "Passive People", on the left side of the axes, neither can the "Blue Collars" be distinguished from the average. A more optimistic attitude is demonstrated by the "Experimenters", who are characterised by greater openness and readiness to try everything that is new.

Among the positive qualities of the Internet mentioned, those relating to information dominate: an average of 40% of non-users of the Internet find that the Internet is good because it enables access to a larger volume of information; the qualities of "finding the needed information without leaving home" (23%) and "the possibility to study and explore everything of interest" (19%) also relate to information. The focus group interviews also revealed the same result – people are chiefly attracted to the Internet by information-related functions.

Information is followed by the topic of communication (similarly to the focus groups), and other qualities of the Internet (services, commerce) come after information and interpersonal communication.

From the RISC aspect, "Experimenters" are distinguished from other non-users. They form a total of 20% of the non-users who see the positive aspects of the Internet more frequently: an opportunity to study and explore everything of interest; the convenience of finding the sought information without leaving home, and a possibility to communicate, showing that this group is more easily activated as their attitude toward the Internet is relatively more open.

The group "2S-Connoisseurs" is also distinguished from the others, as they mention the possibility to study and explore everything of interest and to communicate (to keep in contact with people at any location at any time) more frequently than others. This group is characterised by the need to be in touch with different generations and to maintain good contact with people. The Internet could be a means of communication for them.

The preferences of the "Blue Collars" are not particularly distinguished from the average, i.e. the people forming this group value the information-related functions of the Internet the most, while about a half of them see no positive qualities in the Internet.

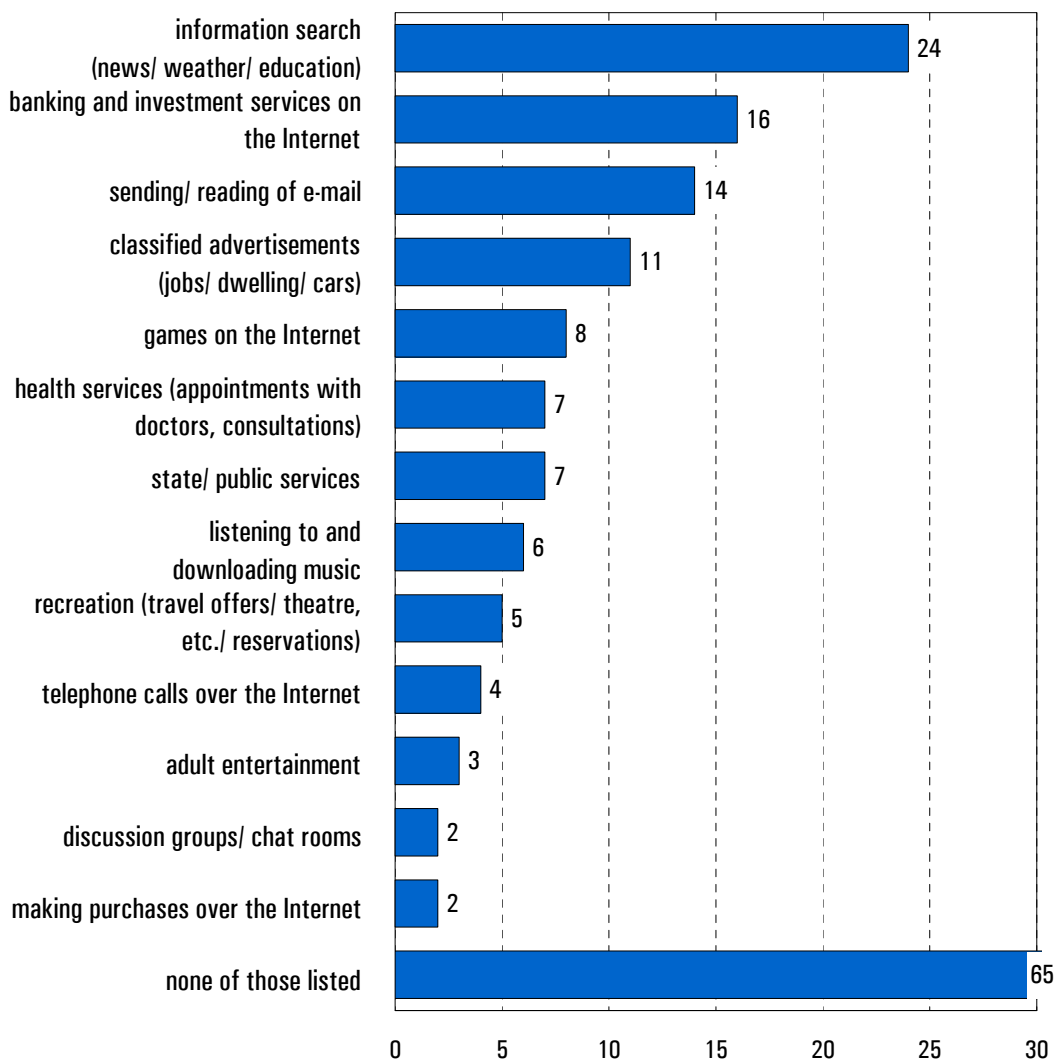
4. Which functions of the Internet would non-users like to use?

Sixty-five per cent of non-users of the Internet would not wish to use any of the 13 listed functions of the Internet (Figure 4). It may be concluded that the road to attracting these people to the Internet is very long, because it has to start with generating interest in them. The positive qualities of the Internet were mentioned by 48% of non-users; 35% of non-users wish to do something on the Internet themselves. The results show that about 13% of non-users of the Internet in Estonia are able to say what the positive qualities of the Internet are, but cannot associate the Internet with themselves.

The wish to try something themselves comes after there is interest, followed by the readiness to overcome the obstacles to computer use.

Figure 4. Potential areas of use of the Internet

(% of non-users, n=570)

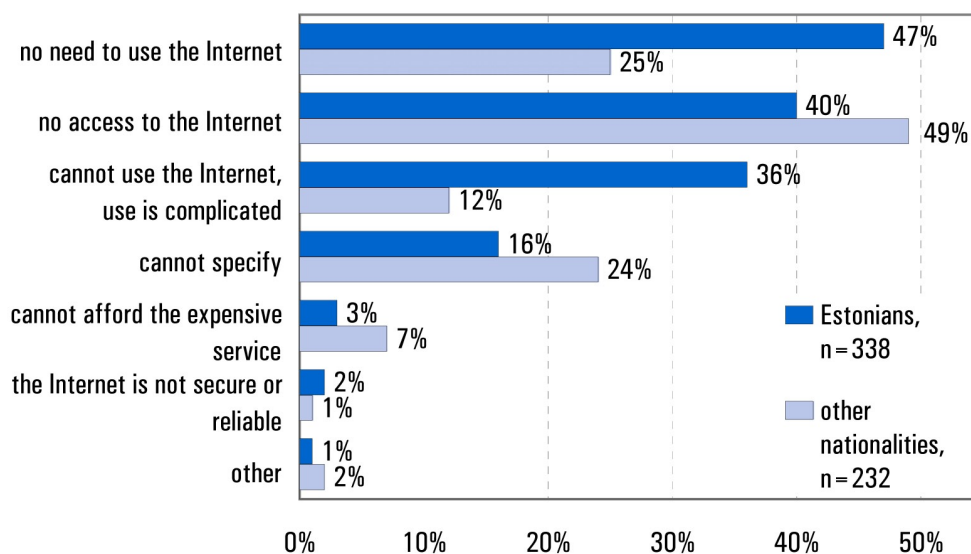


As in the case of specifying the positive qualities of the Internet, retired persons also stand out among the others -- 84% of them see no attractive uses of the Internet. On the RISC axes, "Passive People" have a lower than average wish to do something on the Internet.

5. Reasons for not using Internet

We asked the respondents to specify two reasons why they did not use the Internet. A clear difference is notable between Estonians and non-Estonians (Figure 5). One-half of non-Estonians (49%) specified a lack of access as the reason. Estonians mentioned a lack of need (47%) the most frequently. This result shows a fundamental difference in attitudes: the lack of access twice as frequently pointed out by non-Estonians

Figure 5. Reasons for not using the Internet
(% of non-users, n=570)



suggests a certain need for using the Internet. Estonians clearly state that they see no need. It may be concluded from their answer that the readiness of non-Estonians to use the Internet is generally greater than that of non-Estonians. This result is confirmed by the focus group interviews, in which non-Estonians demonstrated a much greater enthusiasm and very often said that they would use the Internet if they only could. However, one has to keep in mind that there is a higher than the Estonian average percentage of non-users of the Internet among non-Estonians. While in the case of Estonians, the more active part of society already uses the Internet, the more active non-Estonians might not be Internet users yet. Naturally, there are also many barriers that inhibit their rapid adoption of the Internet. Besides financial barriers, non-Estonians who are older than 30 do not like to stay in public facilities and demonstrate their lack of skills to younger and more skilled people.

6. How to reach "Passive People"?

The socio-demographic characteristic of "Passive People" (28% of non-users of the Internet, 22% of the population) is their older age -- ca. 60% of the people forming this group are older than 50 (comparable to the people of Sõmeru who participated in the focus groups).

These people have relatively little interest in matters outside of their personal lives. Their families are relatively small (they live alone or with a partner), their children usually live separately. This group has no particular dreams or desires (any more) or a need to accomplish something in their lives. They appreciate being a part of the community and having a peaceful life. "Passive People" are distinguished from the rest of the population of Estonia by a very strong acceptance of power and order.

The relation of "Passive People" to the Internet or to computers is very weak, exemplified by the focus groups answers: "I don't need it. My granddaughter plays with it"; "those who need it in their work"; "in younger families, why not". The group sees computers and the Internet as something clearly irrelevant in their lives, they perceive no need whatsoever to use a computer or the Internet.

The focus group results and value orientations suggest that "Passive People" could most likely be interested in different kinds of information: men in news and information they do not get elsewhere, women in gardening and home information. Reading newspapers and magazines on the Internet has a certain potential, but the circle of information sources that "Passive People" use has been already well established over the years (radio, television, people), and it is fairly difficult for new channels to compete. As mentioned in Part 3, distinct among them is the group "2S-Connoisseurs" for whom the Internet may be an interesting means of communication, enabling contacts between different generations.

Overcoming the lack of interest is surely the most difficult task, while a newly emerged interest can be reduced by rapidly appearing obstacles, particularly the language problem with user interfaces and a relatively lower ability to memorise the new skills. Unwillingness to demonstrate one's lack of skills may become a psychological barrier.

7. How to bring the "Blue Collars" to the Internet?

The groups "3S-Daredevils" and "5S-Wannabes" contain a higher than average percentage of workers: 39% (the Estonian average is 22%). The "Blue Collars" (27% of non-users of the Internet, 25% of the population) appreciate their established routines, their job is usually that of a skilled or unskilled worker (such as salesperson, welder, locksmith) that does not require a computer, after

work they go home and deal with their families (which they usually have). On weekends they watch a lot of television (45% of them watch TV on the weekend for five or more hours a day; the Estonian average is 31%). They are not willing to change their daily routines easily.

The relation of "Blue Collars" to computers and the Internet is on the level of average non-users. They also demonstrate an average level of interest, i.e. they would be most interested in information-related functions.

What are the obstacles to using computers and the Internet? Psychological, skill and economic barriers can be distinguished on the basis of value orientations and focus group interviews. Economic barriers are most clearly distinguishable: the income of "Blue Collars" per family member is not larger or smaller than the Estonian average, but as "Blue Collars" usually have families with children, most of the money is spent on basic necessities.

Skill barriers mean the actual lack of computer skills and often a poor command of foreign languages, on the one hand. On the other hand, it means the different learning logic of people with basic, secondary or secondary vocational education when compared to people with a higher education (8% of the "Blue Collars" have a higher education, while the Estonian average is 18%). The "Blue Collars" are not used to complementary training -- 91% of them have never attended adult training (the Estonian average is 66%) and have no notion of having to learn anything after graduation from school. They require very clear instructions and guidance, as opposed to people with a more flexible attitude who will seek solutions themselves. The "Blue Collars" may be afraid of uncertain situations: "I might break something (someone else's computer) or do something wrong (such as make a money transfer on the Internet to a wrong account).

Psychological barriers are the social and psychological obstacles arising from lifestyle and value orientations. The "Blue Collar lifestyle" is fairly routine (work, home, and friends), and it would be fairly difficult to include spontaneous visits to the Internet after work in this routine. The Internet should be introduced to the life of the "Blue Collars" via work, home, or friends. Public Internet access entails another obstacle besides the established routine: the "Blue Collars" do not wish to demonstrate their lack of skills to others. As they appreciate a hierarchy and consider themselves older and wiser than the people they would meet at a public Internet access point, "Blue Collars" are unwilling to visit a PIAP where they can seriously undermine their existing self-image. The same obstacle may arise at home where "Blue Collars" want to appear older and wiser than their children.

What are the potential motivations of the "Blue Collars"? It should be noted that the "Blue Collars" are interested in short-term events. They should not be spoken to about how the Internet will be useful in the future, but have to see an actual personal gain at once, such as job advertisements, car sales advertisements, cheap travel offers. Like all non-users of the Internet, the "Blue Collars" are also particularly interested in the information function, i.e. information about various

opportunities. Internet banking may present an opportunity for personal gain, as it saves the bus fare or petrol cost of going to a bank (at the same time, one should not forget that many rural inhabitants use standing orders or settle their accounts in cash); it is also useful for learning about the account status, finding a discount travel offer or receiving a prescription from a doctor.

How to bring "Blue Collars" to the Internet? "Blue Collars" are attracted by personal gain, particularly monetary gain (a saving on bus fares, cheaper services or products), a time saving is less important. "Blue Collars" will not change their daily routines for the sake of something new or even interesting. The Internet should reach them via work, home, or friends.

8. "Experimenters" will very likely find their way to the Internet themselves

Of the three groups of non-users observed, "Experimenters" (20% of non-users of the Internet, 23% of the population) can be brought to the Internet the most easily. The attitude of "Experimenters" to the Internet is more positive and their readiness to use various services is the greatest. "Experimenters" may be prevented only by their greater impatience -- their lifestyle is hasty and they expect quick solutions; when quick solutions do not work, they may drop the activity. Computer use is not easy and there are a number of potential obstacles. At the same time, "Experimenters" have an interest and readiness to overcome the first barriers and to seek help where necessary.

The "Experimenters" group contains a higher than average percentage (24%) of people aged 25–34 (the Estonian average is 18%). Their lifestyle is more active than that of "Passive People" and "Blue Collars", and often includes visits to cinemas, restaurants and outdoor activities besides work, home, and friends. They are people who pay much attention to themselves, they engage in sports and take care of their body. "Experimenters" take an active view of their free time, meaning that they can reach the Internet via public Internet access points and via their communications with other people. The Internet use of this group is on the Estonian average level, suggesting that even though the group accounts for one-fifth of all non-users of the Internet, "Experimenters" do not need an approach tailored specifically for them.

VIII. ESTONIAN EXPERTS' VIEW OF THE PROBLEM

Andre Krull

1. Assessment of General Developments

Assessment of developments so far

When assessing Estonia's current developments in the information and communication technology sphere, experts agreed that the developments have been largely successful. However, the lack of a more specific action plan and the end of purposeful development activities on the state level as of the year 2000 were mentioned. A number of high statistical indicators were pointed out, which considering the relatively low GDP per capita in Estonia are astonishingly high against the background of the data on many West European countries. It was stated that Estonia's success owes to an early liberalisation of the telecommunications sector and the strong influence of Scandinavian countries in the region. Initiation of the Internet penetration process from the education sector and the large-scale involvement of the public sector that followed have also justified themselves. The stable funding scheme so far was appreciated, but today's developments in view of the potential disruption of the current funding scheme in the near future, as well as the lower computerisation rate of schools when compared to the European average indicators were pointed out as signs of danger.

Has Internet development stopped in Estonia?

E-track by Emor shows the worrisome trend that Internet penetration has significantly slowed down when compared to the rapid growth up to 1999. The number of Internet users during the six preceding months has remained stable at 39% since December 2001.

The persons interviewed divided into two categories in assessing the intensity of Internet use in Estonia — the first category agreed that the initial point of saturation was achieved by the end of 1999, and others assured that a dynamic development is still under way as regards the number of users and the intensity of data volumes.

A common position was taken regarding the understanding that those who use computers and the Internet use them more and more, and the relative share of heavy users is increasing. The persons interviewed agreed that those population groups who have had the adequate possibilities, skills and motivation have become Internet users by now. It was admitted that the benefits offered by the Internet do not correspond to the financial possibilities of non-users, hence the value of the benefits should be significantly enhanced for low-income groups or

the level of expenditure required for access should be reduced. It was pointed out that the saturation point of computer and Internet penetration is much higher in Finland and in order to reach the same level, Estonia would need a targeted approach to convert non-users into users of the Internet.

2. Digital Divide in Estonia

Digital Divide issues in Estonia

In the course of the expert interviews, two dominant yet very different approaches to the digital divide prevailed: on the one hand, the digital divide is seen as a central and relevant problem of the information society; on the other hand, the digital divide was not identified independently but was seen as an artificial problem, one of the many dimensions of the social divide. The interviews pointed out that the digital divide problem has not been acknowledged in Estonia on a wider scale, because bridging of the digital divide is largely understood as providing access to the Internet. At the same time, the aspect of creating equal possibilities in view of future prospects is not taken into account: the guarantee of access to information offered by the state (for example, the Parliament stenographs or other documents of the state apparatus are available in Estonia only over the Internet), the communication of citizens with the state structures and their general functioning in an information society. It was admitted that the digital divide is spoken about on a general level, but nothing particular has been undertaken in this respect on the operational level.

Experts believe that the digital divide issues are very closely related to income levels and other social problems in society. It was also pointed out that primary access has been created for society on the basic level: everyone who wishes can at least access the Internet through PIAPs.

Main reasons behind divide

As the main reasons behind the emergence of the digital divide, the experts pointed out the great difference in incomes and the low purchasing power of the middle class, the varying availability of information and education, the low GDP, the price of Internet connections that remains high, the lack of active training programmes in the previous years and the lack of attractive communications services that would encourage people to obtain access quickly.

It was pointed out that Internet use is chiefly rooted in the needs of people: those who perceive the Internet as a direct need and act accordingly become active users, while others do not. The lack of a uniform structure of information in the Internet environments of Estonian state agencies and the poor advertising of current projects were also mentioned (Public Information Act, ID card).

It was mentioned that regional developments have been fairly satisfactory in Estonia, and that the digital divide is rather caused by old age, poor skills and poverty.

Risk groups

When commenting on the risk groups identified in the study by Emor (retired persons, non-Estonians and "Blue Collars"), among whom Internet use is significantly lower than among the average Estonian population, the experts agreed that different approaches are needed to motivate different groups.

While the main problem for retired persons was the lack of access and skills, which could be solved by training and more affordable access to the Internet at home, the solutions were admittedly more complicated in the case of "Blue Collars" and other nationalities. As "Blue Collars" are the most important of these risk groups in the economic aspect, their productivity can be improved by reducing the time consumed on managing affairs with the state by using e-services and by offering the daily business services on the Internet. The experts mostly recommended to address "Blue Collars" via employers: to offer computers on favourable terms, stressing the computer needs of children. The Internet training of non-Estonians in the future, beginning from early youth, and the need to involve them in Estonian language content environments on the Internet was seen as an acute need. Youths who discontinue studies after basic school or secondary school and begin to work were also identified as a growing risk group, who form a significant risk group among the Internet-using new generation. The alienation of this risk group from the Internet could be reduced by the development of advice centres.

Creating motivation

As the main key to generate motivation for Internet use, experts see the creation of content services of direct benefit to people (for example, in the case of the cell phone, the SMS-based milk checking system launched by E-Piim is such a service) that would significantly enhance the quality of life or the efficiency of activities of people (e-citizen's portal). The banking services and the few public e-services offered today do not weigh up the price that the risk groups have to pay for having Internet access at home. Although much depends on the financial possibilities of people, experts also perceive a greater need for training that would help people to personally experience the added value that the Internet could give them.

It was pointed out that the state has taken a paternalistic direction in the Internet development of Estonia -- people take it for granted that the state will provide Internet access for them. The number of home computers is probably also reduced by the good PIAP network covering the entire country. A general

approval of employers to the employees' Internet use at work for the management of personal affairs also favours the situation where the only negative aspects of not having Internet connection at home are the lack of access to entertainment and web pages requiring great time resources.

Once again it is confirmed that the existing content services on the Internet do not weigh up the price paid for them and do not generate sufficient motivation. As one of the respondents strikingly stated, a stove is still a more necessary machine at home than a computer.

Changing the attitude of risk groups

While the study by Emor convincingly showed that even though awareness of the opportunities of the Internet is fairly high, among the risk groups, people cannot associate the added value with their personal interests and experts pointed out the following aspects that could help to bring more people to the Internet.

The existing services should be further introduced in the first order (ID card, the accompanying e-mail account) and more positive real-life examples should be provided. The importance of enhancing imaginary motivation in painting pictures of the future and describing specific success models to different groups has to be stressed. Technology also has to be brought closer to people by way of user-friendly services, which would stimulate the use of public and private sector services on the Internet because of a saving in time and money. Naturally, pictures of the future have to be painted on the basis of actual services, as empty promises may easily give an opposite effect when we want to change the attitude of people.

State's role in bridging digital divide

Opinions on the role of the state in avoiding and reducing the digital gap divided into two: on the one hand, as little involvement as possible of the state in market competition was advocated, arguing that the market will regulate the affairs among Internet connection providers; on the other hand, there were arguments that the state should be strongly involved in projects where the private sector cannot directly recoup the investments made, but the expenditure would be justified in order to guarantee people equal opportunities or a more even development of the state. The role of the state was more specifically pointed out in avoiding regional differences (more sparsely populated regions), providing IT training and creating the essential IT infrastructure (the Village Road project).

An important aspect that the experts pointed out was the coordinating role of the state in cooperation with the private and non-profit sector. Development of the e-citizen portal, a wide-scale implementation of the ID card and the existence of a public key infrastructure are regarded as the priorities of information society

development, which could be supplemented by public sector services creating a higher added value. Easily available and easy to use e-services of the state and a cross-use of databases in the form of services that give a time gain to citizens could serve as important generators of motivation to involve the current risk groups in Internet use.

Role of public Internet access points

The current developments in offering free access are generally satisfactory, but PIAPs are still only seen as intermediary means -- more serious use can only take place in homes, where Internet penetration, however, depends on the cost of equipment and connection, the existence of content services creating an added value, and skills of using them in one's personal interests.

3. Recommendations

Recommendations for action plan

A vast majority of the experts agreed that the current IT activities of the state, which only rely on the general framework programme of Estonian information policy, needs elaboration and specification. It was pointed out that current developments have taken place on a project-to-project basis, but there is no long-term strategy or purposeful action. This was particularly mentioned by experts employed by the private sector, who complained that the lack of a more specific national IT action plan complicates the development of services by them; public sector experts also complained about the poor cooperation between and within different sectors. A majority of the respondents agreed that the state is willing to act in the area, but requires clear cooperation mechanisms and a strategic development plan.

All experts considered the preservation of a clear IT funding scheme important as opposed to its diffusion across the budgets of different ministries; there was also great concern over IT coordination as the Ministry of Economic Affairs and the Ministry of Transport and Communications were being merged. It was found that as Estonia has defined information technology as a priority area, the creation of a respective job at the Government of the Republic would be appropriate. As of now, IT coordination and the scope of its financing do not correspond to the importance of the area among the future prospects of the Estonian state.

Legislation

A majority of experts answered negatively to the question of whether they support the idea of Internet access being a fundamental right of the population by law. On the one hand, there is the conviction that the Estonian state is not ready for such a step now or in the near future, on the other hand, experts do not believe

that the Internet as a fundamental right would change anything substantially for the better. It was pointed out that in the rapidly developing area of information technology, there is a danger of damage if rapid short-term development were made mandatory by law, as for example, a nationwide dial-up project would retard the spread of permanent connections and would significantly reduce the national competitive power in a term of five years.

In reality, the supply of Internet connection is actually already incorporated into the Telecommunications Act, which should guarantee everyone the availability of connection on equal grounds. The need for a civil rights charter was pointed out, because many public officials do not understand the purposes and needs of information protection yet. The handling of large databases of personal data by the private sector should be rendered as transparent as it is in the public sector by regulation.

Examples of other countries

The experts stressed that Estonia should naturally take over the best practices of content service providers from all over the world, but it is important not to waste resources and develop overlapping services by different local government bodies. Estonia's key to success lies in projects carried out on the national scale, which would be complicated in many other countries due to their size and the rivalry of administrative territorial units. For example, Estonia could develop a nationwide e-citizen's portal, while in Germany a similar incentive is pursued by competing Land centres.

Whether Estonia should follow the example of Bulgaria and turn school computer classes into PIAPs, the example of Portugal and supply libraries with Internet connection and offer free training funded by the state, whether the state should provide all households with broadband connection like in Korea or grant social tax and income tax incentives for purchases of home computers like in Sweden, is all a matter of political choices, which will be discussed in the section about policy recommendations.

Specific recommendations

The following is an extract from the experts' recommendations for bridging the digital divide:

- sale of public sector's computers to risk groups at a discount price;
- inclusion of communication expenses in calculating social benefits;
- conversion of school computer classes into PIAPs;
- exemption of IT training from fringe benefit tax;
- provision of incentives for employers for purchasing home computers for employees;
- provision of Internet training for the unemployed, motivating them throughout the training cycle until they find a job;

- computer courses funded by the state, training of support staff in county centres;
- further development of the network of public libraries;
- a more aware and better coordinated development of content services in the public sector.

Who should deal with digital divide issues in Estonia?

When answering the question of who should deal with digital divide issues in Estonia, the replies of experts again divided into different categories. A majority of experts found that a problem as complex as this could only be dealt with by a cooperative structure composed of the three sectors, where the Look@World Foundation could play a coordinating role. It was also argued that coordination should remain on the state level, or, as the other extreme, the state should not interfere at all with the area that will be inevitably regulated by the market in the long term. The experts were concerned about the accumulation of priorities in the area that could be improved by the introduction of the post of a Minister of Information Technology.

4. Prognosis of Estonia's development

The experts' assessments on the further developments of Estonian information society would be distributed over a scale ranging from the cautiously optimistic to completely optimistic. The more sceptical experts point out that Internet penetration has largely come to a halt and a new rise could be brought about by a new generation of users or a reduction in the price of access, as well as the emergence of motivating content services and the improvement of the skills of risk groups. These experts believe that the number of users will remain within 45–50% in the forthcoming years. The more optimistic prognoses expect 65% of the population to be using the Internet in the year 2004. This is seen as the direct result of effective Internet training, lowering of the access price and making important content services available on the Internet.

When speaking about Estonia's position among other European countries, the experts agreed that Estonia may continue to be the standard bearer of Eastern Europe, while opinions on Estonia's competitive power when compared to Central Europe differed. The experts agreed that the next wave of investments from the Nordic countries into Estonia will play an important role in whether they will produce quality or quantity. If new technology products and content services with a great added value are developed in Estonia, Estonia will have a chance to remain in the forefront of European information societies alongside the Nordic countries. But if Estonia remains to be a provider of subcontracting services, Estonia's place would be among the European average.

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ANNEXES

ANNEX 1: PUBLIC COMPETITION ANNOUNCEMENT OF OPEN ESTONIA FOUNDATION	83
ANNEX 2: DESCRIPTION OF E-TRACK SPECIAL ANALYSIS METHODS	
Kristina Randver	85
1. Sample.....	85
2. Fieldwork.....	86
3. Data processing.....	86
4. Confidence limits	86
ANNEX 3: TABLES OF RISC STUDY OF VALUE ORIENTATIONS	
Mari Kalkun.....	87
ANNEX 4: FOCUS GROUPS REPORT	
Mari Kalkun	95
1. Method	96
1.1 General methodology.....	96
1.2 Sample	97
1.3 Project working group.....	97
2. Results	98
2.1 Awareness of Internet.....	98
2.2 Computer and Internet experience	103
2.3 Reasons for little Internet use	104
2.4 Motivation	112
2.5 Logic and necessities of acquisition of computer and Internet skills	116
2.6 Opportunities to use Internet for various services	121

ANNEX 1: PUBLIC COMPETITION ANNOUNCEMENT OF OPEN ESTONIA FOUNDATION

OEF announces: public competition for conducting a study in the social aspects of ICT

The initiative group comprised of the Open Estonia Foundation, the Look@World Foundation and the Office of Public Administration of the State Chancellery wish to contribute to information society development in Estonia. Information society development poses questions pertaining to many areas of life. The X-Road Programme and the e-citizen idea initiated by the Estonian state as well as other initiatives such as the Look@World project thoroughly deal with the different aspects of information society, such as the uses of information technology and the availability of the Internet and other electronic services.

The social aspects or the "soft side" of information and communication technology (ICT) use are extremely important. Today we lack a sufficient understanding of which social or personal factors shape the attitudes and beliefs external to the technological components of technology and electronic services. The development of services has been overly based on the skills and readiness of the current users, which in turn makes it more difficult to involve new users in information society. As technology, Internet access and the services offered in it develop, a danger arises that unless the attitudes, beliefs and prejudices of different population and social groups are taken into account, this may later have a negative impact on the readiness of people to use new technologies and services.

The initiative group organises a sociological study aimed at defining the aspects that the creation and development of electronic services (such as Internet or mobile phone services) has to take into account, as well as the measures to be taken to introduce and disseminate the possibilities of the Internet (and mobile telephony). The primary target group of the study is comprised of those adult Estonian inhabitants who do not use the Internet, whose attitudes, needs and beliefs will be compared with those of the reference group of light users. The use of qualitative methods (such as focus groups) would be preferable in the study.

The goal of the study is to specify the population groups who do not use ICT actively across segments (e.g. retired persons, the unemployed, etc.) and the factors motivating and affecting their ICT use.

The expert committee of the Open Estonia Foundation divided these factors into three general categories:

- reliability, security;
- comprehensibility, simplicity;
- necessity, satisfaction of a need.

A successful study also answers the following questions:

- What are the main segments of adult non-users of the Internet?
- What will the benefits to each segment be? Which circumstances motivate people to familiarise themselves with the Internet and other ICT means and to use the services offered by them (such as: money, communications, access to information, time saving, etc.)?
- Which are the most important factors?
- What should be taken into account and stressed in explanatory work? What is the logic of technology and Web use of the different segments by which the simplicity and convenience of use is assessed?
- Which of the above factors (reliability, simplicity, necessity) are the conditions precedent to the ICT use of different segments?
- What is their order of importance for each segment?
- Which services (killer applications) would motivate different segments to use ICT if these services were available on the Internet?
- How to promote and introduce the electronic services important for each segment and their added value?
- Who are the opinion leaders of each segment on the national and on the local level? How could they be involved in the introduction of the values and advantages of ICT?

The study report also describes the following in addition to the above:

- recommendations for potential projects and programmes (the most important Internet and other ICT based services that will lead to the use of other electronic services across segments);
- recommendations for the implementation of such projects and programmes (e.g. what a user appreciates upon use);
- an analysis of motivating and inhibiting factors (e.g. how and which information should be introduced to the segment).

ANNEX 2: DESCRIPTION OF E-TRACK SPECIAL ANALYSIS METHODS

Kristina Randver

1. Sample

The universe of the omnibus studies conducted by AS Emor is formed by permanent citizens of the Republic of Estonia aged 15–74 (as of 1.01.2000 a total of 1,104,143 people; the census data of the Estonian Statistical Office as of 1.01.2000).

The intended size of the total sample of the e-track in one calendar quarter is 1500 respondents (the number of respondents covered by a single omnibus study is 500 (504) persons).

The sample is formed as “self-weighting”, i.e. the proportionate model of the population is used, in which all respondents represent an equal number of people of the population. The socio-demographic structure of the sample that formed in the course of the interviews across gender, age, nationality and place of residence is compared to the respective statistical indicators for the population and is weighted to conform to it where necessary.

The model and weighted distribution of the Estonian sample in the 4th calendar quarter of 2001

Category	Content	SOA data.01.2000		Model sample	Actual distrib.		Weighted distrib.	
		Abs. No	%		No.	%	No.	%
TOTAL		1 104 143	100,00%	189	1501	100,00%	1501	100,00%
AREA	Tallinn	323 296	29,28%	57	454	30,25%	439	29,25%
	North-Estonia	157 542	14,27%	27	216	14,39%	214	14,26%
	West-Estonia	137 545	12,46%	24	192	12,79%	187	12,46%
	Tartu area	144 354	13,07%	24	192	12,79%	196	13,06%
	South-Estonia	131 170	11,88%	21	160	10,66%	178	11,86%
	Viru County	210 236	19,04%	36	287	19,12%	286	19,05%
SETTLEMENT	Capital	323 296	29,28%	57	454	30,25%	439	29,25%
	Large City	217 130	19,67%	36	287	19,12%	295	19,65%
	Other town	235 030	21,29%	39	312	20,79%	319	21,25%
	Small town/village	328 687	29,77%	57	448	29,85%	446	29,71%
SEX	Men	517 563	46,87%		752	50,10%	703	46,84%
	Women	586 580	53,13%		749	49,90%	797	53,10%
AGE	15-24	210 746	19,09%		268	17,85%	280	18,65%
	25-34	204 037	18,48%		243	16,19%	301	20,05%
	35-49	309 241	28,01%		359	23,92%	403	26,85%
	50-74	380 119	34,43%		631	42,04%	517	34,44%
NATIONALITY (estim.)	Estonian	719 901	65,20%		1011	67,36%	972	64,76%
	Other	384 242	34,80%		490	32,64%	529	35,24%

2. Fieldwork

Interviews were conducted using the computer-assisted personal interviewing (CAPI) method.

In a CAPI interview, the questions of the questionnaire appear on the screen of a laptop computer and answers are entered into the computer on-the-spot. Filters and rotations are programmed so as to reduce errors upon entry. Fifty surveyors of Emor with special preparation conducted the interviews.

3. Data processing

The data were processed using the statistics package SPSS for Windows ver. 6.1.

4. Confidence limits

The maximum potential error arising from the random sample procedure in the case of the valuations of all those questioned (1501 people) does not exceed the ± 2.5 limit on a 95% confidence level.

When it is desired to observe a smaller target group, a larger potential error of up to $\pm 10\%$ has to be accounted for in using the results if the target group is represented by 100 respondents. The table for assessment of the confidence limits of the results is presented below.

Limits of statistical error

Percentage of answer Sample size	50%	45% 55%	40% 60%	35% 65%	30% 70%	25% 75%	20% 80%	15% 85%	10% 90%	5% 95%
10	31.0%	30.8%	30.4%	29.6%	28.4%	26.8%	24.8%	22.1%	18.6%	13.5%
30	17.9%	17.8%	17.5%	17.1%	16.4%	15.5%	14.3%	12.8%	10.7%	7.8%
50	13.9%	13.8%	13.6%	13.2%	12.7%	12.0%	11.1%	9.9%	8.3%	6.0%
75	11.3%	11.3%	11.1%	10.8%	10.4%	9.8%	9.1%	8.1%	6.8%	4.9%
100	9.8%	9.8%	9.6%	9.3%	9.0%	8.5%	7.8%	7.0%	5.9%	4.3%
150	8.0%	8.0%	7.8%	7.6%	7.3%	6.9%	6.4%	5.7%	4.8%	3.5%
200	6.9%	6.9%	6.8%	6.6%	6.4%	6.0%	5.5%	4.9%	4.2%	3.0%
300	5.7%	5.6%	5.5%	5.4%	5.2%	4.9%	4.5%	4.0%	3.4%	2.5%
400	4.9%	4.9%	4.8%	4.7%	4.5%	4.2%	3.9%	3.5%	2.9%	2.1%
500	4.4%	4.4%	4.3%	4.2%	4.0%	3.8%	3.5%	3.1%	2.6%	1.9%
600	4.0%	4.0%	3.9%	3.8%	3.7%	3.5%	3.2%	2.9%	2.4%	1.7%
700	3.7%	3.7%	3.6%	3.5%	3.4%	3.2%	3.0%	2.6%	2.2%	1.6%
800	3.5%	3.4%	3.4%	3.3%	3.2%	3.0%	2.8%	2.5%	2.1%	1.5%
900	3.3%	3.2%	3.2%	3.1%	3.0%	2.8%	2.6%	2.3%	2.0%	1.4%
1 000	3.1%	3.1%	3.0%	3.0%	2.8%	2.7%	2.5%	2.2%	1.9%	1.4%
1 500	2.5%	2.5%	2.5%	2.4%	2.3%	2.2%	2.0%	1.8%	1.5%	1.1%

ANNEX 3: TABLES OF RISC STUDY OF VALUE ORIENTATIONS

Mari Kalkun

Tables 1–4. Percentage of non-users of the Internet who agreed to the following statements about the positive qualities of the Internet

(+/- marks a statistically significant (95%) difference when compared to all non-users of the Internet, n=600)

Good qualities	Woman		Man		Estonian		Other		15–24		25–34		35–49		50–64		65–74	
	%	Sig.	%	Sig.	%	Sig.	%	Sig.	%	Sig.	%	Sig.	%	Sig.	%	Sig.	%	Sig.
Access to information	34	-	46	+	34	-	47	+	67	+	53	+	51	+	25	-	25	-
Access to products and services	3		3		3		3		3		6		4		1		1	
Interpersonal contact	15	-	22	+	15	-	22	+	33	+	31	+	20		12	-	9	-
Low cost/service fee	1		3		2		3		12	+	1		1		2		1	
Fast access to products/services	4		8		5		8		11		9		7		6		1	-
Retrieval of information without leaving home	19	-	28	+	21		25		46	+	36	+	29	+	13	-	13	-
Examination and discovery of interesting information	17		23		20		18		38	+	35	+	25	+	11	-	7	-
Time gains from managing affairs	13		15		14		15		28	+	14		17		13		7	-
Other	1	-	4	+	2		2		0		3		1		4		2	
None	58	+	45	-	57	+	46	-	27	-	40	-	41	-	66	+	67	+

Good qualities	Basic education		Secondary education		Vocational secondary education		Higher education		Managers		Specialists		Workers		Pupils		Pensioners	
	%	Sig.	%	Sig.	%	Sig.	%	Sig.	%	Sig.	%	Sig.	%	Sig.	%	Sig.	%	Sig.
Access to information	31	-	42		43		42		54		50	+	41		78	+	22	-
Access to products and services	1	-	4		5		0		0		2		6	+	0		1	-
Interpersonal contact	11	-	22		18		22		44	+	21		18		27		9	-
Low cost/service fee	1	-	2		4	+	1		0		1		2		0		2	
Fast access to products/services	3		7		8		4		14		2	-	9		12		1	-
Retrieval of information without leaving home	22		24		22		27		34		33	+	23		39		11	-
Examination and discovery of interesting information	12	-	23		22		17		37	+	30	+	19		24		7	-
Time gains from managing affairs	8	-	17		13		22	+	43	+	21		10		12		7	-
Other	2		3		2		3		4		4		3		0		2	
None	59		53		50		44		33		42		51		22		69	+

Good qualities	Below 1001 EEK		1001–2000 EEK		2001–3000 EEK		Over 3000 EEK		Capital		Large city		County centre		Other town		Small town		Village	
	%	Sig.	%	Sig.	%	Sig.	%	Sig.	%	Sig.	%	Sig.	%	Sig.	%	Sig.	%	Sig.	%	Sig.
Access to information	45		32	-	47		51		45		42		26	-	48		29	-	37	
Access to products and services	6	+	3		3		2		5		2		0		2		2		5	
Interpersonal contact	17		16		23		24		25	+	13		10		21		13		15	
Low cost/service fee	3		4		0		1		3		2		0		4		3		1	
Fast access to products/services	9		4	-	10	+	6		7		2		7		6		7		6	
Retrieval of information without leaving home	25		19	-	26		38	+	31	+	15	-	13		32		21		18	
Examination and discovery of interesting information	19		15	-	29	+	25		24	+	12	-	9	-	28	+	18		18	
Time gains from managing affairs	12		13		19		21		16		9		11		23	+	10		13	
Other	3		2		1		0		2		3		0		0		0		8	+
None	52		60	+	44		37	-	49		53		70	+	40	-	59		50	

Good qualities	Lives with children		Children live separately		No children	
	%	Sig.	%	Sig.	%	Sig.
Access to information	46	+	29	-	52	+
Access to products and services	6	+	1	-	1	
Interpersonal contact	22	+	15		17	
Low cost/service fee	2		2		3	
Fast access to products/services	7		5		5	
Retrieval of information without leaving home	26		17	-	31	
Examination and discovery of interesting information	26	+	12	-	21	
Time gains from managing affairs	14		13		16	
Other	2		3		0	
None	47	-	62	+	42	-

Tables 5–8. Percentage of non-users of the Internet who agreed to the following statements about personal areas of use (+/- marks a statistically significant (95%) difference when compared to all the non-users of the Internet, n=600)

Area of use	Woman		Man		Estonian		Other		15–24		25–34		35–49		50–64		65–74	
	%	Sig.	%	Sig.	%	Sig.	%	Sig.	%	Sig.	%	Sig.	%	Sig.	%	Sig.	%	Sig.
Sending/reading of e-mails	12		16		14		14		33	+	26	+	19	+	5	-	5	-
Searching for information (news, weather forecast)	20	-	30	+	21	-	29	+	54	+	30		34	+	12	-	13	-
Discussion groups/chat rooms	2		2		2		1		10	+	1		1		1		0	
Leisure (travel offers, events)	5		4		3		7		17	+	2		8	+	2		0	-
Playing of computer games	6		10		5	-	13	+	25	+	20	+	11		1	-	1	-
Purchases	2		2		2		2		0		2		4	+	2		0	
Internet auctions	0		0		0		1		0		0		1		0		0	
Banking and investment services	16		16		14		19		26		26	+	26	+	8	-	3	-
Advertisements (jobs/dwellings /cars)	9		13		10		12		25	+	17		17	+	5	-	1	-
Phone calls through Internet	4		5		2	-	7	+	6		10	+	4		2		3	
Listening to and downloading of music	4	-	8	+	4	-	9	+	19	+	17	+	6		1	-	0	-
Health services (booking of appointments)	8		6		5	-	10	+	13		3		9		5		5	
National/public services	6		9		8		7		13		6		13	+	4	-	3	-
Entertainment for adults	2		4		2		4		3		8	+	4		0	-	0	-
Joining of clubs, associations	1		0		0		1		3		0		1		0		0	
None	70	+	58	-	69	+	59	-	38	-	46	-	52	-	79	+	85	+

Area of use	Basic education		Secondary education		Vocational secondary education		Higher education		Managers		Specialists		Workers		Pupils		Pensioners	
	%	Sig.	%	Sig.	%	Sig.	%	Sig.	%	Sig.	%	Sig.	%	Sig.	%	Sig.	%	Sig.
Sending/reading of e-mails	9	-	15		17		14		25		19		16	+	12		4	-
Searching for information (news, weather forecast)	17	-	25		27		27		42	+	33	+	23		54		11	-
Discussion groups/chat rooms	1		1		2		1		0		2		2		0		1	-
Leisure (travel offers, events)	2		4		6		7		15		6		6		0		0	-
Playing of computer games	9		10		8		4		21	+	15	+	9		42	+	2	-
Purchases	2		2		2		2		0		6	+	3		0		0	-
Internet auctions	0		0		1		0		0		1		0		0		0	
Banking and investment services	9	-	19		19		13		29	+	19		19		24		5	-
Advertisements (jobs/dwellings /cars)	9		10		14		8		8		16		14		0		1	-
Phone calls through Internet	3		3		5		8		8		6		4		15		2	
Listening to and downloading of music	9		6		6		1	-	4		9		9		0		2	-
Health services (booking of appointments)	2	-	8		8		10		10		6		8		0		4	
National/public services	2	-	7		11	+	8		18		11		9		12		2	-
Entertainment for adults	1		4		4		1		4		8	+	4		0		0	-
Joining of clubs, associations	0		1		1		0		0		0		1		0		0	
None	73	+	64		60		63		55		53	-	59		34	-	84	+

Area of use	Below 1001 EEK		1001–2000 EEK		2001–3000 EEK		Over 3000 EEK		Capital		Large city		County centre		Other town		Small town		Village	
	%	Sig.	%	Sig.	%	Sig.	%	Sig.	%	Sig.	%	Sig.	%	Sig.	%	Sig.	%	Sig.		
Sending/reading of e-mails	13		12		19		16		10		11		14		24	+	11		18	
Searching for information (news, weather forecast)	33	+	19	-	27		23		26		28		24		27		15		23	
Discussion groups/chat rooms	1		2		0		3		3		1		0		0		1		1	
Leisure (travel offers, events)	7		3		3		10		5		4		0		12	+	5		2	
Playing of computer games	8		6		10		10		12	+	10		2	-	11		1	-	5	
Purchases	2		1	-	1		8	+	2		0		0		4		3		2	
Internet auctions	0		0		0		0		1		0		0		0		0		0	
Banking and investment services	16		13		24	+	17		15		17		11		23		14		16	
Advertisements (jobs/dwellings /cars)	13		8	-	15		15		14		5	-	8		14		8		10	
Phone calls through Internet	7		4		3		3		5		5		2		4		0	-	7	
Listening to and downloading of music	4		6		6		8		7		5		6		9		4		4	
Health services (booking of appointments)	8		6		8		7		9		7		8		4		4		6	
National/public services	8		7		10		8		4		11		0	-	11		8		10	
Entertainment for adults	3		2		3		7		3		4		2		5		1		2	
Joining of clubs, associations	1		0		0		0		1		1		0		0		0		0	
None	61		71	+	59		56		60		63		70		64		76	+	66	

Area of use	<i>Lives with children</i>		<i>Children live separately</i>		<i>No children</i>	
	%	Sig.	%	Sig.	%	Sig.
Sending/reading of e-mails	19	+	8	-	19	
Searching for information (news, weather forecast)	29	+	16	-	33	+
Discussion groups/chat rooms	1		1		3	
Leisure (travel offers, events)	5		3		9	+
Playing of computer games	10		2	-	17	+
Purchases	2		2		2	
Internet auctions	0		0		0	
Banking and investment services	21	+	11	-	19	
Advertisements (jobs/dwellings /cars)	14	+	8	-	11	
Phone calls through Internet	5		3		5	
Listening to and downloading of music	5		3	-	17	+
Health services (booking of appointments)	7		6		8	
National/public services	8		6		10	
Entertainment for adults	4		2		4	
Joining of clubs, associations	0		1		1	
None	58	-	75	+	52	-

Tables 8–11. Percentage of non-users of the Internet who provided the following reasons for not using the Internet (+/- marks a statistically significant difference when compared to all the non-users of the Internet, n=600)

Reasons	Woman		Man		Estonian		Other		15–24		25–34		35–49		50–64		65–74	
	%	Sig.	%	Sig.	%	Sig.	%	Sig.	%	Sig.	%	Sig.	%	Sig.	%	Sig.	%	Sig.
No access	43		44		40	-	49	+	56		51		50	+	39		32	-
Cannot use, complicated to use	27		25		36	+	12	-	18		17	-	28		27		31	
No need	35		41		47	+	25	-	30		34		37		39		42	
Not reliable, secure	2		1		2		1		4		0		2		1		1	
Other	2		2		1		2		2		2		2		0	-	3	
No computer	1		1		1		2		4		0		1		1		1	
Expensive service; no money	5		4		3	-	7	+	0		7		5		4		6	
Cannot say	22		15		16	-	24	+	17		14		8	-	28	+	25	+

Reasons	Basic education		Secondary education		Vocational secondary education		Higher education		Managers		Specialists		Workers		Pupils		Pensioners	
	%	Sig.	%	Sig.	%	Sig.	%	Sig.	%	Sig.	%	Sig.	%	Sig.	%	Sig.	%	Sig.
No access	44		42		45		42		49		48		48		66		31	-
Cannot use, complicated to use	28		23		28		22		27		32		22		0		30	
No need	47	+	39		34		26	-	22		37		38		24		40	
Not reliable, secure	2		0		2		2		0		0		2		0		1	
Other	2		0		3		3		7		5	+	0	-	0		2	
No computer	3		0		2		0		0		2		2		0		1	
Expensive service; no money	2		5		3		15	+	4		7		3		0		5	
Cannot say	20		19		17		20		18		6	-	18		22		29	+

Reasons	Below 1001 EEK		1001–2000 EEK		2001–3000 EEK		Over 3000 EEK		Capital		Large city		County centre		Other town		Small town		Village	
	%	Sig.	%	Sig.	%	Sig.	%	Sig.	%	Sig.	%	Sig.	%	Sig.	%	Sig.	%	Sig.		
No access	49		40		51		49		47		36		46		42		43		45	
Cannot use, complicated to use	29		30	+	18	-	17		19	-	14	-	22		18		44	+	51	+
No need	29		38		36		45		22	-	39		52	+	45		47		46	
Not reliable, secure	3		1		1		5		1		3		0		0		4		2	
Other	1		1		4	+	0		1		2		0		2		2		3	
No computer	1		1		3		2		2		0		0		4		1		0	
Expensive service; no money	5		5		3		4		7		9	+	5		0	-	0	-	5	
Cannot say	19		21		19		15		28	+	15		21		16		10		12	

Reasons	Lives with children		Children live separately		No children	
	%	Sig.	%	Sig.	%	Sig.
No access	47		40		47	
Cannot use, complicated to use	26		29		19	
No need	36		40		35	
Not reliable, secure	1		1		4	
Other	2		1		1	
No computer	1		2		2	
Expensive service; no money	6		5		2	
Cannot say	14	-	23	+	19	

ANNEX 4: FOCUS GROUPS REPORT

Mari Kalkun

Introduction

During the period from 22 to 25 January 2002, AS Emor conducted a focus group study among Estonian residents aged 25–64.

The objective of the study was to identify:

- the factors (including the needs) motivating and affecting the use of computers and the Internet among different segments;
- the attitudes impeding the use of computers and the Internet (lack of trust, insufficient security, etc.);
- the logic of the technology of the segments studied and use of the web or the features for which light users and non-users of computers and the Internet value the attraction of using technology (e.g. simple, convenient, etc.).

The report presents the results of the study as a summary conclusion, illustrated by original quotes from interviews (given in italics). The objective of this report is to provide generalisations and summary conclusions on the basis of five focus groups, accompanied by descriptive information for a further expert analysis for the Praxis Center for Policy Studies. The objective of the study has motivated the inclusion of above average number of original quotes.

1. Method

1.1 General methodology

Recruitment

The representatives of the target group were selected on the basis of the recruitment questionnaire. The representatives of the target group were found through face-to-face interviews at sales points, in the streets or at homes.

Interview method

The interview method applied was a focus group interview. The interviews were conducted by moderators with previous special training and long-term practical experience. The study report was prepared by one of the moderators.

In the course of the interviews, the participants were requested to complete questionnaires on the spot and attempt to search information on the Internet, in addition to the interview based on the focused interview techniques.

Duration of interview

The duration of the group interviews was two hours.

Conducting of interview

The interview was based on the task set by the client and the interview plan prepared according to it.

The focus group interviews were held on the premises of Emor in Tallinn, in Jõhvi, in the small town of Sõmeru and in Kolga village on premises furnished according to the requirements of qualitative research.

All the interviews were recorded and complete shorthand records of the interviews were prepared.

Analysis

The study report was prepared on the basis of the content analysis of the collected textual material across different target groups, as provided in the task by the client.

Processing of data

The analysis programme of qualitative data NUD*IST was used to process the data.

1.2 Sample

The target group of the study included Estonian and non-Estonian residents (Russian-speaking residents of Estonia) having permanent residence in Estonia and aged 25–64.

The study comprised five focus group interviews, the inclusion of participants in the group was based on their awareness of a public Internet access point (PIAP) near their residence or workplace, but the participants themselves had not used the Internet (non-users) or had used it less frequently than once a month (light users). The groups were distributed as follows:

- group 1: Estonians residing in Tallinn and aged 25–49;
- group 2: non-Estonians residing in Tallinn and aged 25–64;
- group 3: non-Estonians residing in Jõhvi or Kohtla-Järve and aged 25–64;
- group 4: Estonians residing in Sõmeru (Lääne-Viru county) and aged 50–64;
- group 5: Estonians residing in Kolga (Harju county) and aged 25–49.

1.3 Project working group

The following persons participated in and were responsible for the different stages of the study.

General coordinator of project by Emor:	Mari Kalkun
Group interview leaders:	Esta Kaal, Jana Bruns, Mari Kalkun
Drafter of report:	Mari Kalkun
Project consultants:	Esta Kaal, Ülle Pärnoja
Sample and recruitment:	Anu Vavilov
Coordinators:	Marju Kalve
Technology:	Aleksei Gromov

2. Results

The following abbreviations and font styles have been used when presenting the results.

- *Italics* — original words, phrases, sentences, quotes from the interviews.
- The quotes are followed by references to their origin in the following form: /respondent language-nationality, sex, age group, Internet experience/. Abbreviations and references:
 - o Estonian (E), Russian (R);
 - o female (F), male (M);
 - o respondents aged 25–39 (25–39), aged 40–49 (40–49), aged 50–55 (50–55), aged 56–64 (56–64); generalising age groups 25–49, 25–55 and 50–64 have also been used;
 - o without previous Internet experience (in1), uses the Internet less frequently than once in three months (in2), uses the Internet less frequently than once in one month (in3), uses/has used the Internet more often than once a month (in4).

For example: /R,F,40–49,in2/ means that the respondent was a woman aged 40–49 in the Russian-speaking group, who uses the Internet less often than once in three months. If the particular quote lacks a reference to the object of the quote, an author's comment has been added in square brackets [the Internet is].

- o If the characteristic manner of expression is manifested in the conversation between several people, a section of the conversation has been provided with a reference to the group where the interview was held, for example: an extract from the conversation that evolved in Sõmeru.

The report was prepared with a view of providing an as detailed overview of the attitudes to the Internet and services accompanying the Internet as possible, recorded during the group interviews, to enable the persons responsible for the following stages of the ICT project to use material that is as extensive as possible and close to the original.

2.1 Awareness of Internet

2.1.1 First thoughts and emotions related to Internet

Non-users of the Internet frequently associate nothing to the Internet or associate direct usage opportunities, and certain fears.

Before starting the interview about the Internet in the focus groups, we requested the participants to write down their thoughts and emotions associated with the word "Internet". Many respondents immediately tackled the opportunities provided by the Internet, leaving aside their emotions. However, some emotions associated with the Internet were still written down.

- 1)** Several non-users of the Internet mentioned that “they did not associate anything with the Internet”, this more often concerned people of the older age group (50–64).

This indicates that these people have not carefully considered their relationship with the Internet. They have not felt that they should be personally affected by the Internet; thus, they may pay little attention to the conversations, programmes and campaigns opening with the word “Internet”;

- 2)** non-users of the Internet often also pointed out certain fears and vagueness in relation to the Internet.

They admit that the Internet is unfamiliar and therefore frightening, consequently people do not seek contacts with it voluntarily;

- 3)** non-users often mentioned concrete opportunities to use the Internet, which encompassed a wide range: management of affairs (payment of taxes), acquisition of information, communication (correspondence), entertainment (games, anecdotes);

- 4)** the first references imply a certain attitude that the Internet is an advantage of the rich, while also an inevitable part of life for everyone in the future.

The people with previous experience of use rather mention interest in the Internet, many references are made to seeking of information.

People who had previously used the Internet expressed their fear, but even more their curiosity about the Internet. Many references were made to the opportunities provided by the Internet, most often, to voluminous information. Surprisingly few references were made to communication opportunities, male respondents never pointed out communication over the Internet as the first association. When compared to people who had not used the Internet before, the range of the Internet opportunities indicated by people who had experience in using the Internet was wider, they also mentioned the commercial aspect (a source of earning, information necessary for business people, advantage of the rich, department stores) and entertainment (games).

The following were pointed out as positive qualities of the Internet:

- 1)** the Internet is a very attractive phenomenon, offering ample opportunities;
- 2)** the next option pointed out was search for information. The written responses very often depict the Internet as a large, sometimes even a somewhat frightening databank;

- 3) Russian-speaking respondents regard the Internet also as a tool for business people:

The Internet, it is a databank providing information that is necessary for business people. /R,M,25–39,in2I

- 4) non-Estonians introduced various comparisons and associations considerably more often:

"An interesting" colourful TV-set, which broadcasts something interesting if I wish. Fascinating new models are shown on TV. An invisible cobweb, but very strong and influential. Playing children, a child typing fast. /R,F,40–49,in4/

The first associations indicated above imply, further to interest (mainly people having previous usage experience) and fear (mainly people having no usage experience) one more human approach — respondents mention "others" in relation to the Internet: more often children and business people. This signals that for several people participating in the groups the Internet is something distant that relates to others rather than to their own life.

2.1.2 Awareness of use opportunities offered by computer and Internet

Before proceeding to discuss the Internet, we asked the participants in the group if they considered computer skills necessary in the modern world. The majority of the participants responded, "Yes, they are beneficial", with a reservation that the skills could not help them personally:

For me? Nothing. In my things that I do, it can't help me. It is like a toy. If it is connected to the Internet, there may be some benefit. But just like that, it is simply a box. /R,M,25–39,in1/

Thereafter we spoke about the purposes for which computers were used, the Internet opportunities were pointed out in several groups alongside the opportunities for use offered by computers. This applied both to the people who had no previous Internet experience and people who had some experience. We may conclude that for the person in the street, computers and the Internet are very strongly linked.

Non-users of the Internet know the main functions of computers and the Internet well.

On the general level, non-users know the opportunities provided by the Internet and computers well. In relation to computers, the respondents mainly mention that children play on them and do their homework:

I have not thought about that before. I don't have a computer. My child learns at school. Visits her friend. Plays and learns. Payments can be made, this is very good. /E,F,40–49,in1/

Regarding the Internet, people are aware of information searching (“you can read a paper there”), communication opportunities (“you can communicate with a friend”) and the opportunity of bank transfers.

- 1) Most often, the Internet is seen as an opportunity to search for information, while very different kinds of information are pointed out: buses, travelling, hobbies, recipes, operations, etc.:

On a relevant computer page you can find some recipe for cooking to technical miracles. /E,M,25-49,in1/

- 2) Communication opportunities are also mentioned.

- 3) In relation to management of various affairs, most often only payment of taxes and management of company affairs are pointed out:

Who is a specialist, draws money from the bank, transfers to his name, who is a specialist. /E,M,50-64,in1/

- 4) Entertainment is relatively little associated with the Internet, this issue is manifested primarily through children — they play games. “Good pictures” were mentioned only once.

- 5) A reference was also made to commercial opportunities.

People who have not used the Internet previously know the opportunities offered by the Internet relatively well on a general level. The main functions of the Internet are always pointed out, the function of seeking information being the most distinctive one, people are also very well aware of the bank transfer opportunities. Information search tends to involve seeking of the information that is of personal interest for people (travelling information, cooking, etc.), not related to management of affairs. Rather, searching for information related to management of affairs is associated with business people.

People having prior Internet experience often link computers and the Internet to work.

Computers are regarded as useful primarily in relation with work, people frequently do not consider computers useful for them personally, except for playing games:

I do not play computer games. I can decide on work issues without a computer. /R,F,..,in3/

As mentioned before, when discussing the opportunities offered by computers, both the people without previous Internet experience and with previous Internet experience associate computer opportunities with Internet opportunities, while banks are mentioned most often:

Banks. If you learn to type fast, there are games. /E,M,25-39,in2/

Communication opportunities were pointed out surprisingly rarely. Male respondents did not mention this option.

The following table provides an overview of the opportunities that different groups collectively wrote on a board answering the question: why do people use the Internet? For the sake of clarity, the opportunities have been organised by the author of the report.

Tallinn I	Tallinn II (Russian, aged 30-54)	Jõhvi (Russian, aged 34-51)	Sõmeru (Estonian, aged 50-64)	Kolga (Estonian, aged 25-49)
<ul style="list-style-type: none"> • Reasons for using the Internet were not written on the board 	<ul style="list-style-type: none"> • Search for information • Bank operations • Communication messages friends • Purchases • Music, cinema • Earning of money 	<ul style="list-style-type: none"> • Information: news • Bank transfers • Communication as telephony link with people • Music, films • Earning of money • Information: for business purposes • Games • Printing 	<ul style="list-style-type: none"> • Information • Taxes • E-mail, messages • Databases job seeking orders • Games 	<ul style="list-style-type: none"> • Acquisition of information: health care interesting reports newspaper • Information processing • Payment of invoices • Management of affairs • Communication (messages) • Entertainment games • Sale and purchase • Gardening into the computer

All the groups mentioned the opportunity to search for information as well as payment of taxes and communication. In communication, the Internet is regarded as an intermediary on the one hand: "messages, e-mail"; the Internet is also mentioned as the creator/fixer of the link between people on the other hand: "friends, a link to people".

Besides bank operations and payment of taxes, more general management of affairs was mentioned only in Kolga village. Business affairs were discussed in all the groups, as purchasing of things, purchase and sale and orders or as a means of earning money and an intermediary of job advertisements. All the groups also pointed out the role of entertainment — as music, cinema or games.

2.2 Computer and Internet experience

Non-users have had a contact with the computer, but most frequently a short-term one.

Several of non-users of the Internet have had a contact with the computer, but this was mostly in the past and in the form of computer courses:

I was taught how to type. But I can only start a computer. /R,F,40-49,in1/
It was not easy, I took the courses, basic courses but I still don't dare to go everywhere. /E,F,50-64,in1/

It may be inferred from the quotes that although people have once learned to use the computer, their attitude is hesitant. It also appeared during later interviews that without long-term practice a relationship with the computer remains very uncertain.

A fascinating phenomenon became evident in Kolga village: a person pays her bills over the Internet without actually accessing the Internet — the bank transfers are made by an Internet access point consultant. How to categorise the relationship of such people with the Internet? They cannot define it themselves. People having little Internet experience have had access to computers and the Internet, but the relationship is rather uncertain.

People who have sometimes used the Internet or use it relatively often remain uncertain in their relationship to the computer. This also means that although statistically we may speak about a relatively large number of Internet users, few people have adequate knowledge:

I wouldn't say that I am a skilled user. If I have wanted something at my friend's place, he has searched for it for me. But I would still be interested in having a computer at home. /E,M,40-49,in2/

2.3 Reasons for little Internet use

2.3.1 Non-users have not analysed why they do not use the Internet or do not feel that it is necessary

- 1) Several participants who had not used the Internet before admitted that they had not contemplated why they did not use the Internet:

A computer may be quite interesting. I know that people who have computers remain there for hours. My friend's husband is like that. But if I had it at home, I don't know, I have other errands to run and plans. If I know how to do it, it may certainly be interesting. /E,F,40-49,in1/

It appears from the quote above that the domestic affairs of the respondent are fine also without the Internet, she has not considered using the Internet. When analysing in greater detail, people may also say, "if it's clear how to use it, it may certainly be interesting" — the underlying reason for not using the Internet may also be the insufficient skills of the respondent.

- 2) If people have not considered why they do not use the Internet, they are still requested to find a reason, and they most often conclude that there is no need:

I don't need it. My granddaughter plays on it. /E,M,56-64,in1/

In the group interviewed in Sõmeru, the participants in which were aged 50–64, all non-users admitted no need for using the Internet. Why is there no need for these people, whereas there is need for others? The people of Sõmeru considered as the reason their age and the fact that their work did not require Internet use:

Who have such a job. /E,F,50-64,in1/

In younger families, why not. / E,M,50-64,in1/

We may conclude that, according to many people, the reason for using the Internet is either work or (as a special characteristic of Estonia) age — children use computers and the Internet. People believe that the Internet cannot help them in their personal lives, their personal lives develop in an established framework with its pleasant and unpleasant routines and no external means can interfere with it.

- 3) Lack of money and opportunities. People with no previous experience rarely point to the lack of money and opportunities as the reasons.

The issue of finances was more topical in the Russian group organised in Jõhvi.

- 4) People lack appropriate skills, using computers is difficult. Direct references to the complicated nature of computer operations and inadequate skills are very uncommon; however, a detailed analysis reveals a certain fear, “if something goes wrong, I can’t do anything”, “if I know how to do this, it may be useful”, “who is a specialist can use it”:

I could have a computer, but I don't ever think that I could learn so much. / E,F,50-64,in1/

You have to have a good memory, because you have to memorise all these things. /E,F,50-64,in1/

- 5) Insufficient language skills were also pointed out. People know that computers use English, all the orders and instructions are in a foreign language and therefore people feel that they simply cannot manage computers.

- 6) Unskilled people have no courage to learn in a public place:

I asked one woman why she didn't use it. She was also ashamed because there were schoolchildren but she was already 35. An Internet access point could be opened for those who are over 35. Separately. /R,M,25-55,in2-4/

People who have never used the Internet are often characterised also by not having thought about the need. In their view, Internet use is either related to work tasks or young age. If the work tasks do not require it and people are no longer children or youth, they do not feel a link to computers. There is very little or no awareness that the Internet could help people in their personal lives. Non-users of the Internet do not point out insufficient skills. However, some uncertainty in communicating with computers and shame before skilled people may be detected.

2.3.2 Reasons for little use listed by people having prior experience

When interviewing people about using computers, people often channel the conversation to owning a computer. This means that for people a more frequent use of computers is directly related to owning a computer (we will examine the reasons why having a computer is essential for more frequent use in section 2.5 — Logic and necessities of acquisition of computer and Internet

- 1) Due to reasons independent of people it is unreasonable to purchase a home computer or a home computer cannot be connected to the Internet:
 - power supply is poor, so there's no point in buying such expensive equipment for home;
 - if there's no telephone connection, there's no access to the Internet.

- 2) People do not have a computer at home, while they cannot/do not want to go to a public Internet access point, unpleasant experiences related to public Internet access points (to be examined separately later on).

- 3) People speak about fear:

Well, I told you that I don't understand how the Internet works. I usually don't go on the Internet. Only for business. Our company has a home page. I know what buttons to press. I get information and then close it right away. This is an incomprehensible virtuality. And what is incomprehensible for me is frightening.

/... / As I said, I use it only at work. When I need to obtain the lists. I pay taxes through an ATM. Communication, I better communicate with my friends in real life. Correspondence — I better write a letter. /R,F,25–39,in4/

- 4) People often mention an actual lack of skills, which is sometimes concealed attitudes: it is time-consuming, etc.:

At first you don't really know what to do with the computer. These Internet access points and cafes, there are such people who ... No-one comes and shows you anything just like that. And if you ask, he gets you to the right place himself and you get your information. But next time you still can't do it yourself. You need basic education for that. /E,F,40–49,in2/

People mention fear that they prevent someone's activities by their poor performance:

If there were more such places, in every second grocery and petrol station, people would get used to it that there are many such points, then maybe I would go and use this public Internet access point and wouldn't worry about that. /E,F,25–39,in4/

- 5) Little use has also been reasoned by an allegation that computers are bad for health.
- 6) The reason may however be very emotional, caused by a previous unpleasant experience:

I use the Internet at work, right now I am at home with a baby and I don't have a computer at home. I don't really love it, I can't read for a long time, my eyes start to hurt. The programs are unfortunately also in English, then I get lost everywhere. /E,F,25–39,in4/

- 7) Spontaneously lack of security about the Internet was not pointed out as a reason for little use. In a later interview one of the participants noted that he would not use Internet banking as he did not want to show his numbers.

The participants in other groups are aware of the possibilities of theft and hacking, but they do not consider it a threat for themselves:

Let's say that such small fish as we are of interest for few people, it must be a valuable site that is accessed. /E,F,50–64,in1/

2.3.3 Attitudes and “others”

People with no usage experience hold strong attitudes both to the other users and computers themselves.

People generally admit that computers are necessary and inevitable, “good things, as a matter of fact”, but, as already mentioned before, people do not feel the need to use computers themselves. The necessity is rather ascribed to families with children and people who work.

- 1) People do not relate themselves to computers and the Internet; very many opinions have evolved about the use of computers by others, the largest reference group being children. This is definitely so also because almost everyone participating in the groups has children or grandchildren. In the case of children, many positive qualities were pointed out: children can handle computers, do their homework, children need computers:

The child does it so fast. But I... /R,F,40–49,in1/

- 2) People also spoke about their friends and other people:

A computer may be quite interesting. I know that those who have computers spend hours at them. My friend’s husband is like that. /E,F,40–49,in1/

- 3) In relation to children also many negative qualities are pointed out, exemplified by an extract of the conversation that developed in Sõmeru village (the participants were aged 50–64):

- *My children only communicate over this e-mail or whatever it is that they have.*
- *I see those grandchildren what they are like.*
- *It’s the same with me.*
- *There, only inside and ...*
- *They are there for a little too long.*
- *They play.*
- *Let them play.*
- *Too much.*
- *Yeah, you know, it’d be more useful to read a book.*
- *That’s why they can’t read that they only play at computers.*
- *They really can’t.*
- *They only read such...*
- *They can’t read but play at computers.*
- *Yes.*
- *They play, but can’t read.*
- *They can read, really.*
- *It’s even with TV games, they are different, but it’s even with TV games that a three-year old boy, he can’t read but he can play. This is basically the same. /E,M,50–64,in1/*
- *There’s nothing, for younger people it’s computers, computers, computers all the time, they already have their Estonian mixed with English so that... /E,F,25–49,in1/*

- 4) An attitude that computers themselves encourage addiction. Fear when people have a computer at home:

It becomes such a rule later that you come home and must play at the computer. /E,F,50-64,in1/

- 5) Attitudes were stronger in Russian groups:

There was a weird case during the trip. The Baltic States have a common computer database. And it's necessary to enter passport data on the border. It went very slowly. But on the Polish border, the guard had a thick book with the help of which he checked the whole bus during 15 minutes. New passports are scanned anyway. Then computers can be of use. But if they type every letter. /R,M,25-39,in1/

More attitudes: it is alcoholism, the disease of the century, it is for the lazy, it is for busy people, waste of time;

- 6) At the same time people express their willingness to acquire the necessary computer skills, especially in the two Estonian groups outside Tallinn, where participants have never had contacts with computers or the Internet:

- Until now we have coped with everything. But this is of no interest for me and I do not engage in it. /E,M,40-49, in1/

- It'll be compulsory, so that we can no longer live without a computer. /E,F,25-49,in1/

- Then I'll learn it. Even if I don't want, I'll manage. /E,M,40-49, in1/

The above attitudes reveal that in relation to the Internet, people develop an attitude: I vs. children; I vs. skilled users. Children and other skilled users are looked up to, to save their faces people find negative qualities characteristic of skilled users, "can't read", "can't speak Estonian", "for hours at the computer". Such an attitude is not characteristic of everyone, but a certain tendency can be detected.

Particularly Russian groups pointed out several examples about the disadvantages of computers, "bad for health", "no big improvement in quality," etc. Thus several non-users of computers and the Internet have definite excuses why they should not use such equipment.

People are still willing to learn, although the willingness is rather passive — if they make us do it, we will learn, we have managed things before.

The attitudes of people having prior experience are more lenient.

People who have previously accessed the Internet have fewer attitudes and these are less definite than those of non-users of the Internet.

- 1) The general attitude to life of various people definitely has its role. People who have more courage do not assume strong negative dispositions about computers and the Internet either.
- 2) Distinction between adults and children is also characteristic of people who have accessed the Internet:

Adults grasp this thing somewhat differently. I have a very good experience. I have a nephew. He was fourteen months old, sat at the computer, he knew the keyboard. He played his game so peacefully. He couldn't read, there he learned the numbers, he learned everything by himself. /E,F,2,in2/

- 3) Also a certain attitude may be detected that confirms, "I as a user with very little experience am no worse than some frequent user":

Very many people only know about their work, they do this thing all the time and they have no time to go anywhere else either. I ask what can you do with the computer, then he says, not much, I only know that. /E,F,2,in2/

- 4) In several instances the bad quality of computers and the Internet — being a "waste of time" — is pointed out:

You hear all the time that someone sits there at the computer again and the other things are not done. You simply waste your time on it. /E,M,25-39,in2/

- 5) It is interesting that several younger users of the Internet referred to the elderly who may be soon more skilled at using the Internet than they:

I imagine that when it becomes a trend, then ... if old people go there, middle-aged people will also go there for their own money. It would attract more people to PIAP. To provide more opportunities to those who have taken the courses to communicate with the computer. /E,M,25-39,in3/

2.3.4 Simplicity of use, perceived logic

Computers are difficult for people with no previous experience because of a foreign language, bad memory and the fear of mishaps.

The question of whether using a computer was simple elicited both affirmative and negative answers. A distinction can be drawn between the opinions of people of different ages. If younger non-users generally believe that it is possible to learn to use computers, people aged 50 and above do not believe in the simplicity of computer use. An example of the conversation that developed in Sömeru village about the simple or complicated nature of using computers:

- *This is already complicated stuff.*
- *I also believe that it is.*
- *You already need your wits there and.*

- No, it's not.
- No, it's not that complicated.
- It seems difficult at first.
- And if you are really interested, then I believe that you'll manage.
- Of course.
- But if there's no interest and no need, then you won't do it.
- Complicated.
- Complicated it is.
- For so old people, of course it's complicated.

- 1) One of the barriers to using computers and the Internet is definitely the language, the acquisition of which presents difficulties for the elderly.

The language concern is very important also for non-Estonians:

Most often it [the computer] writes in English. And if you don't know what to do. It helps you, but you cannot understand. Disservice. /R,F,25-39-3,in1/

- 2) People also experience an actual fear of mishaps, due to which they cannot manage their affairs or they break the computer:

There's such a feeling that you won't manage and it breaks down. /E,F,25-39,in1/

- 3) Especially elderly people also have the problem that operations practised once or twice are easily forgotten.

Use of computers is difficult for people primarily due to a foreign language, but also the fact that all the necessary operations cannot be memorised. In both aspects cell phones are considered to have more advantages. Insufficient skills are accompanied by the fear that something goes wrong, which causes damage to people themselves (money transfer) or the computer, incurring expenditure for repairs.

People having prior experience often point out little practice and the fear of mishaps generated thereby.

- 1) People mention language-related difficulties: if in non-users the language issue emerged mainly in the interviews with elderly people, in users the language issue is also specified by young people:

Sometimes it's also so that it asks you if you want to do this thing and doesn't explain much, no or yes. If you say yes, it will screw something up. It's been twice like that. Once it zipped all the things and the screen was empty. /E,F,2,in3/

- 2) People who had had contacts with computers and the Internet also very often mentioned insufficient practice and the accompanying fear and uncertainty:

It began from the training. If you don't have a computer at home, you start to forget. An hour is not enough to recall it. /E,M,25-39,in3/

It is. It's the fifth month that I work with a computer every day. I am no longer afraid of it. I can manage now on my own. I am no longer afraid that I press a wrong key. /E,F,25-39,in3/

The last quote originates from a young Estonian woman who had attended computer training at school for four years, but nevertheless feared the computer; she overcame her fear of mishaps only after five months of working practice. A similar attitude — relatively frequent practice opportunities, but something goes constantly wrong and a person must bother the others — was also expressed by another Estonian woman:

I have considered buying one for home. But somehow they don't want to work with me, they crash. At work the IT specialists said, interesting, if we take the computer upstairs, it works there all the time, but down here it won't print or do anything. I have used them, but I don't love them. /E,F,25-39,in4/

- 3)** When people with no previous experience in using the Internet are afraid that something may go wrong, people who have used computers or the Internet have already faced mishaps:

My sad experience when I used the Internet bank. I wanted to make a payment. And instead of printing it out, I made a mistake and pressed a wrong key and of course it took that amount twice. I had to struggle a lot to get it back. /E,M,2,in2/

- 4)** The above quote expresses the fear accompanying insufficient skills that inadequate users disturb “skilled” people, but they do not wish to do that.
- 5)** All the reasons mentioned above conclusively indicate that using computers is not easy for people, most of the operations related to computers present difficulties, for example, a person using a computer for her job attempted to read a newspaper on the Internet:

To be honest, it was not easy for me. I kept trying to access the site, I have read papers twice. Now I haven't subscribed, I forgot to subscribe. The screen was so small, such a narrow thing. I thought a lot how to make it bigger. But I couldn't do it for example. /E,F,25-39,in3/

- 6)** People having prior experience in using the Internet know and admit the importance of knowing some specific program.

Here frequent comparisons were made to cell phones that people can study themselves at a convenient moment:

- You use it [a cell phone] more and the more you use, the more skilled you become. You can access the Internet once a month maybe and the next day you have forgotten it. /E,F,40-49,in2/

- You can fiddle and study a cell phone on the bus. If it breaks down, it is cheaper to repair than the Internet. /E,M,40-49,in2/

In relation to using the Internet, cell phones were introduced from different aspects rather often:

- a cell phone communicates with me in Estonian;
- a cell phone is smaller;
- you can study a cell phone on your own at any time as it is always in your pocket;
- if a cell phone breaks down as a result of incorrect use, it is cheaper to repair than a computer;
- a cell phone is simpler than the Internet.

People who have previously accessed the Internet do not consider it simple to use computers, they do not express hopelessness, but admit rather often that the task has been so complicated that they have given up. Stronger people pull themselves together and try again, whereas weaker people tend to develop attitudes — “I don’t need it”. It was admitted the most often that a more frequent use would add skills.

2.4 Motivation

What would attract infrequent users of computers and the Internet to computers and the Internet? Elderly non-users of the Internet do not believe that something would introduce them to the Internet; they consider the Internet to be for children and young people, as children need it for school and young people for work. Elderly people can manage their affairs nicely also without the Internet. They do not however preclude the option that they might use the Internet in five years time, for example.

People with no experience would be primarily motivated by seeking interesting information.

Non-users themselves consider work to be a motivator of computer and the Internet use. They also more generally point out “interest”, but do not perceive to have it themselves. Elderly people (aged 50–55, but particularly 56–64) do not believe that they would ever need computers or the Internet, while they are aware that the situation may change in Estonia and once this happens they may be obliged to use the Internet:

- CAN YOU IMAGINE THAT YOU MAY USE IT [THE INTERNET] IN FIVE YEARS' TIME, FOR EXAMPLE?
- At that time, maybe.
- Why not, if there's no other way.
- If it's necessary, then yes.
- And maybe I get lazy, so that I don't bother to go everywhere.
- And you can learn everything.
- Of course.
- It is like at first with the card, many didn't know how to withdraw money, but now. /Interview in Sõmeru/

At the closing of the interview, we requested the people to write down their activities in a public Internet access point, if it were close to their homes, there were no queues and the whole point would be at their disposal. Searching for information was mentioned most often, communication was also mentioned often, while some people only mentioned management of their affairs.

- 1) Several Estonian men who had not accessed the Internet so far wrote at the end of the interview that they were not interested in the Internet:

At first I'll give up the Internet! /E,M,4,in1/

I'm not interested in the Internet. /E,M,in1/

If there's no specific need, I wouldn't use the opportunity, or examine it out of boredom if I have to be in the same room with it. /E,M,2,in1/

This means that during a two-hour interview, these people did not develop a relationship with the Internet. It will be definitely very hard to reach these people as they tend to live in their established world, and if someone refutes their views, he is welcomed with reproach rather than with open arms. Besides the argument "I'm not interested, I don't need it" these people also point out lack of time as a reason. They do not often refer to financial problems, it may however be assumed on the basis of the interviews that lack of skills also serves as a barrier. The men expressing little interest were skilled workers (welders, locksmiths), who valued their own skills and most probably also the others' skills. They perceive the use of the Internet as a job requiring skills, which they do not possess. It is likely that wishing not to be disturbed in their own activities, they do not wish to disturb the activities of the other skilled people with their incompetent questions. This is accompanied by a high self-esteem — they know their work and activities, a tentative use of the computer would not confirm that feeling either in their own eyes or in those of others.

- 2) Estonian men who did not write "I give up the Internet" mentioned searching for information and management of affairs:

I would search for such news that I couldn't find anywhere else. /E,M,3,in1/

If I had a computer, I would read papers in the morning, make bank transfers and everything else. /E,M,2,in1/

Non-Estonians also tended to stress seeking of information although they also pointed out communication:

I would use it as a means of communication (e-mail). /R,M,1,in1/ Actually I don't know. But mainly for searching for useful information. /V,M,3,in1/ E-mail. Information. Chatting. Newspapers, magazines, not from Estonia. /R,M,2,in1/

- 3) Estonian women mentioned communication much more often than men, frequently they also pointed out searching for information.

Estonian women aged 56–64 frequently mention communication:

If I had a computer and knew how to use it, I would look at new literature; communicate with other relatives and friends who have computers; search for necessary information /E,F,4,in1/, read newspapers; correspond; search for information necessary for work, reference materials, sometimes poetry on a certain topic, etc.; introductions to new books; play /E,M,4,in1/ At first I give up the Internet! /E,F,4,in1/

Read a horoscope; correspondence with relatives. /E,F,4,in1/

Women aged 50–55 mentioned communication, searching for information and simply learning as a motive:

I'd wait for messages from children, travelling information. /E,F,3,in1/

On the Internet I'd seek work-related data and news, information. /E,F,3,in3/

I'd learn to use it. It's beneficial for work. General development. /R,F,3,in1/

Women of both nationalities aged 40–49 mention searching for information above all:

I'd search for information, look at interesting homepages, listen to the latest music, read newspapers, take a look at magazines, go to large department stores and order a food basket home. Travelling information and cheap trips. Theatre tickets and repertoires. /E,N,2,in1/

I'd primarily use it for seeking information. Virtual excursions. To find new friends who have the same hobbies. /R,F,2,in1/

They also mention entertainment:

I would look at news pages. Maybe played an interesting game. /E,F,2,in1/

And management of affairs:

Payment of taxes. That's it. /R,F,2,in1/

For example, I get an overview of my bank account, so that I can make payments. Now I go to the post office and that's it. /E,F,25–39,in1/

In addition, PIAP is viewed primarily as a place where to acquire computer skills:

If I had a computer, I would like to know how to use it properly, correctly. /E/F/2,in1/

The youngest women who have not used the Internet before pointed out searching for information and communication:

Home page; necessary information; games; searched hobbies. /E,F,1,in1/ Information; communication. /E,F,1,in1/

I'd send an e-mail to my mother if she had a computer at home. Or called over the Internet; go to a friend whom I haven't visited for a long time. /R,F,1,in1/

Discussions of communication over the Internet often lead to realisations that the other party should also have access to the Internet.

The most important motivator for people who have had contacts with the Internet would be searching for information.

Both people with no previous Internet experience and people who have used the Internet before find that work is the best means for attracting people to the Internet.

The interests of people who have used the Internet are similar to those of the non-users' group: searching for interesting information (newspapers, languages, tourism), communication, management of affairs and entertainment. Unlike non-users they also mentioned searching for legal information, whereas using of public sector services deserved no mention.

1) A type of respondents list a diverse selection of the activities that they would engage in:

Read papers; search a TV guide; examine laws that concern me; pay taxes; write messages to friends; play games. /E,M,2,in2/

As it is my hobby I would examine bee-keeping. Search for any interesting information. Examine laws. Learn about and use the computer more generally. Do anything that can be done. /E,M,1,in2/

Information about health. Language learning. Literature. History. Geography – tourism. Stock exchange (hard currency). Media. /R,F,1,in2/

Payments and transfers; newspapers, magazines; news – about a particular hobby; entertainment, games; searching for relationships; finding of potential clients; sending of e-mails; information. /E6,F,2,in3/

I would retrieve study materials; read magazines, newspapers; communicate with friends. /E,F,1,in3/

Obtaining of information. Payment of taxes. Correspondence. /R,F, ,in3/

I'd talk to my friends from Tallinn and Finland. Reading of magazines, newspapers. Payment of taxes. /R,F,1,in3/

2) The others mention one or two opportunities:

Communication with relatives and family. /R,M,1,in2/

I'd still use it rarely, only if really necessary. I would search for information. For example, news about literature. /R,F,2,in2/

I'd examine work-related materials and news, information on the Internet. /E,F,3,in3/

*To expand my knowledge in the field of art (museums, music, architecture).
/R,M,3,in3/*

3) People mention again that PIAP is not convenient:

I simply don't like PIAPs, I would sit at home or at work inside rather than outside. There's been no such necessity as to go to a PIAP and if there's been such necessity, there's been no time. /E,M,1,in3/

The types of people:

- I definitely will not try right now (the groups involved relatively few people expressing absolute refusals; a further analysis on the basis of the value beliefs study RISC will show their number in real life);
- PIAP is not convenient, otherwise I would search it;
- I do not feel different needs, I would only use some functions;
- I would do anything if I only could.

2.5 Logic and necessities of acquisition of computer and Internet skills

People with no experience in using the Internet wish to have a computer at home, in Estonian, and to receive support from a skilled person whom they know.

1) Non-users of the Internet very often mentioned inadequate language skills as a barrier:

Maybe a little, I even thought about coming to the computer courses at the library, but I don't know. I'm also afraid a little, I can't speak English. I forget and then it may happen that I screw up the computer, it crashes. /E,F,50-64,in1/

2) The above quote also reveals the already previously mentioned barriers to acquiring computer skills: people forget, the computer crashes.

3) Regarding learning, it is considered important that people had computers at home, especially to practise what is learnt and gradually examine the operations:

SHOULD THERE BE A COMPUTER AT HOME? — It'd surely be better to have it at home. — At least at first. — At first, yes. — It's good to have it because at first if you learn and you don't have it at home, you forget it. /E,F,50-64,in1/

It shows everything, where you have to go and what you have to do. Just adjustment. Peacefully and quietly. It'd probably be better to examine it yourself. If you don't find, you'll ask someone over who helps. Then you go on yourself. It'd be the best in my opinion, so that there's no time pressure. /E,N,2,in1/

4) People also simply point out fear: I do not know anything, I cannot.

In Kolga village (Estonians aged 25–49) we had a longer conversation with people about the possible features of the learning process and sources: should

the basic knowledge originate from books or from courses or people whom the learner knows? It may be summed up that the majority would prefer to start learning with a person whom they know. There is some fear related to courses, people are particularly afraid of not keeping up with others. A common approach liked by everyone however was not proposed, an overview of some preferences follows.

The elderly people (aged 50–64) having no computer and Internet experience would give up computer and Internet training.

In the course of the focus group we introduced the participants to the Look@World idea to train Estonian people to use the Internet. Generally the attitude of the participants was positive, but particularly in rural areas the idea was not uniformly accepted.

It's nothing but an idea. But why waste time on that if we can't practise ourselves, if it doesn't become fixed because there's no computer. /E,F,25–49,in1/

An example from the conversation that evolved in Sõmeru village:

- *I give up. /E,M,56–64,in1/*
- *I also give up. /E,F,56–64,in1/*
- *Why do you give up? /E,F,50–64,in1/*
- *I simply say "no". /E,M,56–64,in1/*
- *I don't have a need, don't you understand? Why ever would I need it? /E,F,56–64,in1/*
- *You'll win a computer. /E,M,50–55,in1/*
- *So what? I bought a ticket today, I'll win a million, then buy a computer. /E,F,50–64,in1/*
- *I wouldn't buy and I wouldn't go there either. /E,F,56–64,in1/*
- *I don't want a computer. /.../ Simply because I don't have a need for it. /E,F,50–64,in1/*

The later conversation also revealed some reasons that render the attendance at courses difficult for the elderly: on the one hand they are definitely not ready to travel from Sõmeru to Rakvere, on the other hand many of them are afraid of being with skilled and young people:

- *I don't think that the place is as important as that I knew who there are in the group. /E,M,50–55,in1/*
- *People. /E,F,50–64,in1/*
- *But maybe you'll get a better job afterwards? /E,N,50–64,in1/*
- *It wouldn't do for me if I had to be together with people who are 25 or so. /E,F,50–64,in1/*
- *I also told here that there were very young people and they knew it so well. /E,F,50–64,in1/*
- *And if we are somewhere privately. /E,F,50–64,in1/*
- *It doesn't bother me. /E,M,50–64,in1/*
- *Some simply have a talent for it. /E,F,50–64,in1/*
- *Well, we can't be compared to young people. /E,F,50–64,in1/*
- *He'd get bored with me, it takes time for me. /E,M,50–55,in1/*

People nevertheless think that computer and the Internet skills may become compulsory:

- *When I can't manage anything so that there must be a computer, computer, computer, then I'll have to go there, but otherwise I wouldn't go. If I really didn't cope without a computer, in no way, Then I'd have to go. /E,F,56-64,in1/*
- *Somehow you have to go there. /E,M,50-64,in1/*
- *Well, I don't know where we are by that time. /E,F,56-64,in1/*
- *How do you know? /E,M,50-64,in1/*
- *Well, I believe that you can manage without it. /E,F,56-64,in1/*

People with experience in use have several recommendations for training.

People having previous experience in using the Internet provided several recommendations what would be beneficial for learning and what would not be:

- 1) a limited number of participants;
- 2) a computer for everyone;
- 3) a teacher who teaches and explains, and who does not offer ready-made solutions;
- 4) different training for different levels;
- 5) after the courses, the participants tend to forget what they have learned; it was proposed that motivation be found for the newly trained to return and fix their knowledge. At the same time the entire idea of studying is associated with the attitude gradually ascribed to PIAPs: I do not like the people there, I do not want to go and fix my knowledge there;
- 6) the timetable 2x4 hours seemed to people who had not attended computer courses a little too long. Yet the people having attended courses affirmed that four hours would pass quickly;
- 7) on what days should the training be arranged? In what season?

2.5.1 Public Internet access point

If a person does not have a computer and access to the Internet at home, PIAP should be an agreeable solution and opportunity; however using PIAPs is unacceptable for many people.

1) The experience of non-users related to PIAP and awareness:

- the majority has not used;
- people know through children that it exists and where;
- people have visited PIAP with their children;
- in the countryside people know the opportunities relatively well.

2) People cannot very well point out the barriers to using the Internet:

If at home, you need a good computer. But nobody would let me into the library at night. /.../ A computer must be at home or you have to go somewhere. It's inconvenient. /R,M,25-39, in1/

I only get home at half past four and then I eat and then it's practically late to come to the Internet here, I simply can't. /E,F,50-64,in1/

It's already that from here to Vaeküla I go to work by bus, I don't know exactly if I get home by that time on that day. Sometimes I don't, it takes longer. And some people have reserved a computer already a week in advance. This creates some restrictions. But if I must, I'll go to my daughter in town. /E,F,50-64,in1/

3) At a public Internet access point, non-users of the Internet would engage in the following activities:

- search for information: look at news pages, read magazines, more voluminous information;
- activities related to leisure: travelling information, theatre tickets and repertoires;
- entertainment: games, latest music, card games, horoscopes;
- commerce: order something;
- communication;
- bank transfers;
- computer training.

The opinion of users of the Internet about PIAP:

- 1)** people do not know if PIAPs charge a fee, generally knowledge is limited:

For example I didn't know that here are such places that I go and do what I want. There's been little information about that /E,F,40-49, in3/

- 2)** distance from home is important;
- 3)** many people are in a queue, many of them are skilled, a person that lacks skills does not have the courage to try;
- 4)** opening hours are not convenient. Previous reservation is not convenient;
- 5)** too few PIAPs;
- 6)** the people visiting PIAPs are not suitable.

People with prior Internet experience would engage in the following activities in PIAPs:

- read newspapers and magazines;
- collect information about health;
- search for information related to leisure and hobbies: retrieve a TV guide, examine bee-keeping issues, expand knowledge of art (museums, music, architecture), language studies, literature, geography — tourism, history, stock exchange, fashion world;
- examine laws, the legal aspect;
- pay taxes, payments and transfers;
- write messages to friends, search for relationships;
- play games, entertainment;
- study and learn the computer more generally;
- find potential clients;
- acquire work-related knowledge and news, retrieve study materials.

A participant in the group who had had daily access to the Internet at work before her child care leave provided a longer list of activities. Only this list includes "examine opening hours, addresses".

A list of the activities to be undertaken in a public Internet access point is longer in people having previous Internet experience than in people who have never used the Internet. At the same time, we see that the list is even more varied if a person has or has had an opportunity to use the Internet daily at work. If a person accesses the Internet once a month, the person's knowledge of the opportunities offered by the Internet is limited, therefore the person's wishes are also relatively modest.

2.6 Opportunities to use Internet for various services

2.6.1 Communication

Currently the cell phone is perceived to be the main means of communication, this applies both to light users and non-users of the Internet.

Other manners of communication that were mentioned included the fixed telephone, sending of messages, writing letters, personal appearance and sending faxes. The Internet was spontaneously mentioned only in Jöhvi, where the group included several people who had had relatively frequent contacts with the Internet.

This section will examine the advantages and disadvantages ascribed to different means of communication: the fixed phone, cell phone, SMS, writing of letters and personal visits, the Internet. The features of cell phones have deserved the most attention as the cell phone was discussed as a means of communication the most; thus the cell phone is also the most important rival to the Internet.

The following table presents the advantages and disadvantages of the fixed phone, cell phone and SMS in communication as pointed out and written on the boards in all the groups.

Fixed phone		Cell phone		SMS
Advantages	Disadvantages	Advantages	Disadvantages	Advantages
<ul style="list-style-type: none"> • Good communication • Cheaper than cell phone • "Immediate" • Habit • Convenient • Handy • "Live relationship" • Allows to express fresh ideas 	<ul style="list-style-type: none"> • Quality • Expensive monthly fee • Not always accessible • During power cut phone does not work • Older person forgets what was told 	<ul style="list-style-type: none"> • Person is accessible • Simpler than Internet • Necessary when travelling • Always with person • Teaches to cut talk short 	<ul style="list-style-type: none"> • Coverage • Call price • Affects health • No privacy (rings in car) • Easy to lose • Radiation • Batteries run low • Drivers do not watch road 	<ul style="list-style-type: none"> • Travels to addressee itself • Immediately received • Accompanies phone • Simple
				Disadvantages of SMS <ul style="list-style-type: none"> • Small letters • Complicated

The fixed phone has both positive and negative communication aspects.

People find the fixed phone to have many positive characteristics: in settlements where telephone connection is good, people praise connection quality, whereas in Sõmeru bad connection was blamed. A lower cost of call minute when compared

to the cell phone is an important argument. Habit was also emphasised several times. The reason for preferences may however be the habit itself, not the actual advantages.

In the longer run one of the advantages of the fixed phone may be the price and the live communication over the phone.

The same respondent also points out an argument in favour of the Internet.

The negative characteristics of the fixed phone for non-users of the Internet include above all a high basic fee and the fact that a person is not always accessible.

The cell phone is regarded to have the most advantages for communication. The cell phone has very many advantages when compared to both the Internet and all the other means. The advantages may generally be divided into four larger groups: A. the advantages arising from the special features of the cell phone, B. social aspects, C. personality aspects, D. aspects caused by the current situation on the Estonian communications market. Each aspect will be examined in detail below.

A. *The advantages arising from the special features of the cell phone — a person is always and immediately reachable, it is easy to carry a cell phone.*

- 1) I am always reachable, I can always call when necessary;
- 2) a person can be reached over the cell phone faster than over the Internet where a contact may be established only in a couple of hours;
- 3) it is easier and more convenient to carry a cell phone than a computer:

The phone gives notice, it signals or rings when the message arrives. If you compare to the computer, then ... some people do carry portable computers with themselves, but they do not start them in a shop and take a look whether their wife sent something there or not. They use it some other time. /E,F,25-39,in4/

B. *Social aspects*

- 4) Because others have, everyone has to have it. For example the children living away from home only have a cell phone.

However it is pointed out in relation with children that the fixed phone allows to have a longer conversation.

C. *Personality aspects*

- 5) People rather do not fear the cell phone, whereas the computer is feared;

- 6)** If a person should start to learn to use either the cell phone or the Internet, the person would prefer the cell phone as it is easier, it is in Estonian and the person may gradually learn to use it on his or her own:

- It's smaller, that's why. /E,F,25-39,in1/

- Cell phones are also in Estonian./E,M,25-39,in3/

- You use it more and the more you use it, the better yours skills get. You can maybe go on the Internet once a month and the next day you forget it. /E,F,40-49,in2/

An additional comment: although the cell phone is considered simpler than the Internet, using the cell phone is not simple for everyone. An extract from the conversation in Sõmeru:

- If you get used to it, then it [using a cell phone] is simple. /E,F,50-64,in1/

- Simpler than the Internet. /E,F,50-64,in1/

- There was much to learn at the beginning. /E,F,50-64,in1/

- It took me half a year before I got used to it more or less. /E,M,3-4,in1/

- I don't know how to send a message, and I don't send them. I better call instead of looking for the message. /E,F,50-64,in1/

- I learned how to do it. /E,F,50-64,in1/

- You can't call everywhere. You can't call home from the Väraska sanatorium, you send a message. It would have paid to call the sanatorium. /E,F,50-64,in1/

- If my grandchildren teach me, I can learn it. They know how to do it. /E,F,50-64,in1/

- The simplest function is when someone calls. But something else, to alter time or tunes, I don't need that. /E,F,25-49,in1/

The interviews revealed that people mostly use the main functions of the cell phone, using SMS requires more skills, particularly in the older age group (see below).

- 7)** Compared to the Internet, an immediate contact with people is preferred.

D. Aspects caused by the current situation on the Estonian telecommunications market

- 8)** Financial reasons also play their role, both when compared to the fixed phone and the Internet:

It's a little cheaper for me. If I have money, I buy a Simpel and I can call. They switched off the phone, I simply didn't pay. So it was. /E,M,40-49,in1/

- 9)** The connection quality is better than the fixed phone quality. The people living in Sõmeru none of whom regularly accessed the Internet all agreed that the cell phone was better than the fixed phone as the fixed phone connection was of very bad quality in Sõmeru.

The reasons for buying a cell phone have been:

- 1)** the Estonian Telephone Company cut off a subscriber as the subscriber failed to pay the invoices;
- 2)** the fees charged by the Estonian Telephone Company were too high when communicating with a person living abroad who had an Estonian cell phone, now replaced by a SMS-relationship.

The disadvantages of the cell phone include occasionally bad coverage, high cost and several communication-related aspects.

As people know the cell phone rather well, they can also point out its disadvantages:

- 1)** occasionally bad coverage;
- 2)** a contact cannot always be established immediately, the Internet is even better as you can send a note;
- 3)** a cell phone may be switched off, although the other participants immediately remind that a message can be sent;
- 4)** it is easy to lose;
- 5)** health-related issues.

The cell phone has one more advantage for people — it allows to send messages.

- 1)** The advantage of the message is above all to give notice of oneself, people also believe the SMS to be cheaper;
- 2)** one of the definite disadvantages of the SMS is the small size of letters and for an elderly person sending a message is a somewhat complicated operation;
- 3)** elderly people have already developed negative attitudes to the SMS:

Sometimes I watch Kanal 2 the SMSs that they send there, some are so misspelled that I don't understand a thing. /E,N,50-64,in1/

In relation to communication people mentioned both visits and writing of letters. Both have their advantages and disadvantages.

Money is an important concern related to personal visits, the major advantage is actual communication with people.

It needs effort to write a letter and the respondent may not reply, the advantage is that people can arrange their thoughts and letters bring more joy for the elderly (they can read a letter several times compared to a single phone call).

The Internet is found to have several advantages for communication. Earlier non-users of the Internet also pointed out several advantages.

A. Functional characteristics

1) It is more convenient:

It's actually very convenient if a person has a computer and he can reply to you right away. In business. Or you know that the person will reply right away. Why not. If you can type fast. Many of my friends do so. /R,M,25-39, in1/

2) With large volumes of information the Internet is considered as more convenient:

I think that they are longer. You can only send messages from there, these short messages, not longer ones. On the Internet they also draw pictures /E,F,50-64,in1/

3) It is possible to leave a message for the addressee.

4) Faster, more operational.

5) Special opportunities related to the Internet:

E-mail, cards. You can't send them over the phone. /E,F,25-39,in4/

My cousin was in India and called his mother through the computer, to a fixed phone number. I don't understand how you can do that. /R,F,25-39,in4/

B. Social aspects

6) It is becoming a social norm:

Nowadays if you go somewhere they ask for your e-mail. I think sometimes that I can't keep up with life. /R,F,40-49,in1/

7) Handicapped people would be very happy:

I would write a letter. It's interesting for me to exchange experience. Especially with those who are ill at home, lie down. /R,M,25-39,in1/

C. Psychological aspects

8) Some people like to read, some like to listen, some like to act themselves.

The Internet naturally also has disadvantages.

- 1) A definite disadvantage of the Internet is that people consider it necessary to have it at home whereas many do not have. Going somewhere is a complicated business. People often cannot think about going anywhere:

[A reply to the question why the respondents do not use the Internet] I don't have it. The house was completed recently and other things are more important. Money goes to other things right now. If there's spare money and we can buy, we will. /E,F,40-49,in1/

If you have a computer. But if you don't, how can you do it? If you have it at home. /R,M,25-55,in1/

- *[The moderator mentioned an opportunity to visit an Internet access point also in Jõhvi:]*
- *Then you have to write at home. It takes much time.*
- *It's easier to send an ordinary letter. And you must type.*
- *It's inconvenient. For example I can't type in Russian. I use Latin alphabet and later it's inconvenient to read.*
- *If at home then it's comfortable. /A conversation that evolved in Jõhvi/*

- 2) Another disadvantage is the lack of an actual contact mentioned already before.
- 3) Money: on the one hand the money for buying a computer, on the other hand people do not know how much is charged for the Internet connection:

I communicate anyway. I don't have such a need. They come to use, we exchange experience. If it were cheaper, I'd try to use it. I'd write a letter. But I'm conservative. Before you start to correspond you have to know the person. I need to see him. To feel some intellectual connection. Otherwise you simply write to who knows whom. It's like pointing with your finger at the sky. It's a waste of time. I don't particularly like it. /R,F,25-55,in1/

- 4) Will the person read the letter?

If he has an Internet address, he may go and see it only after a week. He doesn't have the address at home, he uses it somewhere else. /E,F,40-49,in2/

- 5) Communication circle also has its role. It was mentioned in several groups that it was pointless to send messages over the Internet if the other parties did not use the Internet.

2.6.2 Searching for information

We inquired the respondents about the sources from which they obtained different kinds of information: news, information related to agencies, hobbies, etc. The respondents mentioned the radio, television, friends, neighbours, peers at work, books, newspapers, telephone and SMS. Non-users of the Internet did not spontaneously point out the Internet.

We asked people to compare searching for information on the Internet to other opportunities.

People who have no prior Internet experience obtain the information related to management of affairs mostly over the phone.

When speaking about searching for necessary information people having no previous Internet experience pointed out very many arguments in favour of the telephone:

- 1) simpler;
- 2) habits.

The advantages of the Internet in searching for information related to management of affairs are more favourable opportunities and more recent information when compared to books according to non-users of the Internet.

- 1) Provides good information about more favourable opportunities:

My friend buys holiday trips over the Internet at affordable prices. /R,F,2,in1/

- 2) Information is updated when compared to books:

On the Internet you can find more precise news than from a book. As long as the book is printed the information may become outdated already. /E,M,2,in1/

At work when we repair foreign cars then it's often so that there is one make and another make and these differ completely. Once you've learned about the first and the second there comes the third and ... We don't have information about that. /E,M,2,in1/

The disadvantages of the Internet in searching for information related to management of affairs include above all the fear that the information offered is insufficient as ultimately success depends on officials.

- 1) There is no necessary information available:

Yes. I have searched for information about cars on the Internet several times. But there are only associations. The other people also have the same books. /R,M,25-39,in1/

- 2) Success ultimately depends on officials, i.e. the Internet cannot be of help:

Sometimes there [on the Internet] is old information. And everything depends on officials. They may tell you otherwise. /R,F,2,in1/

- 3) The Internet need not provide the necessary information, the desired information is obtained over the phone:

I look from the telephone directory. Communication is better over the phone. You get an immediate contact and you can say everything you want. The Internet is limited. I can't ask for more information myself. /E,F,25-49,in1/

4) No feedback about whether completion was a success:

The same way I go and take the questionnaire. I fill it in at home and then I go there once again. Here [on the Internet] there is nobody to help me. If I could fill it in here and then send right away for checking. /R,M,25-39,in1/

5) No computer and Internet connection available:

Right now it is simpler [to go to the bank] because I don't have it at home. That's why I have to go. /R,M,25-55,in1/

6) The language concern. It was manifested very strongly in relation with the elderly Estonians who mentioned that all the interesting and important information was in English. Information is also expressed in a foreign language for non-Estonians living in Estonia, which serves as an important barrier also for them.

7) Attitudes are developing:

I have found reports on the Internet. I tried to read them. They all seemed so ordinary, written in uncomplicated language. I better go to the library, select books and read them. And this is more comprehensible for me. /R,F,25-55,in2-4/

As regards information related to news and hobbies non-users of the Internet strongly prefer the radio, television, newspapers, advertisements and people whom they know.

1) The radio as a daily companion;

2) peers at work and neighbours, mainly pointed out by women;

3) the television as the major provider of information and news:

I have cable TV. And this shows so much news that you can watch all night long. /E,F,50-64,in1/

In the case of satellite and cable television people did not consider the foreign language to be a barrier.

People believe that they can obtain information more quickly from the television although people also had different opinions. An extract from the conversation that evolved in Sõmeru:

*- Men are more crazy about news, we aren't like that.
- Perhaps from the television you sort of get it more quickly so that you have to surf there.*

- *If you know how to do it, you'll find it fast.*
- *You still get it faster from the television.*
- *I also think so.*
- *Yes. And if it's that important piece of news, it becomes known so fast and soon.*
- *But it's not on all the time. The same way you have to search on the Internet.*
- *But it is soon already. In the morning and.*
- *You can watch the news directly and.*

It may be concluded on the basis of the section provided above that searching on the Internet serves as a barrier in relation to news, whereas the television provides everything at the desired time.

For people having Internet experience the advantages of the Internet in obtaining information include speed, a larger volume and price:

- 1) information can be found more simply;
- 2) the Internet is better in relation to voluminous information:

If you skim some bulky reference book it's of course clear that you may prefer a computer over going to the library. But for a phone number you simply call and ask it. /E,F,25-39,in4/

- 3) it is cheaper to read the advertisements in Kuldne Börs and Soov on the Internet:

If you place an ad, for example in Börs or Soov, you can't subscribe for all these papers. You open the paper on the Internet and read, no problem. /E,M,25-39,in2/

- 4) it is better to follow legislation on the Internet;
- 5) there is much special information available (e.g. hair stylists);
- 6) opportunities are the fastest in purchase and sales transactions.

The disadvantages of the Internet in obtaining information for people with little experience include inaccuracy of information, too large volumes of information and lack of skills.

- 1) Information becomes outdated or is otherwise inaccurate, also what regards bank loans and other documents:

At work I'd probably take that from a computer. But there are many things about what information is not correct on the computer. In this respect you can do it faster and more correctly over the phone. /E,F,25-39,in4/

- 2) There is too much information so that it is hard to find the required piece of information:

Sometimes there is so much information about one thing that it's again hard to find the right information that you need about that. /E,M,25-39,in2/

- 3) People do not believe that the information on the Internet is more special than the information obtained from other channels.

There are also very clear barriers related to the Internet, why the Internet cannot be used in searching for information.

- 4) No computer and the Internet connection.
- 5) Lack of skills, this is particularly pointed out by people who have had previous access to the Internet:

If I have the skills. If it's permanent, I definitely have the skills. /E,F,2,in2/

It's for them who can do this. /R,F,2,in4/

- 6) Language concerns, especially among the Russian-speaking population of Estonia.

Certain attitudes may have been detected that disparaged the use of the Internet:

If you have Internet access, you won't go anywhere. You can simply go over to the Tax Board and ask. Those who like more to communicate with people go and ask. But those who like to sit at the TV or computer... /R,F,25-39,in4/

The attitude that communication with people is more agreeable than sitting at the TV set or computer at home may also be explained in terms of failed attempts related to the Internet:

We found all the papers that were required on the Internet. And when we went to the bank then it appeared that we had done it all wrong or something was missing. It'd be simpler to come and find out at first. Then the documents would be in order. /R,F,25-39,in4/

At the same time the phone also has advantages and disadvantages for people having previous Internet experience.

Users of the Internet did not point out the particular advantages of the telephone, the main feature was the belief that the information obtained over the telephone was more adequate, although opposite opinions were also expressed.

2.6.3 Management of affairs

In order to identify the public sector services for the provision of which over the Internet the demand is the greatest, we inquired the participants at the beginning of the interviews about their regular contacts with the public sector. The five groups together provided a long list of fields and agencies (see the list at the end of this section). The interviews however revealed a surprising fact — the residents of Estonia do not distinguish between the process related to the service and the particular person offering the service.

The reason behind such a phenomenon may be simple: people are used to thinking on the personal level, not on a wider, institutional or societal level. This also means that the opinion on an agency is developed on the basis of the attitude and competence of the particular official.

As people largely related their relationships to particular persons, it was very hard to reach the issues related to the process of the public sector services.

Another surprising fact about the public sector was that people could not point out problematic areas. Several participants claimed to have always managed without facing any problems. Yet the overall attitude was strongly negative. The reasons behind this controversy are considerably deeper, deserving examination as a separate task.

- 1) People have infrequent contacts with the public sector services and it was difficult to point out problematic areas:

I haven't needed anything that much. And I have managed. /E,F,2,in1/

Not much. The Tax Board once a year. You can manage most of the things by phone at the bank. /E,M,25-39,in3/

But other things, after the land plots have been formalised, there's no point. Then I had to run when the land and other issues were on the air. Now there's nothing. /E,F,50-64,in1/

We may read from above that the more complicated matters have been settled and the remaining operations are not a burden but an inevitable part of life:

[Does the payment of the land tax seem difficult?] Not at all, God. /E,F,50-64,in1/ What's that, it has to be like that. /E,F,50-64,in1/

- 2) Although people could not point out the problems, the overall attitude was strongly negative:

The attitude in the agencies is in fact very bad. /E,F,50-64,in1/

Below we will examine various agencies and institutions offering the public sector services inasmuch as people spoke about these issues. The agencies and institutions offering the services have been presented in an alphabetical order.

Health care

People associate health care with bad attitude and problems:

It's a disaster. /E,M,40-49,in2/

- 1) The issues related to booking an appointment. Booking of an appointment with the registrar was considered problematic in Tallinn, whereas in other settlements an appointment could be booked over the phone:

Long queues. /.../ Already booking an appointment is difficult. /E,M,25-39,in3/

It'd be the best over the phone. You don't want to catch a cold outside when already ill. /E,F,40-49,in1/

2) Price:

The polyclinic opens at 7.30. You have to stand in a queue from seven to book an appointment with a dentist. That means free of charge. But appointments for a charge are always available. And even the offices and corridors are also empty. You can't make an appointment with the registrar, there are only appointments for a charge. /R,F,25-49,in2-4/

3) Issues related to the working time of the doctor:

If I can book an appointment, I may have to wait for an hour behind the door. /E,F,25-39,in4/

Violations of time schedules and too abrupt ends:

- I got a reference, I waited for a month and it was pointless. I was ten minutes late, something happened to the bus and when I got there, he said in his office that I was ten minutes late and no more patients would be consulted. /.../ Yes, but it wasn't my fault. I had to wait another one and a half months. It's that the end of consultation was so abrupt. /E,M,25-39,in2/

5) The issues related to specialists: the family doctor must refer a patient to the specialist.

6) The general organisation.

7) There is no medical help available on the spot in the countryside:

- When we are ill we need a doctor. There'll be no immediate help. Booking an appointment, taking a day off from work./E,F,25-39,in1/

Pharmacy

In Sõmeru going to a pharmacy presents more problems than health care:

We have to fetch medications from Rakvere. We had a pharmacy here before. But it's no longer here. /.../ Yes, you also have to pay for the trip and you have to spend a day on it. /E,M,50-64,in1/

City, city district, rural municipality and county governments

Different administrative councils are mentioned often, but there are not very many comments. People have both positive and negative feelings related to these agencies.

Court, labour dispute courts

People use their services rarely although the issues surfaced in almost all the groups.

Tax Board

The Tax Board was mentioned frequently, the submission of income tax returns is perceived as a procedure to be undertaken once a year, which simply has to be completed. The procedure is rather complicated for non-users of the Internet or people having little experience. Anyhow they need expert advice. Many people do not have a contact with the Tax Board or no longer have it.

Bank

Although banks are not the public sector, through the banks Estonian people communicate with society and therefore the issues related to banks deserve separate attention.

The bank is currently the most important institution where official procedures are carried out. Thus the bank services were one of the three most important services in all the groups.

1) Pleasant:

I have been to the bank. To make transfers. I'm satisfied with that. I have got everything I needed. /E,F,2,in1/

The bank was mentioned in all the groups and all the groups also discussed the unpleasant events related to the banks;

2) people have to pay money: taxes, payment of fines;

3) problems occur in relation to direct payment orders, as "you always have to have the correct amount in your account". If it is not there, this means troublesome procedures for all the parties;

4) communication problems associated with the person providing the service similarly to the public sector services:

When speaking about procedures at the bank, I have had several experiences that when you try to find out what is required, they say this-and-this-and this. But when you go there, they say that you need to bring other things. The information is not always correct. /E,M,2,in2/

5) it is unpleasant to be in a bank office:

It's so in many places that at lunch time when you can run your errands, the queue is so long and you simply leave. Sometimes the room is so hot too. You go some other day when it's more peaceful there. But in the evening when you go home you don't bother to go there. /E,M,25-39,in2/

6) transfer fees are high:

I have one bank and my boy in Tartu has another bank. I wanted to transfer into his account. But from one bank to another is ... I'd take a new card, but he needs 35 kroons to open an account. Then I thought of a standing payment order, the child maybe cannot use money properly. I'd transfer to him an amount every day, then it turned out that they took three kroons for each day. Multiply this by 30

days, then you pay several thousand kroons a year. They collect large amounts of money from that thing. You also have to pay something for paying money into someone else's account. /E,F,2,in3/

7) ATM swallows a card:

I always have problems with the bank. The ATM constantly swallows my card. I have to pay 30 kroons each time. /R,F,25-39,in1/

8) people do not know how much money they have in their accounts:

- You also have to pay a part in the bank. And those who receive their money into their accounts. In the shop you can also buy by an invoice and also for cash. Before everything happened through the bank. If you don't know exactly if you have money on the card or not. /E,M,40-49,in1/

Post office

Many groups mention the post office. People in Sõmeru also pointed out the objectives of going to the post office:

- We do have a post office where you get your pension and pay for power supply. /E,F,50-64,in1/*
- And to post letters and buy stamps and envelopes. No, the post office is very important. /E,F,50-64,in1/*
- Subscription for newspapers. /E,F,50-64,in1/*
- Sometimes buying [of newspapers] too. /E,F,50-64,in1/*
- Cards and envelopes and other such things. /E,F,50-64,in1/*
- Posting too. /E,F,50-64,in1/*
- The Anttila packages go there and all kinds of Hobby Halls and. /E,F,50-64,in1/*

The author's comment:

The post office is everything for country people. This is particularly true for pensioners and elderly working people. This institution could be the place for disseminating positive attitudes to the Internet for the elderly population. The same functions are performed by the post office as offered by the Internet: communication, management of affairs, searching for information.

Social issues

The entire social field is very often associated with a particular person:

These [required documents] change often. Once you need an original, then you need a copy. But if a new official comes, she starts all over again with her requirements. /E,F,2,in2/

You can't always reach them over the phone either, they aren't there. It starts with wrong numbers being advertised. And now I'm that much wiser as to always ask for the person's first and surname who gives that information. So you can specify later that this lady or sir said so. They don't know exactly themselves. And then they don't know whether they should answer the phone or not, whether it's her job to write the paper and that creates the big confusion. /E,F,25-39,in4/

Nursery school.

It is difficult to select a nursery school for a child when no information is available.

People mention schools, but not any problems related to schools.

The general organisational problems related to many agencies:

1) parking:

If I generally speak about these agencies, there's no good parking lot anywhere. Everywhere it's either few places or they are for a charge? /R,M,3,in3/

2) opening hours:

[When going to Tallinn] I have to ask for a day off and at the same time they also need me at work. There's always a conflict why you should go today, why can't you go tomorrow. /E,M,2,in1/

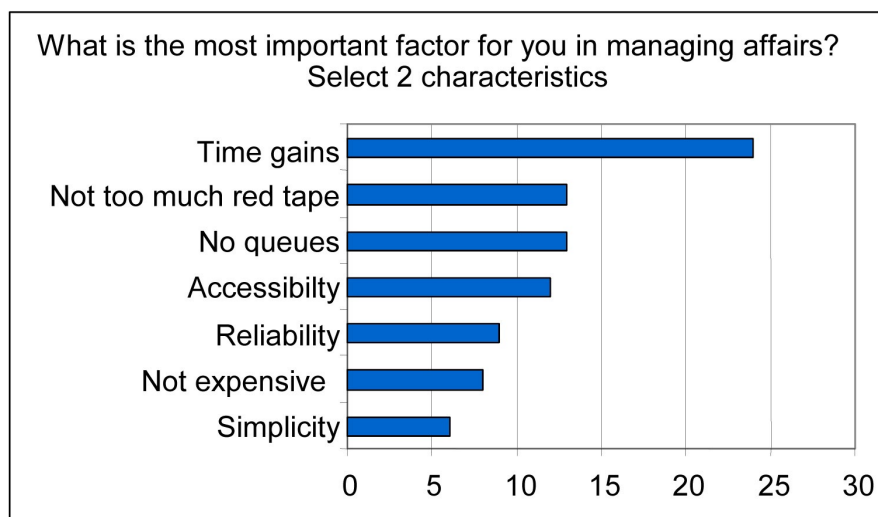
The author's comment:

the Internet can definitely help with general problems such as the opening hours of the agencies and parking difficulties. But the first step is to make people believe that updated and suitable information can be obtained on the Internet and feedback is possible.

A list of the agencies/institutions mentioned in relation to the public sector services:

bank	notary
courts	nursery school
culture centre	Occupational Health and Safety Board
doctor	payments
health insurance fund	pharmacy
Health Supervisory Authority	post office
insurance	public utilities
labour dispute court	Road Administration
labour market	rural municipality/city district
Land Board	government /city government /county
land registry	government
legal aid	school
library	shop
Migration Board	social affairs agency
motor vehicle register	Tax Board

Figure 1. Time gains are the most important factor in managing affairs for respondents



We asked the participants in the groups to complete a short questionnaire during the interview to identify the most important factor for them in managing affairs. The results reveal that for 24 of the 45 participants (40 participants completed the questionnaire correctly) time gains appeared to be the most important factor. We may conclude that people have to see an opportunity to save time when managing their affairs over the Internet.

2.6.4 Internet opportunities to simplify management of affairs

It is most remarkable regarding various public sector services that the participants did not mention different procedures related to management of affairs when discussing the opportunities provided by the Internet — searching for information about opening hours, printing of forms, etc. This may mean on the one hand that people are unaware of the opportunities, on the other hand that submission of papers to agencies is such a natural part of life that it deserves no separate mention, and that people rarely come into contact with the public sector services and thus the public sector services accompany the Internet rather than embody the nature of the Internet.

When managing affairs, people go to the institution, hire someone to do it for themselves or use postal services or the phone:

- 1) personal appearance. People believe that personal appearance is inevitable;
- 2) a hired person;

3) some procedures can be settled by post:

By post. I need this paper but I can't come. And they send it. But they can also say come here and that's it. /E,M,2,in1/

4) the spouse "runs these errands".

The only opportunity to manage affairs interactively known to people is Internet banking. People with no previous experience in using the Internet know that the Internet bank is cheaper, but they do not use it mainly because of no need or no access to computer and insufficient skills.

People who do not have any previous Internet experience have a rather clear vision that the Internet bank is cheaper.

People themselves do not use the Internet bank. The possible reasons include no access to computer and lack of skills (the will exists) or lack of need — people do not have money in the bank or they can manage their affairs in the established manner.

Barriers:

1) lack of skills;**2) skills cannot be acquired if people do not have a personal computer and access to the Internet:**

I have the Internet bank card. My brother once showed me, I did follow, but I won't go and do that on my own. Someone has to be with me. /.../ The arrows pointed here and there. /E,F,40-49,in1/

3) no money in the bank:

My minimum money is transferred into my account and I don't have the need. I pay for my life insurance by a direct payment order. I have no more dealings with the bank. /E,M,40-49,in1/

4) there is no need, the bank is close by, everything can be arranged with an ATM:

I pay everything in cash. No banks. /E,M,4,in1/

I pay through the ATM. I have all the services saved there. And I get a receipt about the payment right away. /R,M,25-55,in2-4/

5) negative attitudes:

I have a relative, he has a degree in agricultural sciences, he has many computers there. And he says that this is an extremely lazy person who doesn't bother to manage his financial affairs himself, who has to use a machine for that. He pays all his taxes on the spot. /E,M,56-64,in1/

People who have had previous contacts with the Internet are better aware of the opportunities, the advantages of the Internet bank are convenience and low cost:

- 1) more convenient than a direct payment order as direct payment orders have their own problems;
- 2) cheaper than other transfers and operations related to the account, for example a bank statement:

Yes, I can do these things at night. /E,F,25-39,in4/

There you can look at the statements as much as you want. If you take from an ATM, you get ten last transactions. On the Internet you can see several months. If you go to the bank you pay some 20 kroons for it or so. /E,M,25-39,in3/

- 3) there are people who fear that by managing their affairs over the Internet the information about them becomes public, while others find that "we who get minimum wages in Estonia have nothing to fear":

I wouldn't use. Why show my numbers. Afterwards someone steals. /.../ Each time they tell on the news about robberies here and there. /R,F,25-55,in2-4/

But I haven't thought about that. I think that I have nothing to hide. My salary is not high. /R,F,25-55,in2-4/

- [Do you dare to keep your data on the Internet?]

- What can happen to people like us./E,F,50-64,in1/

- As much as I've watched TV, they have this computer programme and they show how they go into these computers and. That everyone can go.

- To the accounts and.

- To the data and.

[About yourself] – No, I don't have fears about myself.

- Let's say that such small fish as we are of interest for few people, it must be a valuable site that is accessed. /The conversation that evolved in Sõmeru village/

Users of the Internet are aware of specific inadequacies and threats:

- 1) no access to computers is an apparent barrier;
- 2) people do not remember how to use it:

The first time I had a problem. I didn't know how to do that. They showed me. But I forgot. They showed me once again. Now I sometimes pay my invoices on the Internet. But it's not always a success. /R,F,25-55,in2-4/

- 3) a fear generated by insufficient skills that the money "keeps running" or the person makes a wrong move and loses his or her money;
- 4) people do not want to prevent the activities of others by their poor performance.

