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Personalisation in E-Government Portals. The Case of the Estonian State Portal eesti.ee

Master Thesis (20 EAP)

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Author's Declaration

I declare that, apart from work whose authors are clearly acknowledged, this document is the result of my own and original work.

This work has not and is not being submitted for any other comparable academic degree.

PhD Tarmo Robal has supervised the thesis.

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Abstract

This thesis analyses the possibilities and limitations of creating personalised citizen portals that would consider user's behaviour and needs as well as the decision makers' goals and legal limitations. In particular, the thesis focuses on the case of personalising the Estonian State Portal eesti.ee. The purpose of the thesis is to provide an overview of personalised web concept in theory, understand the best practices of personalising e-government portals and to research how web personalisation has been implemented and developed for the Estonian State Portal eesti.ee. The thesis is inspired by the fact that today profit-making websites try to understand their users' behaviour and needs in order to provide them with the information or product they would need or want. That understanding of users behaviour is needed to have a better sales of products, provide users a website with good usability and that they would have a great user experience.

Still, this approach is not that common for the public sector. When it comes to public e-services, the main effort is used to provide more services online in order to reduce paper forms rather than providing users with information and services they would need timely. This thesis is an attempt to change this view by providing an overview of the domain, researching specifically the area of web personalisation for the public and governmental portals. The results indicate that personalisation is considered an important part of developing e-government portals, although there are different approaches to achieve it. Personalisation is seen beneficial both for users and owners of the e-government portals, the obstacles of personalising e-government portal has been seen in legal issues, but as well in changing the overall understanding of doing actions online. Studies have shown that users of personalised portal are rather satisfied with it, but the development should be continuous and improvements done based on user feedback.

Length of this thesis is 84 pages, 119 pages with appendices. The thesis contains of 23 figures, 2 tables and 4 appendices.

Keywords: Personalised web, e-government portal, user satisfaction, personalisation

Table of Contents

List of Figures and Tables

Introduction

Today the Internet has become an important tool for everyday life. It is used for finding and storing information instead of memorising it, doing business, entertaining and spending time, communicating and many other online possibilities are growing fast. Even many services provided by government offices and local governments can be used online.

Communication between governments and citizens has moved from a paper-based world to online e-government portals, which besides information provide also governmental services. With this shift there is an overload of information. For instance the Estonian State Portal eesti.ee provides more than 200 public sector e-services, more than 400 information articles and contact information of more than 2500 governmental and local agencies and institutions in three languages (Riigiportaal eesti.ee, 2013).

The growth of available information amount has led to finding ways to understand the users' needs and behaviour. Search engines work on the basis of presenting most popular search results. Online business puts an effort to effectively determine a particular customer needs and preferences (Ntwanga, Calitz, & Barnard, 2008) in order for higher customer satisfaction and sales. Many companies, for example Google[1] and Facebook[2] have invested billions of euros in the implementation of personalised tools for their e-commerce platforms (Velasquez & Palade, 2008).

Compared to e-commerce sites, e-government portals are not aiming to get profit and that is one of the reasons why most of the e-government portals do not adapt with user needs and do not present only information and e-services what user wants or is most interested in. Therefore the research problem is that e-government portals have not used common personalisation yet, however for efficient provision of e-services and for raising user satisfaction, it is needed to understand how to personalise e-government portals. The success of e-government portals can be measured against

[1] https://www.google.com
[2] https://www.facebook.com

user satisfaction, evaluated for user-centric approaches, but also personalisation could be evaluated.

The purpose of this thesis is to research and analyse the possibilities and limitations of creating a personalised e-government portal that would consider its users behaviour and needs, the decision makers' goals and legal limitations. In particular, the thesis will focus on the case of personalising the Estonian State Portal eesti.ee.

The main goals of the thesis are to provide:

- A theoretical overview of a personalised web concept and practices of personalised e-government portals applied in Europe.
- An overview of obstacles and benefits when developing a personalised e-government portal.
- An overview of the personalised Estonian State Portal eesti.ee and to analyse and evaluate it.
- An overview of the future possibilities of developing personalised Estonian State Portal eesti.ee.

Main research questions of the thesis are as follows:

- What are the best practices for personalised e-government portals?
- What should be considered when developing personalised e-government portals?
- What could be the future for the personalised Estonian State Portal eesti.ee?

Since this thesis aims to research the case of personalising the Estonian State Portal eesti.ee, expert interviews, which have enabled an in-depth analysis of the topic as well as a web-based survey to measure user satisfaction with Estonian e-government portal personalisation, have been conducted.

The first chapter of the thesis provides background information about the concept of personalised web and different possibilities to establish it, coupled with an overview of e-government portals. It also draws attention on legal and privacy issues that could come along with web personalisation in public sector.

The second chapter gives and overview of best practices that e-government portals worldwide have used for meeting users' expectations and needs.

The third chapter describes the research carried out in this study, analyses the survey and interviews with leading experts and presents the outcomes of the research answering the research questions. It also describes suggestions that could be considered for developing the personalisation of the Estonian State Portal eesti.ee further.

Finally, there are conclusions, which describe the main points of the research with suggestions and recommendations. The appendices contain interview and survey questions, transcriptions of interviews and results of the survey.

In this thesis the used reference format is the American Psychological Association (APA) 6th edition citation style.

1. Web Personalisation

This chapter presents different theories and understandings about web personalisation and discusses related works in the field connected to this thesis. The chapter also defines the terms “e-government”, “e-government portal”, their development, and what the main approaches of e-government portals are. In addition the approaches to personalised e-government portals and obstacles that governments and users face when engaging in personalisation are described. Finally, an in-depth overview of privacy and legal issues of personalised e-government portal provision is also presented.

1.1 Techniques Applied for Delivering Personalised Web

The understanding of World Wide Web has changed over the times. In the beginning it was a set of hyperlinks, it has grown to be an environment that has to meet several requirements by users and developers. Well known is the web usability term that refers to the extent to which a product can be used by specified users to achieve specified goals with effectiveness, efficiency and satisfaction in a specified context of use (ISO 9241 Ergonomic requirements for office work with visual display terminals, 2008). Experiences and feelings during and after use of a product or an environment can influence a person’s perceptions and responses as result of user experience (ISO FDIS 9241-210 Human-centered design for interactive systems, 2009).

Those two principles are the foundation of web development fulfilling websites goals, either is the result a better sale or a more positive corporative image. To enhance the usability and user experience, publications and studies report several ways and developments with the main goal always similar: to have more satisfied users by offering them good user experience on a website that has high usability and to keep the costs low. Because of that, more essential is the understanding of user need exactly at the time of use and presenting, suggesting and leading the user to the information or action that is most interesting or needed. This is mainly referred by terms “personalised”, “adaptive” and “intelligent web”. In the following, techniques applied for personalisation are discussed in detail.

1.1.1 Defining Web Personalisation

The terms “web personalisation” or “personalised web” have been defined in literature in several ways. Mulvenna, Anand, & Büchner (2000) have stated that personalisation is the provision to the individual of tailored products, services, information or information relating to products or services.

Eirinaki and Vazirgiannis (2003) on the other hand defined web personalisation as any action that adapts the information or services provided by a website to the needs of a particular user or a set of users, taking advantage of the knowledge gained from the users’ navigational behaviour and individual interests, in combination with the content and the structure of the website. Web personalisation is simply defined as the task of making web-based information systems adaptive to the needs and interests of individual users (Pierrakos, Paliouras, Papathedorou, & Spyropoulos, 2003). This thesis considers all mentioned definitions depending on the context.

The first attempt to provide web personalisation was check-box personalisation (Mulvenna, Anand, & Büchner, 2000), where users could select for example links or shortcuts they would like to have on their personal page. This form of manual personalisation is known as customisation, in which the site can be adjusted to each user preferences regarding its structure and presentation, and loaded every time user logs in. Eirinaki and Vazirgiannis (2003) differentiated customisation and personalisation. Customisation is performed either manually or semi-automatically, in personalisation systems modifications concerning the content or even the structure of a website are performed dynamically (Eirinaki & Vazirgiannis, 2003). Content (pages, items, browsing recommendations etc.) shown to the user are dynamically customised based on information about user behaviour, approximation of what is believed the user is looking for on certain website (Velasquez & Palade, 2008).

Web personalisation allows design or information content to be presented to the user using four basic classes of personalisation functions (Pierrakos, Paliouras, Papathedorou, & Spyropoulos, 2003):

- Memorisation - This is the simplest form of personalisation function, where the system records and stores in its “memory” information about the user, such as name and browsing history. When the user returns to the site, this information is used as a reminder of the user’s past behaviour, without further processing. Usually memorisation is not offered as a stand-alone function, but as part of a personalisation solution, for instance many sites ask users to authorise themselves in order to separate them from common users.
- Guidance – It assist the user in getting quickly to the information that the user is probably seeking for. Personalisation system recommends a set of hyperlinks or offers guidance to an individual at each step of user’s interaction according to the user’s knowledge and interests. For example social media sites guide recently registered users about how to fill in their profile information.
- Customisation – Modification of the web page in terms of content, structure and layout, in order to take into account user’s knowledge, preferences and interests. For example, presenting modified content, adding or removing hyperlinks to optimise the website, providing different prices and payment methods to different users.
- Task performance support – The execution of a particular action on behalf of a user, such as sending e-mail, downloading items, complete queries and represent users interests, for example in negotiation.

Web personalisation has been seen as a solution to the information overload problem that can be solved by several techniques.

1.1.2 Adaptive Web

One possibility to provide personalisation to users is adaptive web. Velasquez and Palade (2008) define adaptive system as system that changes its behaviour by itself, using a user model. User model is the information that the system holds about the interests, the knowledge, the objectives and the preferences of the user (Pierrakos, Paliouras, Papathedorou, & Spyropoulos, 2003). Adaptive web is site that

automatically improves their organisation and presentation by learning from visitor access patterns (Perkowitz & Etzion, 2000).

Based on user behaviour, adaptive website can implement changes to the current website structure and content (Velasquez & Palade, 2008). Because of the adaptation effect for the user it can present relevant search results, provide adaptive navigation support or present webpage content adaptively (Brusilovsky & Maybury, 2002). In an ideal version, a website supports its users on finding information they desire for taking into consideration different patterns, aspects and attributes. With the increasing use of mobile devices, the adaptation can be extended by adding models of context, for example location, time, computing platform and bandwidth (Brusilovsky & Maybury, 2002).

Velasquez and Palade found (2008) the adaptive web could be a solution for the following problems:

- Different users imply different uses.
- The user behaviour changes in time.
- When the user is searching for specific information, he/she could feel being lost in hyperspace.

On the other hand the mentioned problems are a motivation to develop adaptive web. Researchers have shown (Kim, Cramer, Teevan, & Lagun, 2013) that people engaged more with adaptive search results compared to regular search behaviour. Adaptive search results helped users to complete their searches faster and they clicked less frequently (Kim, Cramer, Teevan, & Lagun, 2013). This shows that as the user is searching for specific information, it is easy to get lost in information, finding the needed information can be frustrating and as a result the user will blame the search engine. With the adaptive search results the most popular, relevant or latest information could be presented to help the user to find the information faster. As a result the user is satisfied and most likely will use the same search engine again.

One of the adaptive systems implemented on websites can be adaptive navigation support that gives alternative version of appearance of the links on one site. Adaptive navigation support is using such methods as (Brusilovsky, 2007):

- Direct guidance - suggesting links to the user.
- Link ordering - prioritising all the links of a particular page according to the user model and some user-valuable criteria: the closer to the top, the more relevant the link is.
- Link hiding - restricting the navigation space by hiding, removing, or disabling links to irrelevant pages.
- Link annotation - augmenting links with some form of annotation, which lets the user to know more about the current state of the nodes behind the annotated links.
- Link generation – creating new non-authored links on a page.

Adaptive web solutions is a way to present the website content and links to the user based on user behaviour, assuming what is the information that the user wants to see or use.

1.1.3 Recommender Systems

Recommendations from good friends and experts are something that is considered in everyday life activities. It is very common to ask for help, advice or just information from the person one considers being more advanced in the area or is more specialised in the topic. Artificial recommendation systems attend to emulate this aforementioned human recommendation, by tracking past facts performed by a group of persons, such as products acquired, Frequently Asked Questions, for producing new recommendations to an individual person (Velasquez & Palade, 2008). This kind of recommendation system is also known as collective intelligence.

In e-commerce it is well used to guide users to the products they could like based on what other users have bought or system recommends them products that they would be possibly interested in. For e-commerce using recommendations to get users to buy more is a business strategy to increase sales by suggesting products to the user

and providing information that would make users to decide to buy some other product. For instance an online music store might recommend Bach to someone interested in rock music because a number of users have bought besides classical music some rock music performer creation. Schafer, Konstan, & Riedl (2001) found that using recommendation is a part of personalisation on a site because the site adapts to each user. In e-commerce recommendations can be suggesting products based on the top overall sellers on a site, on the demographics of the customer, or on analysis of the past buying behaviour of the customer, providing personalised product information, summarising community opinion and providing critiques (Schafer, Konstan, & Riedl, 2001).

The main problem of applying the recommender system is to have it accurate and efficient. There are several techniques used to develop automatic recommender system. Nearest neighbor algortihms use predictions of how much a consumer will like a product based on the weighted average of the opinions of a set of nearest neighbors for that product, clustering system identifies groups of consumers who appear to have similar preferences and predictions for an individual are made by averaging the opinions of the other consumers in that cluster (Schafer, Konstan, & Riedl, 2001). In order to have a profit, known e-commerce websites, for excample Amazon[3], use several recommender systems techniques and those automatic recommender systems can use manually selected recommandations or other users comments and reviews.

Concerning the usage and design of the recommendation systems for all sites in addition to e-commerce sites arouse three aspects (Kumar, Raghavan, Rajagopalan, & Tomkin, 2001):

- Design of algorithms in order to provide users with useful recommendations.
- Gathering information conveniently and unobtrusively for the user.
- Ensuring user privacy in order to combine information gathered from a group of users to the advantage of an individual user, without divulging information about other users.

[3] http://www.amazon.com/

Recommender system is a possibility in addition to user main activity on the website to recommend a product or an e-service, but the system should be well-implemented and present users only useful information. Analysis of information has a crucial role here.

1.1.4 Data Collection and Web Usage Mining

In order to provide a user with adaptive or personalised web or to understand what kind of products should be suggested to a consumer, acquiring information about users and their behaviour on a site is needed. The simplest way to ask users about their needs, recommendations and motivations is to ask their opinion with ranking, questionnaire, interview or other user research method that focuses on understanding user behaviour, needs, and motivations through observation techniques, task analysis, and other feedback methodologies (Kuniavsky, 2003). It requires active participation from users and reliability concerning online activities. Then again studies show that with the time users usually spend on the page, they would not have time to delve into their actions and context (Weinreich, Obendorf, Herder, & Mayer, 2008). That requires besides asking from users to collect additional information to verify the data accuracy.

More precise data about user activity is achieved by gathering information behind the clicks. In general, there are two ways of collecting data – server-side collection and client-side collection. Collected and analysed information could include for example pages visited, time spent on each page, next and previous navigated pages etc. One of the well-known tools used for client-side data collection to analyse website visitor traffic is Google Analytics, which is mainly used to discover where site visitors come from, what pages they visit, how long they stay on a page, what they watch, what makes them give up and where they go next. Disadvantage here is that users can prevent their data from being collected and used by Google Analytics and for that Google has developed Google Analytics opt-out Browser add-on (Google Analytics Opt-out Browser Add-on, 2013). This means if users want to block Google Analytics tracking their activity on a website, this add-on prohibits the Google Analytics

JavaScript to send data to Google Analytics and in this case it is not possible to get the real data about user activity on a site.

Data collected from server-side use web log files, which identify users' access to files in a certain web server in order to collect information about their activity. Depending on research interest, server-side data collection may not be as accurate as needed, although server-side data collection is less invasive and manipulating it requires hacking skills, still client-side data collection can be more accurate in measuring personal information, because client-side method requires installing a monitoring program in a user's computer, some contact with user or even exposing sensitive personal information (Yun, et al., 2006). In order to analyse user behaviour based on web log files, it is necessary to reconstruct user's real session, which is a very complex task because of the extra information in web log files. For instance web crawlers used by search engines will create requests as artificial sessions and usage of proxy or firewall has a large number of registers originating from the same IP address in web log files (Velasquez & Palade, 2008). For example, it is not registered as session in web logs if user returns to the site during the same session using back button in the browser and the page is in the browser cache.

Although client-side data collection could give results that are easy to analyse, there is always a possibility that the data is not about all of the users of the website and not accurate. Then again server-side data collection is not possible to block by users, but analysing the data is more complex. In both cases the accuracy of the data is not complete, but client-side data collection gives easily an overview of users main activities and if possible, it could be verified and compared with the server-side collected data.

One of the possibilities to analyse the data that has been collected from web server logs and automatically implement website personalisation is web usage mining. The overall effort analysing data collected in web logs and extracting useful information has been named web mining (Etzion, 1996). One of the branches of web mining is web usage mining, application of data mining techniques to analyse web log files and discover user access patterns of website (Srivastava, Cooley, Deshpande, & Tan, 2000).

Web usage mining has been seen useful tool for automated web personalisation. It can be a source of ideas and solutions for realising automated personalisation tool as collecting and analysing data about interaction between website and user and constructing models representing the behaviour and interests of users (Pierrakos, Paliouras, Papathedorou, & Spyropoulos, 2003). Shortly web usage mining is the procedure where the information stored in Web server logs is processed in order to extract statistical information and discover interesting usage patterns, cluster the users into groups according to their navigational behaviour, and discover potential correlations between web pages and user groups (Eirinaki & Vazirgiannis, 2003). Then again it should be considered that the web log files cannot always considered reliable information source about the usage of the site for web personalisation, because it is important to identify individual users, in order to discover their interest (Pierrakos, Paliouras, Papathedorou, & Spyropoulos, 2003) and real needs.

Analysing web usage data in order to understand web usage and applying gained knowledge to better serve users is complex task that should consider besides automated possibilities other aspects to verify data in order to have accurate results.

1.1.5 User Input and Profile

In addition analysing log files and client-side collected data, accurate knowledge about users for providing personalisation can be obtained by collecting data directly supplied by users (Pierrakos, Paliouras, Papathedorou, & Spyropoulos, 2003). Information about the user is typically provided as one registers to a site or fills in profile questionnaire (Eirinaki & Vazirgiannis, 2003) that is in many cases used to understand more about the user such as interests, relationship status and activities in addition to usual data like name, age, gender and location. The above-mentioned process of collecting information is called explicit user profiling (Eirinaki & Vazirgiannis, 2003).

Besides collecting information by directly asking from users, there is possibility to gather information implicitly and user profile is constructed implicitly by recording the navigational behaviour and preferences of each user (Eirinaki & Vazirgiannis, 2003). User profiling is well used for online businesses as dynamic user profiles (Ntwanga,

Calitz, & Barnard, 2008), which are constructed based on the user preferences and analysing user activities performed.

Implicit user profiling is not interfering user activities and does not require visible effort from the user, then again it is depending on the technical solution, for example if cookies are used for gathering user information, then users can any time turn on or off cookie support on the browser or they might delete the cookies. Usage of cookies has to be in accordance with the laws and privacy issues. Explicit user profiling reliability depends on users: they can submit false information about themselves and the profile is still not accurate. In addition to false information users might feel uncomfortable giving away their personal information, because of privacy concerns or they would prefer being anonymous. In both cases, explicit and implicit user profiling has the problem of how to gather accurate information for creating user profile.

1.2 E-Government Portals

Many citizens are using Internet as their main communication method, therefore information and public services have moved online. Government providing online information and public services is known as e-government. In general, e-government means communication and service provision online to citizens, business and public institutions. Three types of interactions can be examined (Jaeger, 2003):

- Government-to-Government (G2G) – communication between parts of a government, leading to higher consistency and efficiency.
- Government-to-Business (G2B) – the sale of government goods and the procurement of goods and services for the government, both sides profit from reduced costs and could increase efficiency in performing transactions and in procurement processes.
- Government-to-Citizen (G2C) – offers wide range of information and services, citizens can be more informed about governmental issues and participate in the political process.

An e-government portal is an online single point of access for government institutions, businesses and citizens, also known as online one-stop government

portal. This term implies that electronic public services are permanently accessible from citizens' homes, libraries, schools, and shopping mall or on the move through a single window even if different public authorities or private service providers deliver them. One of the most important prerequisites of the online one-stop government portal is that electronic public services are well structured and well understandable (Wimmer & Tambouris, 2002), in order to meet the perspectives and needs of users.

To provide electronic services in a citizen-oriented way, the life-event approach has been used in designing public services. In this approach the portal should help people to identify which services they need in a particular situation or event, because for users it is easier to identify life events instead of knowing which particular public service they need or which government or public authorities provide that service or information. Based on a brief life-event description users can easily identify which public service corresponds to their current situation (Todorovski, Leben, Kunstelj, Cukjati, & Vintar, 2006). After identification, the user is provided with information about the services, institutions and etc. in order to consume public service and the user has to choose suitable version of the same life-event that is most appropriate, for example life event can be the birth of the child, but naming the child has different official procedures for a single-parent than for a couple.

Traditional government portals use the one-size-fits-all approach, thus the portal cannot react differently and tailor the offered public services to the needs and the profile of each individual citizen (Loutas, Lee, Maali, Peristeras, & Tarabanis, 2011). In this approach users are the active side, they have to understand whether they are eligible for certain services or have they understood correctly public service descriptions mostly consisting of legal terminology and bureaucratic terms. The Semantic Public Service Portal (S-PSP) approach, initially developed in the context of Semantic eGov[4] project, is used to provide user with the services that suit them, to personalise the public-service-related information according to the profile and the specific needs and wants of the citizen (Loutas, Lee, Maali, Peristeras, & Tarabanis, 2011). S-PSP provides information about available public services; users can browse them and select interesting service. In the next step users have to answer a series of

[4] http://www.rural-inclusion.eu/?q=en/node/255

questions determining if they are eligible for the specific public service before the actual execution of the service, thus saving them time, effort and money (Loutas, Lee, Maali, Peristeras, & Tarabanis, 2011). Above-mentioned approach also provides personalised information if the user has given the needed input about his/her interests and needs.

As e-government portal is online single point of access to several governmental services, the previously described two approaches aim to make it easier for users to find suitable services. Although from the user perspective both cases have flaws – life-event and S-PSP approach require users to be the active side and make an effort to reach the goal. Therefore these approaches need modification to provide fully personalised e-government portal.

1.3 Personalising E-Government Portals

Users expect e-government portals to adapt with users in the same level as other everyday services, such as online banking, shopping on eBay[5] or even social network systems such as Facebook[6]. In physical service officials respond to different citizens needs or provide them with extra information, e-government portals are more complex, responding to various users and human side of understanding exceptions is missing. In recent years it has been understood that e-government portals should be user-adaptive. The Dutch portal My Government (MijnOverheid)[7] is a personal website for government affairs, Finnish portal suomi.fi has a citizen account, but Finland is planning to develop personalised view for citizens.

Adaptive government portal has the following requirements (Schmidt, Stojanovic, Stojanovic, & Thomas, 2010):

- Must provide guidance and information that matches the users.
- As citizens use e-government portals rarely, they should not be bothered with providing or maintaining any user profiles.

[5] http://www.ebay.com/
[6] https://www.facebook.com/
[7] https://mijn.overheid.nl

- Implemented usability principles should provide accurate, but unobtrusive guidance when and where the user needs it.
- To continuously improve the portal, users' feedback should be gathered about every particular service the user executed.
- Successful adaptation strategies and rules should be shared for providing different services.

Described requirements indicate even more that life-event and S-PSP approach are good initiatives how to present information to the user, but instead of asking questions from the user, approaches used for personalising e-commerce websites, such as recommender systems, adaptive navigation and customisation could be more widely used for personalising e-government portals.

Moving in the same direction as e-commerce websites can be difficult, because personalisation for e-government can be comprehended in several ways. Personalisation could be in the form of pre-filled online forms (van Velsen, van der Geest, ter Hedde, & Derks, 2008) or provision of services suitable for certain user. Then again it is clear that personalised e-government portal can increase the overall usability of the portal, increase the usage, and for governmental institutions increase the efficiency and user satisfaction. Although users and governmental institutions benefit from personalised e-government portals, there still remain problems and even obstacles. Pieterson, Ebbers and van Dijk (2007) name most important user and organisational obstacles to personalisation.

User obstacles to personalisation that influence organisational readiness to provide personalised e-government are as follows (Pieterson, Ebbers, & van Dijk, 2007):

- Access – according to the intensity of usage and acceptance of applications that take advantage of personalised electronic government services three groups of users can be distinguished. First, information elite, who might be most interested of personalised e-government, but as well they are the most critical users, because they are experienced users with various skills. Second, electronic middle class, who would be attracted by very basic, accessible, user friendly, trustworthy personalised application. The third group is considered

digital illiterates, who lack of motivation, resources and skills to use computers, Internet and other complicated digital media.

- Trust – this is not only a prerequisite for good personalisation, good personalisation also generates trust.
- Control – users would accept personalisation well, if they have an obvious control over how and who is using their personal information, and they would be asked to give extra permission before their information is used.
- Acceptance – acceptance of personalised electronic government services by users and acceptance of organisations and acceptance of the technology.
- Privacy – users concern about using information for personalisation. This factor will be more discussed in Subsection 1.4.

Clearly organisation developing personalisation has to consider above described user obstacles, although the author of this thesis believes that these obstacles are solvable. Therefore it should be considered with all groups of users, personalisation solutions should be clear that users would trust it and have a control over it, if solution is easy and creates user experience, it is accepted. As described in Subchapter 1.1.5 users have privacy concerns with explicit user profiling as well, therefore privacy concerns need in-depth discussion.

Main organisation obstacles to personalisation are identified as a group of factors (Pieterson, Ebbers, & van Dijk, 2007):

- Process based – a need to redesign and implement a business process. Business process has to cope with the user control and influence.
- Financial – investments for personalised e-government are seen as barriers. Personalising e-government needs funding, if government does not meet costs, it can slow down the implementation of the e-government overall.
- Governance-based – defining the responsible institution. If implementing personalised e-government services combines several institutions, there is a question what department or institution is responsible for that.
- Technical – it can be difficult to add a personalised e-government service application on top of the existing information system because of legacy

information systems. Older generation hardware and software components are not able to work with each other.

- Legal – legislation has to be adapted in order to implement e-government services correctly or privacy issues can make it difficult for governments to adopt personalisation strategies from the commercial sector. In addition, if public organisations start to collaborate and start offering joint services, it should be legally recorded.

Previously described user obstacles and organisational obstacles are the factors that have a role in development of personalised e-government portal. Also, through those obstacles the success of the personalisation could be evaluated. Solving organisation obstacles depends usually on more than one organisation and therefore it can be the factor of slower development even if from users there are no obstacles and users are accepting personalisation.

1.4 Privacy and Legal Issues of Web Personalisation in Public Sector

Privacy and legal issues are in a way sensitive and thus are a very important topic at global level concerning all kind of web usage and developments. E-commerce by collecting personal data about users is a way to provide extensive personalisation. Users who are unhappy about their information being shared and sold want businesses to provide stricter privacy policies (Schafer, Konstan, & Riedl, 2001), which state limitations of the personal information use and storage. Knowledge about that makes users to decide for example not to use certain browser (Viticci, 2013) or to give up the usage of several applications that have information about the user.

If there is a technical error or mistake in e-government, often the public will form their opinion based on the situation. Although it is not clear what privacy threats are most influential to users about personalised e-government (Pieterson, Ebbers, & van Dijk, 2007), it is clear that privacy issues have a role in trust of e-government by users, and only by trust can e-government be successful (Warkentin, Gefen, Pavlou, & Rose, 2002). To maintain user trust in e-government and to prevent manipulation with personal information, governments have to consider how to limit the sharing of

information with persons or organisations to which the user did not wish provide the information to (Jaeger, 2003).

Besides the user's natural scepticism, the trust can be affected by privacy threats that mainly occur in e-commerce area (Wang, Lee, & Wang, 1998):

- Improper access to information and collection of information (e.g. without notice or acknowledgment from the user to access personal usage data and personal data).
- Improper use of information, such as transferring private information to third parties.
- Privacy invasion, spamming or overwhelming with unwanted information.
- Improper storage and analyse of information, for example lack of authentication control for information access.

One of the solutions is to use guidelines and rules so the data analyses can be performed without compromising personal information of users (Srivastava, Cooley, Deshpande, & Tan, 2000). The World Wide Web Consortium (W3C) has an initiative called Platform for Privacy Preferences (P3P) (P3P: The Platform for Privacy Preferences, 2007), that is a protocol allowing websites to declare how they intend to use the information collected about users, although the initiative has not been implemented widely. Privacy policies are used more widely consisting of statements, website owners explaining what they collect and how they use it. Privacy policies are important to recommender systems because stronger privacy policies limit overall ability to collect data about users, which makes personalised recommendation impossible (Schafer, Konstan, & Riedl, 2001). For example the Estonian State portal eesti.ee privacy policy states that personal details are used in accordance to Personal Data Protection Act, personal details stored on the portal are accessible only to the portal administrator and service provider and not to third parties and describes the use of cookies for identification of user sessions (Riigiportaal eesti.ee, 2014).

Public organisations have legal conditions by law for collecting and storing data on users in order to provide personalisation. For governments privacy infringement

issues make it difficult to adopt personalisation strategies from the private sector (Pieterson, Ebbers, & van Dijk, 2007). On the other hand legal conditions make it possible to implement personalisation or limit the personalisation of e-government portals.

On European level the European Commission is in the process of reviewing the general European Union (EU) legal framework on the protection of personal data. The current EU Data Protection Directive 95/46/EC (1995) is regulating processing of personal data. European Commission has proposed new guidelines for data protection and privacy (Protection of personal data, n.y.) that will be adopted in 2014. New regulation will consider new technologies like social networks and cloud computing, giving people an easier way to access, control and delete their own data online. It will be single set of rules valid across the European Union (Protection of personal data, n.y.).

In Estonia the Constitution (Eesti Vabariigi põhiseadus, 1992) regulates the basis for everyone's' privacy through the Personal Data Protection Act, which regulates the conditions, procedure for processing personal data and principles of processing personal data (Isikuandmete kaitse seadus, 2011). As described before the Estonian State Portal eesti.ee has to process persona data by the law and new developments have to be according to that.

Legal regulations have provided circumstances for digital authentication (Isikut tõendavate dokumentide seadus, 1999) and digital signature (Digitaalallkirja seadus, 2000) to protect online transactions and users. Based on digital authentication and signature, there are conditions for secure online communication and making the system transparent and trustworthy for the users. The Public Information Act (Avaliku teabe seadus, 2000) has set the legal grounds for Estonian e-government portal. By law there is an Estonian information gateway, website that allows access to public information and information about public, to public electronic services and reusable information. The management, structure and development of the Estonian e-government portal eesti.ee are set by the legal regulation (Eesti teabevärava eesti.ee haldamise, teabe kättesaadavaks tegemise, arendamise ning kasutamise nõuded ja

kord, 2013). It can be claimed that for personalising the Estonian State Portal eesti.ee there are no major governance-based obstacles as the responsible institution has been set, the legislation supports online communication and handling users' privacy should be according to the law. Then again the legislation directly does not support personalisation – it is not mentioned in laws that the Estonian e-government portal should present users information in a personalised way, users have possibility to choose what kind of communication with the government they prefer compared to other countries there online communication is mandatory for all or almost all citizens. In addition as the Estonian State Portal eesti.ee provides more than 200 e-services, all of the single services have to be in accordance with many other laws. This results that there can be conflict between the laws that regulate the portal and the single service provision. This needs analyse of the every single case separately and will not be done in the context of the current thesis.

Besides protecting and handling users' privacy, one important aspect is online security. Any e-government has to face issues related to protecting their information and systems from breaches of computer security (Jaeger, 2003), such as hackers and viruses, storage of electronic data only to authorized access (Relyea, 2002). Concerning personalised e-government portals, the security is not only about protecting systems and services, providing integrity and availability of e-government, but as well it is about confidence and trust users have towards the system (Jaeger, 2003). Therefore personalisation of e-government portal has to protect users' privacy and has to be secure online channel between the government and a citizen. Probably users, who trust e-government portal and the information provided by this portal, will use the portal in future and even recommend it to others.

2. Personalisation of E-Government Portals

All over the world, developments of e-government and e-government portals as one single entrance point for public services are an important goal for governments. Europe the eGovernment Action Plan (The European eGovernment Action Plan 2011-2015, 2010) has recognised that e-government and its portals could provide many advantages to citizens, businesses and the public sector overall. By 2015 the target is that 50% of citizens and 80% businesses have used some e-government services.

In this chapter an overview of e-government portals in Europe that have applied personalisation, and descriptions on accomplishing it are presented together with the outcomes of this process. According to the latest the United Nations Global E-Government Survey, which is carried out every two years, Denmark, Norway and Estonia were the countries among top 20 world e-government development leaders in 2012 (United Nations, 2012). Estonia is on the 20th level of ranking of e-government development leaders (United Nations, 2012) and compared to other countries experience viewed in this thesis, Austria is on the lowest – 21st level of ranking, that is why it is chosen to be viewed in this thesis. The top three world e-government development leaders were Republic of Korea, Netherlands and United Kingdom. To compare the personalisation of the Estonian portal with other portals, Denmark and Norway were chosen, because these portals have been leading a way of developing personalisation of citizen portals. In addition the Danish portal has been used as an example for developing the personalisation of the Estonian State Portal eesti.ee.

2.1 Denmark - Example of borger.dk

Danish e-government strategy has aimed to adopt information technology and new technologies to save time and money. One of the aims is that 80% of written communication between citizens and/or companies and the public sector must take place online (eGovernment strategy 2011-2015, 2013). Borger.dk is the Danish citizen portal where Danish citizens can find all public information and self-service

options. It was established in 2005 when it replaced the municipal portal netborger.dk and the governmental portal danmark.dk (Furuli & Kongsrud, 2007). Personalisation of borger.dk has been mainly achieved by developing citizen-centered personal information view, which is accessible only on My Page. As Figure 1 shows besides an overview of the personal data in movable boxes the user has a personalised menu. It was released in October 2010 and officially launched in January 2011 (Meyerhoff Nielsen, 2012). On My Page the citizen can through the use of their digital signature view data about salary for the past three months, data about taxes, private property, social security number of one's and children's and spouse's and possibility to edit data or print relevant documents (Borger.dk, 2012).

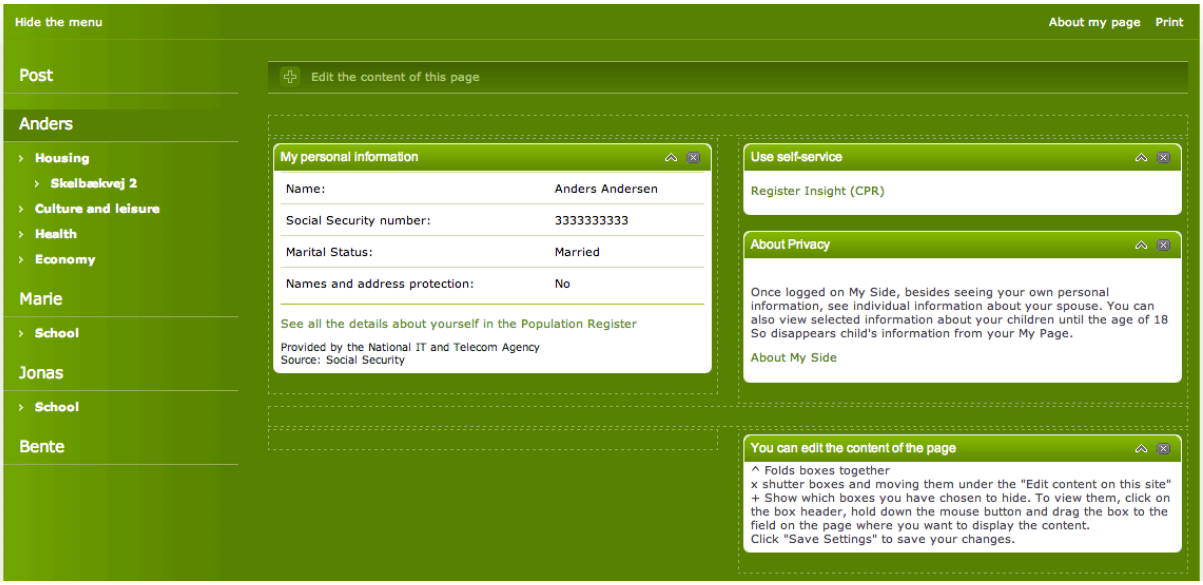

Figure 1. Demo version of personalised My Page of borger.dk as it looked before the redesign in 2012 (Demo of borger.dk, n.y)

Users of My Page have their personalised menu, digital post account for sending, storing and receiving digital post from public and private organisations; widgets presented to the user can be moved around by the user to ensure their personal preferences (Meyerhoff Nielsen, 2012). The latter feature is also known as personal customisation. One of the aspects of personalisation besides viewing personal data is possibility to view the location-based services. If the user is logged in, borger.dk content is automatically shown to the user based on specific region. The aim is to personalise the content of the portal based on the user's needs, for example to see

content only about one region not about all the Denmark. In public portal, the user can customise the portal by selecting the region of interest.

The Danish Data Protection Agency has approved My Page as compliant with national legislation governing privacy and security of personal data (Meyerhoff Nielsen, 2012). Therefore, it is legally required every time a person logs in My Page a user gives his/her consent for borger.dk to collect the citizen's personal and private data from different public sector sources (Meyerhoff Nielsen, 2012). This can be considered as overcoming user obstacles to personalisation, but as well legally the personalisation strategy has no obstacles. With the consent users can trust the e-government portal and they have a control over how their personal information is used. For data collection about users, borger.dk uses cookies to store information about users' online behaviour in order to analyse how the website is being used and the web editors can improve the user experience. In the Danish case, it has been selected client-side data collection – users have to accept use of cookies, but at any time they can undo the acceptance of the cookies.

The main benefit of the personalised My Page is seen besides citizens serving themselves online in terms of effectiveness and efficiency for public authorities reducing costs, but as well My Page is a secure framework, which other public authorities can fill out with both information and solutions (Borger.dk, 2012). This kind of solution helps to overcome organisational obstacles to personalisation; there is technically and process based easy way to add personalised information or services.

My Page success criteria for 2011 was reached the same year in April as ten authorities displayed new content/data on My Page and in 2011 for promotion of My Page to ensure authority and citizen use 0.75 million DKK (0.1 million €) was allocated (Meyerhoff Nielsen, 2012). The promotion campaign can be seen as one of the possibilities to have all user groups aware of online communication and by this provide better access to personalised borger.dk and overall acceptance to use e-government portal. On the other hand having new authorities providing their content and services in borger.dk has the aim to provide one-stop government portal that has

redesigned business processes and the responsible institutions for developing personalisation, adding content are defined.

In 2012 borger.dk and My Page was redesigned in terms of the information architecture, navigation, online search etc. in order to optimise user experience (Borger.dk, 2012). Functions of the My Page stayed the same, based on personas, users and test groups feedback through design usability of My Page was improved, for example the personal menu was moved from left to up and main menus of borger.dk were made visible as well on My Page as seen on Figure 2. The requirements of adaptive e-government portal such as usability, continues improvement and analysing users feedback have been fulfilled as the My Page is continuously improved based on user problems and needs.

Figure 2. Demo version of the My Page of borger.dk after the redesign was done in 2012 (Meyerhoff Nielsen, 2012)

Borger.dk was World Summit Award of 2007 in the category of e-government as the best national example (Borger.dk - Version 2, n.d.). Denmark was on 4th level of world e-government leaders in 2012 (United Nations, 2012).

2.2 Norway - Example of norway.no

The website norway.no is a gateway to online state, county and municipal services. Norwegian citizen portal Mypage (www.minside.no) was launched in December 2006. Mypage, part of norway.no, which acts as a gateway to public sector

information in Norway, is a collection of e-services, personalised for the citizens (Furuli & Ølnes, 2009). This means that Mypage does not contain public information as its function is to give access to personalised services, so norway.no contains public information and functions as a guide to such information (Furuli & Kongsrud, 2007).

Compared to borger.dk where the user had an overview of relevant information, Mypage provided only an easy access to personal information, a common entrance to public e-services. The user could log in and see relevant links to view personal information (Figure 3) such as address, family doctor and vehicles. In this case, mainly the adaptive navigation has been used to achieve personalisation.

Figure 3. View of the personal information on the Norwegian portal Mypage (M.K. Schawlann, personal communication, March 25, 2014)

Mypage also provided messaging service that supported secure communication between citizens and service owners and calendar, which offered an overview of important dates and deadlines, for example delivering tax return (Furuli & Ølnes, 2009). Viewing personal information held by public sector helped citizens to understand what kind of information the public sector holds as it is a right each person is granted according to the privacy law. Citizens were able to correct their information and the surprising result was that a lot of citizens discovered detailed

personal information that they did not know existed or they could inform of mistakes in their data. Obviously now users had more control over their data and that could have generated trust for personalisation, but there is no research about it available as of 2013.

In 2007 the goal of the Mypage was that all relevant services from all levels of administration would be available through Mypage by the end of 2009 (Alvik, 2007). In the two years of operation of Mypage showed that although it had attracted many users, the vast majority of them preferred to use the responsible agency's own self service portal to carry out electronic services (Furuli & Ølnes, 2009). Therefore Furuli and Ølnes (2009) suggested that Mypage should not duplicate services, but should offer services that give users an added value.

Mypage was closed in 2012, because it was mainly linked to the services elsewhere (Agency for Public Management and e-Government, 2012). Clearly there was no strategy for continuesly improving the portal nor making usability improvements gaterhing user feedback. Overview of personal information was gathered to portal norway.no under section My Personal Information (Figure 4) that showed users data from three public registers – information about address, doctor and vehicles (Agency for Public Management and e-Government, 2012).

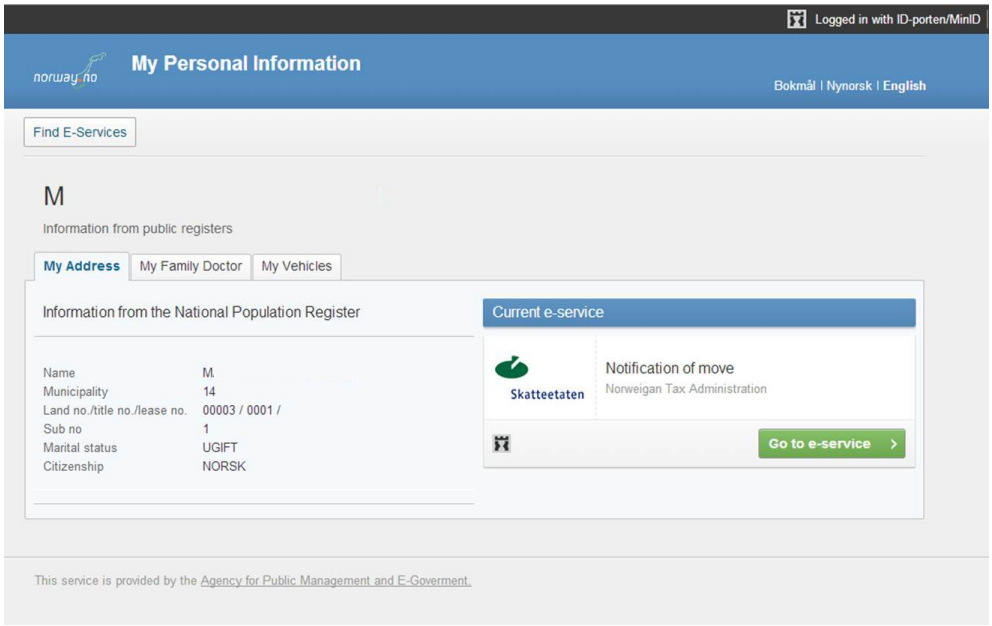

Figure 4. Logged in view of My Personal Information on norway.no (M.K. Schawlann, personal communication, March 25, 2014)

Personalisation should be improved continuesly, closing down Mypage gives a possibility to develop only one portal instead of two. For users as well it is easier to use only one portal, but the owners of the portal should learn from the experience and as an excample of the Danish portal gather user feedback and to improve personalisation. Similarly to the Danish portal, norway.no has a possibility to customise the portal user interface based on the municipality using the manual selection and finding the righ e-service.

Mypage was a winner of the European eGovernment Awards for the best service in the category "Participation and transparency" in 2007 (European eGovernment Awards 2007, 2007). Norway was 8th of world e-government leaders in 2012 (United Nations, 2012).

2.3 Austria – Example of help.gv.at

The central e-government portal of Austria help.gv.at exists since 1997 and offers central information of different authorities and online transactions. In 2008 MyHelp was personalised to increase the efficiency and relevance of data (Pirker, 2009). This meant that users may voluntarily enter personal data into their profile and fills out questionnaire in order to receive a version of help.gv.at that has been individually tailored to them, for example only the relevant authority or information was displayed to the user.

Help.gv.at has about 200 topics on various areas of life, for example housing, education, working and living in Austria etc. Through personalisation to citizens only those topics, authorities and forms from their own region or personal relevance are displayed (Pirker, 2009). If the Danish portal borger.dk uses cookies to collect data about the user, then the Austrian portal has decided to use explicit user profiling and has a questionnaire in order to understand more about the user.

Austrian approach of personalisation is similar to Norway's being an access point to services and information, but in addition showing only relevant information to the user for example in accordance with the ZIP-code, the user has a selection of only those forms which are available from authorities in his/her region. This is similar to Danish

approach of location-based services that are shown to the user. Compared to Danish personalisation approach, the user is not displayed in one view personal information or profile; relevant services, forms and topics are displayed by adaptive navigation and can be viewed by following the links to subpages, therefore the main view of the help.gv.at has no major differences in public view (Figure 5) or for logged in user. As seen on Figure 6, the logged in user can see welcome message with the name links to applications and link to the profile.

Figure 5. Public view of the help.gv.at (J. Rund, personal communication, March 24, 2014)

Figure 6. Logged in view of the help.gv.at (J. Rund, personal communication, March 24, 2014)

Digital agenda of Austria has set one of the key performance indicators that by 2015 at least 50% of the citizens are using e-government services (Digital agenda, n.y). By e-government services are meant information, communication and transaction online between the citizen and government authorities. In order to gain half of the citizens communicating online with the government, MyHelp portal offers besides topic assistance and preselected online forms, similarly with closed Norwegian Mypage reminders of specific expiry dates for citizens, news on personalised topic selection, possibility to link inbox with MyHelp and to use secure electronic delivery of documents and written files, deposit important documents in digital form and a discussion forum (Pirker, 2009). Digital communication between the citizen and government is a part of the Danish and the Norwegian portal as well.

MyHelp was the European eGovernment Award finalist in the category of "eGovernment empowering citizens" in 2009 (European eGovernment Awards, 2009). Austria was 21st of world e-government leaders in 2012 (United Nations, 2012), one ranking lower than Estonia.

2.4 Estonia - Example of eesti.ee

The Estonian State Portal eesti.ee was opened in 2003 as an information portal: e-services were at that time accessible through citizen portal www.riik.ee (Riigiportaal eesti.ee, 2013). In 2005 a conception of "Your Estonia" was introduced which targeted the used personalised information services such as digital signature and @eesti.ee e-mail address (Temmer, Püüa, Oks, Kreinin, Kalja, & Oolberg, 2005).

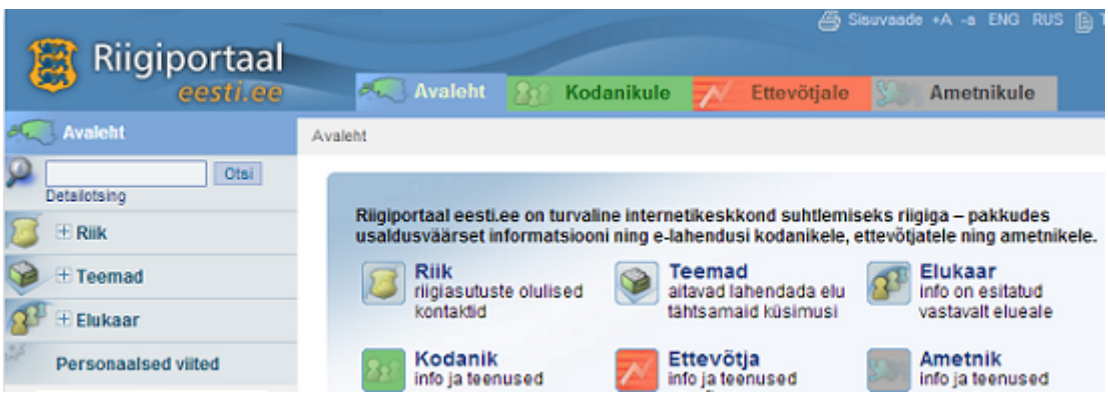

Figure 7. Front page of the Estonian State Portal eesti.ee in 2007 (Riigiportaal eesti.ee, 2013)

In 2007 information portal and citizen portal were joined into one portal eesti.ee (Figure 7) and in addition to secure authentication via Internet bank or ID-card, a possibility to log in using Mobile-ID was added (Riigiportaal eesti.ee, 2013).

In 2009 the logo of the visual concept of the Estonian State portal was redesigned (Riigiportaal eesti.ee, 2013) and the project of redesigning eesti.ee in terms of the information architecture, navigation and providing higher user experience was carried out (Riigi Infosüsteemi Amet, 2010). Renewing the portal was based on explicit and implicit user feedback (Riigi Infosüsteemi Amet, 2009) that was gathered during three months in 2009, usability analyses carried out by Trinidad Consulting OÜ, MRM Baltic OÜ and Webmedia AS, usability research was done during two years (Riigi Infosüsteemi Amet, 2010). The new approach of the development of portal was personalisation for the logged in users. The portal was launched to the public in November 2011 (Riigi Infosüsteemi Amet, 2011).

Besides having a new design and a new way of presenting information, users were presented a personalised menu named My Data which combined already existing e-mail, calendar, ordering notifications and personalised links and as a new feature a possibility to store, digitally sign and send documents (Riigi Infosüsteemi Amet, 2011). Requirements of adaptive government portal, such as implementing usability principles and continuously improving the portal were fulfilled with this.

In order to raise the awareness of the users, the promotion campaign was in January 2010 and promotion campaign to introduce redesigned eesti.ee was carried out in April and May 2012. Besides introducing the access to the personalised eesti.ee to all groups of users, these kinds of campaigns are generating better acceptance with e-government portal and trust to organisation and portal.

Promotional interactive solution Ervinal (Figure 8), which showed the user an overview of their personal data from different state registers on one screen was used during the promotion campaign of redesigned eesti.ee in 2012. Reactions and feedback from users highlighted the need to continue developing of personalisation of the Estonian State Portal eesti.ee and providing users with similar overview.

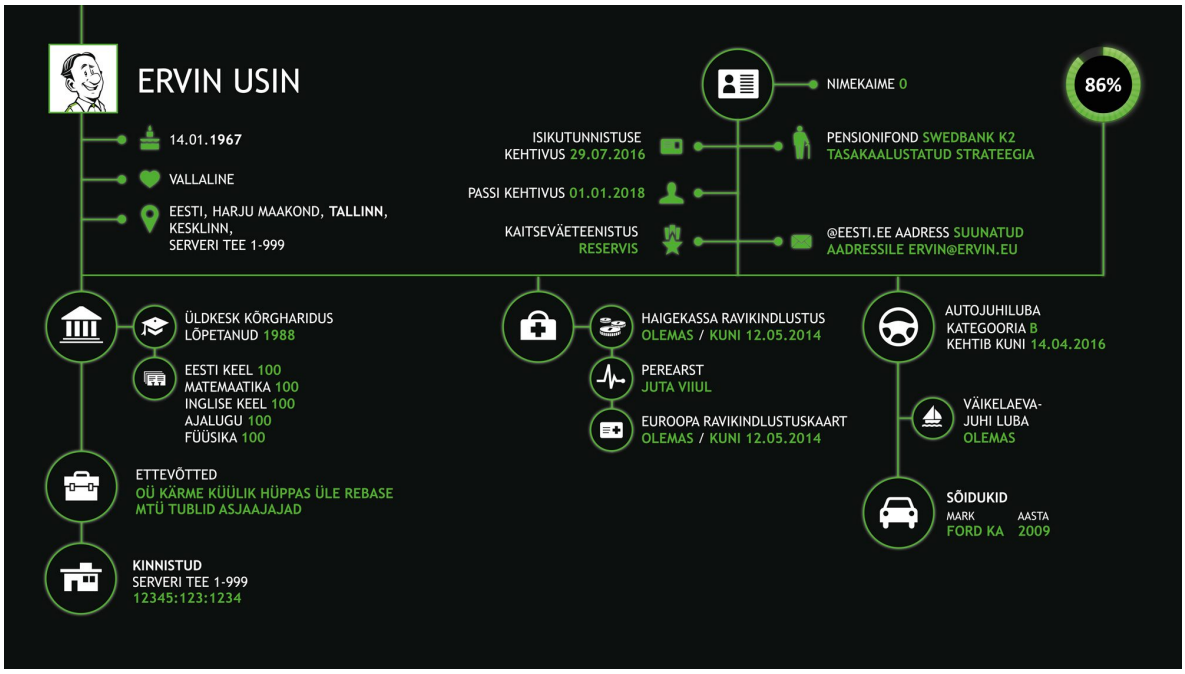

Figure 8. Demo version of personal overview site ervinal.eesti.ee used during the campaign in 2012 (Riigiportaal eesti.ee, 2012)

Providing the secure communication between the citizen and government is the personalisation feature similar for all viewed four portals. Although the Danish and the Austrian portal provide location-based adaptive view if the user is logged in, the Estonian portal has filters that help users to select specific services based on a target group and location and content information based only on target group. There are no adaptive systems for logged in users like the borger.dk and help.gv.at use. The Estonian State Portal eesti.ee also provides logged in users with online pre-filled forms as one approach to personalisation.

In August 2013 the menu My Data was integrated with the possibility for logged in users to see their data overview as seen on Figure 9 – for example residence, expiry dates of ID-card, passport and driving license, health insurance data, registered companies and information about pets (Riigiportaalis eesti.ee näeb oma andmeid ühes kohas, 2013). Information on personalised view is shown by the adaptive system – the user is displayed information based on user models.

In Danish case the personalised view has topics and the information is presented in one place, then the Estonian portal approach is to present the user with most important information and in order to see the detailed view, the user has to use the

links that open the specific e-service – being an access point, similar approach as the Norwegian Mypage used.

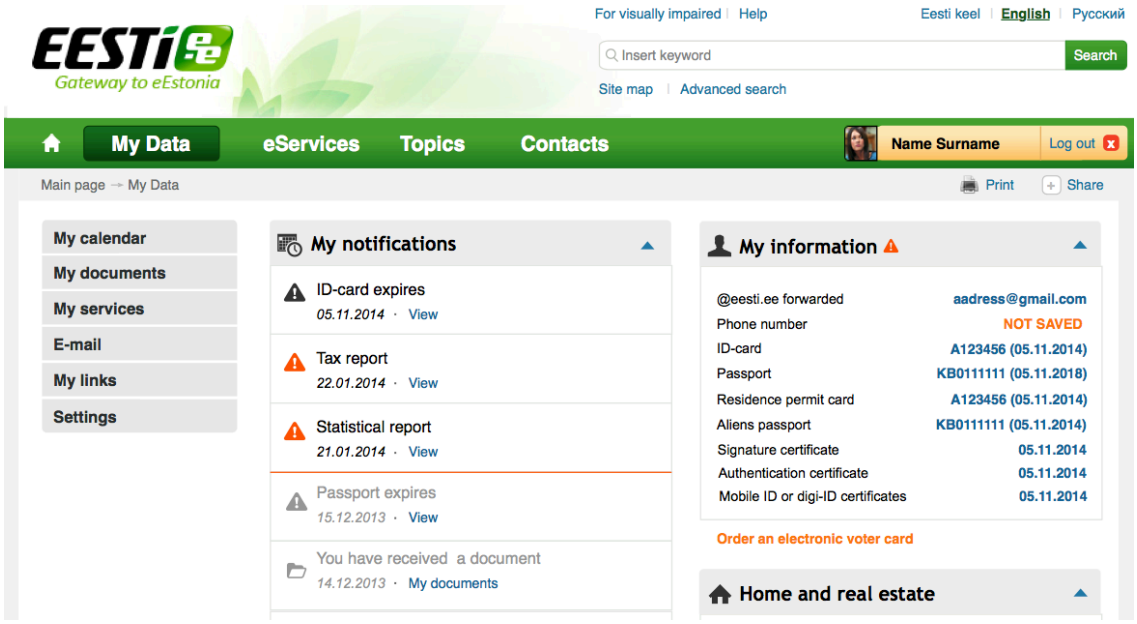

Figure 9. Design sketch of the personalised view of eesti.ee

Development plan 2020 of Estonian Information Society states as important projects and initiatives in next seven years to provide users with control over the use of their personal data (Majandus- ja Kommikatsiooniministeerium, 2013). Personalised view of the State Portal eesti.ee has seen as tool for access to needed information in order to increase the impact and efficiency of public e-services. This means that besides having a view of personal data there should be easy way to consume services that are related to presented information. Then again in one point comes a problem of overload of information if the personal view aims to present all information there is about an individual in state registers. That problem should be prevented before users feel lost in information and the situation is same as at the moment. To have a control over the use of the personal data, users should be able to see who and how has used different parts of their information. At the moment the Estonian State Portal eesti.ee provides an e-service where the user can see who has done queries about his/her information in police registers. Similar solution should be for other state registers as well and possibility to see that, information should be presented to the user in a clear and understandable way.

The implementation plan of 2014-2015 foresees as one of the actions developing the Estonian State Portal eesti.ee with the goal to raise the quality of e-services and consolidating them (Infoühiskonna arengukava 2020 rakendusplaan 2014-2015, 2013) in order to provide users with simplicity. That means managing with process based obstacles and redesigning business processes but as well dealing with governance-based problems as implementing many e-services combines several institutions.

Although only the Danish portal has paid attention on privacy and legal issues by asking the user for the consent to collect the data from different registers, the Estonian portal will develop possibility to opt-out of having a full overview of data in My Data. In this the way user can have the obvious control over the use of personal data. Compared to Danish approach where user has to decide before viewing the information the Estonian portal solution has higher possibility that if user has privacy concerns they still get an understanding of what information is collected for personal view as they see it themselves. The Danish portal is asking for the consent every time the user logs in, but the Estonian portal solution is less disturbing for the user work flow as the opt-out user does once and the portal will remember it until the user changes it.

2.5 Practices of Personalised E-Government Portals

As the overview of four e-government portals shows, the personalisation can be comprehended several ways and achieved differently. As conclusion from the Danish, the Norwegian, the Austrian and the Estonian portal, there are two main approaches used for personalisation: showing the user personal data from different registers in one place or being a single access point to services and information. The Danish and the Estonian portal display the user's personalised view and the Danish portal allows user to customise this view. The Norwegian and the Austrian but as well the Estonian portal act as one single point of access to services and information. Although the case of the Norwegian Mypage confirms that it is not vital to maintain site that only has links to other services and information that could be anyhow consumed in other websites.

Presenting the services and information for all four viewed portals is either automatically tailored to the user based on information there is about the user, for example ZIP-code, or the user has possibility to filter the information manually. The Austrian and the Danish portal use the adaptive approach for showing the content and services if the user is logged in, the Estonian and the Norwegian portal allow users to customise the portal based on their location or by target group. Then again the adaptive approach is not based on user behavior or activities done in portal. All four viewed portals are not using personalisation based on user behavior, although it would improve overall usability as citizens use e-government portals rarely and all of the portals contain much information, users probably get lost often. One of the reasons why supporting user on finding information is done only on location based but not usage patterns or other aspects, is probably because of the difficulties with recording user behavior and analysing the information in order to get accurate results.

From e-commerce websites common recommender systems are not used in viewed four portals. There could be recommenders directly from other users or the system could recommend services that other users have used based on similar signs. This approach helps users to navigate better in information overload, but it can be assumed that using recommender systems in one way is difficult as requires algorithms and analysis of user behavior. As well recommending services based on other user actions may seem interfering users' privacy.

Extra values of personalisation are created with providing an e-mail or messaging service using the portals secure channel – communication between the citizen and government by sending e-mail or digital documents. All of the portals use personalisation for being proactive – the user has a calendar or some reminding system in order to have an overview of relevant dates in one place or by topics as the Danish portal displays the personal menu. As pre-filled forms can be considered the personalisation, the Estonian portal has used it as one of the possibilities to achieve the personalisation.

To ensure the accordance with legal and privacy issues, the Danish portal is asking consent of users to collect information from different registries and display it to the user. The Estonian portal will use the possibility to opt-out the queries to different registries in order to show personal information on one view. This kind of approach is a way to overcome user obstacles to personalisation but as well for generating trust and control.

Considering the approaches of personalisation that four analysed portals have used, there cannot be named what is the best practice of personalisation as all the portals have achieved personalisation in their own way and that will be explored more in Chapter 3. Then again, the aim of personalisation has been same for all – to have communication between the citizen and government online in order to increase the efficiency of e-government and to provide users with the possibility to have control over their personal information.

3. Research of Personalised E-Government Portals

This chapter gives an overview of the strategy and methods of the research conducted on exploring more what should be considered when developing personalised e-government portals and evaluating the outcomes of the personalisation of the Estonian State Portal eesti.ee and research sampling. In the context of this thesis were carried out expert interviews to explore in depth four viewed examples of personalised e-government portals and a survey to evaluate the personalisation of the Estonian State Portal eesti.ee. It is described how and when the study was made and what were the results of the research.

3.1 Research Strategy and Methods

The intention of the case study carried out in this thesis is to find answers to the following research questions:

- What are the best practices for personalised e-government portals?
- What should be considered when developing personalised e-government portals?
- What could be the future for the personalised Estonian State Portal eesti.ee?

The research aims to analyse the results of personalisation of Danish, Norwegian and Austrian e-government portals and the Estonian State Portal eesti.ee and to describe the future perspectives of eesti.ee.

As a qualitative method for exploring the practices of personalised e-government portals was used expert interviews, that enables to go to more in depth and get explanations and arguments of the interviewees. As a data collection method, interviews are preferable because it enables flexibility depending on the situation and respondent (Hirsjärvi, Remes, & Sajavaara, 2010). A semi structured subject interview was used in this thesis. This type of interview has known subtopics of the interview, but not all the questions are formalised nor ordered (Hirsjärvi, Remes, & Sajavaara, 2010).

Interview questions (Appendix 1) are divided into three main topics. The first topic is about the goal of the personalisation. Intention is to find out what has motivated to develop personalised e-government portals in Estonia and in Denmark, Norway and Austria.

The second core topic explores the obstacles and benefits, which have occurred in developing personalised e-government portals. The third topic focuses on finding out the future of personalising e-government portals based on the explored four e-government portals.

The main questions of the interview are supposed to get an overview of the experiences and understanding of the interviewee. Specifying questions are built on the answers of the interviewee and composed during the interview. Interview questions to the representatives of Danish, Norwegian and Austrian portal were sent by e-mail and all the additional questions were asked in written form after the initial answers. Collected data was analysed using qualitative content analysis such as conventional and summative analysis.

As a quantitative method for evaluating efficiency of personalisation action was used web-based survey to measure user satisfaction with the Estonian State Portal personal view My Data. Questionnaire was adopted from ZeGo survey (Bargas-Avila, Orsini, Vido de, & Opwis, 2010). The short questionnaire consist of 15 items: two questions are open ended, one question is with options and for all other questions, a five-point Likert scales were used with Likert items as presented in Table 1. With an option “Do not wish to answer” were provided 11 of the questions and first 12 questions were marked as required questions. The questionnaire (Appendix 3) was in three languages – Estonian, English and Russian – in those languages it is possible to use the Estonian State Portal eesti.ee.

Table 1. Likert items in English used for web-based questionnaire

Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree

Velásquez and Palade (2008) stated in their book “Adaptive Web Sites” that real users may not be interested in giving their direct opinion about the quality of

personalisation action, either they do not have time or they are willing to delve into the topic. In this case it is recommended to estimate the effectiveness of personalisation action by log files and statistical tools. There will be clear data registered if users use or follow the links that are given in personalisation, if no action is stored, that is a clear indication that the personalisation action is not being followed by the users (Velasquez & Palade, 2008). Therefore the results of the survey were compared with the data collected from log files and statistical tools that are used to analyse user behaviour on the State Portal eesti.ee.

3.2 Research Sampling

In the focus of the thesis are two sides – using the citizen portal and developing it. Therefore the research sample has two main groups – users and organisations/developers. The written interview questions were sent to contact addresses or known representatives of the Danish, Norwegian and Austrian portals. Interviewees with the position and comments are presented in Table 2.

Table 2. Names and positions of interviewees

Name	Current Position	Comment
Mihkel Tikk	Head of the Department of the State Portal eesti.ee, Estonian Information System's Authority	Management of the eesti.ee
Janek Rozov	Head of the Department of Information Society Services Development, Estonian Ministry of Economic Affairs and Communications	Coordination of public e-Services
Liina Martõnjak	Senior UX Architect, Trinidad Consulting OÜ	Interaction design of menu My Data
Morten Meyerhoff Nielsen	Head of section, Danish Agency for Digitisation	Representative of borger.dk
Marta Kari Schawlann	Senior Advisor, Agency for Public Management and e-Government (Difi), Norway	Representative of norway.no
Johannes Rund	HELP-Team, Federal Chancellery of Austria, Marketing and Communication	Representative of help.gv.at

Concerning the Estonian State Portal eesti.ee, the interviews were done with the Head of the Department of the State Portal eesti.ee Mihkel Tikk, Head of the Department of Information Society Services Development of the Ministry of Economic Affairs and Communications Janek Rozov, because these departments lead and manage processes of the eesti.ee. Also one of the executers of the project of redesigning and renewing the State Portal eesti.ee in 2008-2010 was interviewed. During that project a usability analysis was made and personalised menu point My Data developed.

Interviewees were chosen based of the fact that they would most likely be associated with the research subject – personalisation of the e-government portals. Some people who were selected for the sample did not agree to participate in the research; therefore some of the aspects of developing personalised eesti.ee might not be covered in depth with interviews.

As the second main group of the research sample was chosen all users of the Estonian State Portal eesti.ee irrespective of age, gender, geographical status nor social status. About 10 000 people per day visit the Estonian State Portal eesti.ee, therefore all Internet users can be appropriate for the survey. In 2013 eesti.ee was one of the most visited public e-service portals, 46.5% of the Internet users aged 16-74 had used it (Statistics Estonia, 2013). Basis for the sampling was all fans of eesti.ee on Facebook, all users of eesti.ee as the link to the questionnaire was published on the front page in the news section and all 1337 volunteers, who are participants of the eesti.ee testing group, the e-mail with the link to the survey was sent to them. Members of the eesti.ee testing group are not segmented users, they are not profiled or advanced users.

3.3 The Design of Expert Interviews and Survey

The study began with defining the research idea, problem and questions. First research question was approached through a theory-based overview and exploring the examples of other personalised e-government portals. In addition all three questions are answered by using qualitative and quantitative methods – expert interviews and questionnaire.

Interview questions to the representatives of the Danish, Norwegian and Austrian portal were sent by e-mail on December 22 in 2013. Additional questions were also sent, depending on the original answers. An expert interview with the representative of the Danish portal was done through Skype in February 2014. Duration of the interview was approximately 1 hour. Two expert interviews with the stakeholders of the Estonian portal were carried out in January 2014, both lasting approximately 45 minutes. The interviews were recorded, transcribed and summarised. Respondents were given the chance to read the conclusions of the interviews (Appendix 2). One expert interview was in written form, as the respondent did not have time for the meeting.

User satisfaction survey was adopted and translated from ZeGo survey (Bargas-Avila, Orsini, Vido de, & Opwis, 2010). First pilot study was conducted in order to understand if the ZeGo original survey (Figure 10) could be used in the Estonian context.

No.	Item
1	I have just used http://www.website.com/ for the following:
2	In the future, I will use http://www.website.com/ again to complete similar tasks
3	I will recommend http://www.website.com/ to others
4	On http://www.website.com/, I can quickly reach my goal
5	In my opinion, visiting the site http://www.website.com/ is pleasant
6	The design and colors used on http://www.website.com/ are appealing
7	The services of http://www.website.com/ are useful
8	The services of http://www.website.com/ appear to be complete
9	The contents found on http://www.website.com/ are written so that they are clearly understandable
10	I am very satisfied with the contents found on http://www.website.com/
11	The information found on the website http://www.website.com/ is credible
12	I know what contents to expect on http://www.website.com/
13	Compared to other websites, http://www.website.com/ is good
14	In your opinion, what could be improved on http://www.website.com/? Is anything missing on http://www.website.com/?
15	While visiting http://www.website.com/, did you encounter any difficulties? If yes, what kind of difficulties?

Figure 10. Items of the ZeGo survey second version, translated by authors (Bargas-Avila, Orsini, Vido de, & Opwis, 2010)

Questionnaire for evaluating user satisfaction with the State Portal eesti.ee mobile version was published using Google Docs Forms on 20 November 2013 and was opened until 27 November 2013; 49 people filled out the survey. None of the questions were marked as required, people did not answer to all the questions or answered all 12 items exclusively with the best or the worst item score (in these

cases, it can be assumed that the participants had no real interest in the survey). It showed that besides 5 Likert scale items, it lacked an option for “Do not wish to answer” if the person does not have an opinion about the statement.

The second pilot concerning the context of My Data was opened January 6-12, 2014. The pilot was conducted in order to get first feedback and improve the errors and misunderstandings. After the pilot study the feedback was that first question needed more options, statements number seven and eight needed revising, because the word “service” was not commonly understandable. Item number twelve was not well understandable in Estonian and it was rephrased. Based on overall feedback, the wording was simplified and made more precise. Also the pilot showed that the Google Docs Forms does not have all needed functionalities for publishing the survey in three languages, so the LimeSurvey[8] web based survey tool was chosen. Third pilot in January 12-14, 2014 was conducted in order to control the simplified wording and LimeSurvey options. Renewed survey in Estonian, Russian and English (Appendix 3) was opened for 70 days (January 14 to March 24, 2014). On January 14, 2014 a post with the link to the survey was published on eesti.ee Facebook page, 544 people saw that post and 106 people clicked on it (data from 13 April 2014). On eesti.ee front page in the news section the call to participate in the survey was published on January 29, 2014. The short news was published in Estonian and Russian, few weeks later as well in English. Questionnaire webpage link with the cover letter was sent by e-mail to the 1337 participants of the eesti.ee testing group on February 6, 2014.

After the data was collected, study continued with quantitative and qualitative content analysis and the results of it are presented in Subchapter 3.4.

3.4 Results of Expert Interviews and Survey

Data collected with interviews was divided into three main information blocks and those topics were analysed together. Analyse of the interviews was based on the theory of H. Rubin and I. Rubin (2005). At first the interview conclusions (Appendix 2)

[8] http://www.limesurvey.org/en/

were prepared. The next step was to find and understand topics, themes and concepts that are relevant for research questions. Similar concepts and themes were viewed together and summarised as follows:

- Understanding why portals were personalised.
- The main benefits of personalisation and obstacles to achieve personalised e-government portal.
- Future plans for personalising e-government portals.

Fourth version of the web survey was answered by 274 people and showed the user satisfaction with the personalised view My Data of the Estonian State Portal eesti.ee. Results of the survey were analysed based on the ZeGo principles (Bargas-Avila, de Vito, & Opwis, 2007). Results of the survey were compared with the data gathered from statistical tools to evaluate the effectiveness of personalisation and to understand if users use or follow the links that are given in personalisation.

3.4.1 Goals of Personalisation

Based on the interviews with representatives of four e-government portals it can be concluded that one similar goal of personalisation is to give users an overview of their data or easy access to relevant e-services.

Martõnjak (Estonia) described that the goal of personalised menu My Data of eesti.ee was to concentrate all information and services that are important to the user to one place. This functionality was needed because there are many services and topics in eesti.ee and for the user it is uncomfortable always to search. My Data was supposed to be a place for a user to manage and customise own data.

Meyerhoff Nielsen (Denmark) admitted the initial goal of personalised My Page on borger.dk was to give an overview of personal information and to increase transparency and access to personalised data that government has about people. For the Norwegian and the Austrian portal the goal of personalisation was to provide residence with the single point of access to e-services and gateway to all public services. Rund (Austria) described that additionally the aim was to have single point

of access with a single sign on in order to use several official procedures without any further identification or authentication.

Schawlann (Norway) stated that all governmental agencies and municipalities were supposed to make their online services available through Mypage, so it would be easier for residents to access the services, they did not need to know which agency offered the service and they only had to authenticate once to access several services. In order to personalise the portal to the individual user, a database of Mypage users from the authentication was created. Database contained information about language preferences, user settings in the portal and geographical affiliation at the municipality level.

Rozov (Estonia) admitted that besides simplifying information searching and finding the right e-service amongst many others, the goal of personalisation is to be proactive and to show the user what obligations and opportunities one has. The goal of the personalisation as well is to provide e-services to the one who needs them and make e-services understandable and accessible. To provide content that is based on the person's ability to understand – if it is the first time user or already experienced user.

Meyerhoff Nielsen agreed that the personalisation is done to make it easier for people to serve themselves online and personalisation should make the digital channel more attractive. In Danish context this is relevant, because the digital communication between the citizen and authorities and selected high volume, high frequency e-services are being made mandatory in Denmark. Meyerhoff Nielsen mentioned that objective for personalisation is that it is cost saving and efficient. Efficiency is one of the goals of personalisation concerning the Estonian State Portal as through personalisation the provision of the e-services has been optimised that it saves users' time and costs of administrating the e-services. Only Tikk (Estonia) added that the personalisation aims to lead better the provision of public service and should assist user to do the whole process of actions.

It can be concluded that for the Danish portal the goal of personalisation is mainly about giving the user overview of their data that government has about them, but as

well showing the content and services that are relevant to the user in order to make easier for people to serve themselves online. The Norwegian portal aimed to be gateway to all public services through personalisation. The Austrian personalised help.gv.at as well had the aim to have single point of access to several official procedures and services. Like other portals, Estonian portal goal is to provide better services and information for users using personalisation, but as well to lead better the provision of public services in an understandable way for the user. Exploring the goals of personalisation reveals that personalisation is comprehended differently – it is presenting information but as well provision of services. Based on understanding the personalisation the techniques used for it are as well different. Although viewed portals use presenting personalised view, customisation, explicit user profiling and adaptive system based on some version of user model, none of the portals applied user action based profiling for interest detection or recommender systems. It can be concluded that to reach the goals of personalisation better, the possible techniques for personalisation should be used, for example recommender system would help users to find interesting useful content by analysing how users navigate in e-government portal.

3.4.2 Benefits and Obstacles of Personalisation

Interviews revealed that one of the most mentioned benefits of personalised e-government portal is for agencies and authorities to have one channel for offering information and services and for users it is comfortable and easy to find information and to use services. Users do not have to be familiar with how government is structured and they can access several official procedures in one place. Rozov concluded that due to personalisation people do not have to go personally somewhere and feel somehow bad that they have to ask something and submit application to the government. Advantage of personalisation for the Estonian State Portal is if there are fewer problems reported to helpdesk and as people are searching less the traffic load inside the portal is smaller.

In the Norwegian case, Schawlann pointed out that Mypage was easy to use because one only had to login once to access many online services at the same

security level. Austria has similar concept with the benefit for the state being the increasing number of users of electronic signature (mobile and card-based) as a secure measure for identification and authentication.

In addition a personalised portal increases the numbers of users and visits to the portal help.gv.at thus resulting in an increase in page visits. Also in Estonian case both Tikk and Rozov highlighted the positive image of the portal and government overall that people have because of personalisation. Rozov stated that with using the personalisation the state could inform people about possibilities and commitments they have regarding the government. This way being proactive the government can show that cares for people and helps people to deal with different matters on right time and warns people before there are for example financial consequences.

Only Meyerhoff Nielsen mentioned that getting rid of paper is the main benefit, because paper is the most expensive part of the process.

"In the long term, the potential for real coast saving comes from process and organisational re-engineering and automation in the back-office, similarly from streamlining legislation and minimising regulations (where possible). Getting people doing things online is the first step that enables automation and increasing efficiency."

Meyerhoff Nielsen, borger.dk, Denmark

Tikk as well mentioned that benefit comes from changing the provision of governmental services better in overall. The main value he mentioned was to fulfill the purpose well for the government and the portal to be trusted as center of competence. Doing things differently and adopting personalisation gives the political and financial support.

As obstacles of personalising e-government portals representatives of Estonian and Danish portals mentioned to be mostly about changing the thinking of people and being innovative in public sector. Tikk stated that authorities have legacy of processes such as "paper thinking", people are used to doing things this way.

Rozov agreed that development of personalisation is interfered by the fear of changes and consequences. The obstacle is not even financial situation, but more the cut of finances if efficiency has been achieved. Rozov mentioned that efficient actions might conclude in budget cuts and this way excellent authorities are punished.

Meyerhoff Nielsen pointed out that one of the obstacle of personalisation can be poor usability, because people are willing to use services and interact with government online provided that the services are easy to use. In Denmark now then people are forced to interact with government mostly online, the percentage of people indicating that they want to service themselves online is falling. Other aspect has been concerns about user-friendliness and regulating by law how people have to behave.

Technical issues were mentioned as problems as well. Rozov admitted that technical capability of the eesti.ee has to be clear. In Austrian case the only obstacles are currently about how to integrate more services and official procedures on personalised portal. Rund named that expensive interfaces (because not the same portal protocols are in existence for all the procedures and portals) has to be created which is hard to do in times of decreasing budgets and financial consolidation.

Tikk stated that if people would understand the possibilities of technology how it chances life, then there would be changes in legislation. On the other hand Rozov mentioned that legally there are no obstacles to the personalised view My Data, but once it is possible to show all the information about the user, there can be the syndrome of the “Big brother” and people may start asking to remove the information. Then again Tikk pointed out that security, trust and privacy protection are better in digital world, because all the data is logged and monitored, the aim is to better see who has used the data. One of the solutions would be making the system transparent and with that to raise the trust – personal data could be combined with the data how it is used by public sector and made available for the citizens.

Concerning the Danish portal, people trust the public authorities and security problems that have been only about the access to data and similar concerns like people have had for online banking. Bigger problem is that the traditional face-to-face

service in public sector has advantages compared to the digital channel and that is why digital channel in some situation is less attractive for the user. Meyerhoff Nielsen described that users can receive “holistic” advice from call centre and citizen service centre staff, because authorities have to treat the whole case and highlight relevant issues such as other services, grants and subsidies a citizen may be entitled to. In digital channel it is difficult to have this kind of overview for the user, especially if it is digitalised individual service not the whole process of the services. Meyerhoff Nielsen described that in the digital world it is possible to know from the back-end and on individual data if the applicant for one service is entitled to another grant, but legally it is not allowed to give automatically this grant, users still have to apply.

From the developers point of view Martõnjak remembered that during the development of menu My Data it was complicated to find the right name for it. The initial idea was to find later the better name, but it stayed as My Data. In Norwegian case certain obstacles could not be highlighted. As Mypage was pioneering project, obviously there were obstacles to be handled along the way, but Schawlann could not name any serious obstacles neither legal, financial, technical nor confidence wise.

Denmark sees the benefit of personalisation and forcing digital communication in saving financially. For Norway the main advantage was from the user-friendly side – users could access services in one place and logging in once. Same for the Austrian portal as single point of access to several official services is easy for users and for organisation the benefit comes from having an increasing number of users. Personalisation of the Estonian State Portal benefits from the smaller number of user problems, the positive image that people have about the portal and government overall and in addition changing the provision of public services.

Main obstacles of personalisation for Denmark are how to personalise the whole process in a user-friendly way not only having good individual e-services, one of the obstacles for providing personalised process digitally are legal issues. As the Norwegian personalised portal Mypage was developed in 2006 and was not developed further, it is not possible to mention the obstacles concerning that project.

In Austrian case the main obstacle is for technical and financial reasons about integrating more services on personalised portal. Personalising the Estonian State Portal eesti.ee can be difficult because of process-based obstacles, technical capability and fear of consequences that can be budget cuts if the saving from personalisation is significant.

3.4.3 Future of Personalisation

All of the portals besides the Norwegian one will continue with developing the personalisation of the portal further. The Norwegian authorities have no plans for a new personalised Mypage. Presenting personal information under subsection My Personal Information was replaced by three individual online services in the beginning of April 2014. Services are managed by the public agencies responsible for them and Schawlann stated that this is in keeping with the format for presenting all online services on norway.no.

The Austrian help.gv.at is working on a vision (Figure 11) to provide personalised portal as one single point of access for official procedures and to other portals that need the unique identification and authentication.

Figure 11. The vision of personalised help.gv.at as personalised one single point of access (J. Rund, personal communication, January 14, 2014)

Rund mentioned there could be presented private applications like online banking, insurance platforms, social media portals, e-commerce platforms, partnership portals and much more. Help.gv.at provides technical applications that partners can integrate their services. The main aim for future is to provide users a comfortable way of access besides services on help.gv.at to other services and portals with only on possibility of identification and authentication. In this case the users do not have to know many several and different user-IDs and passwords, but can use Austrian Electronic Signature for that.

In the Danish case, it is possible to personalise the portal more and the e-services can be tailored to the user based on the unique identifiers and tagging the service combining the service ID with the authority ID and with private sector developer ID. With the unique ID like digital signature, it is possible for the system to know the user's unique social number and to provide them with the services relevant to the given municipality, gender, certain age group, family status, etc. There is possibility to build user profile based on that information and match different IDs, data from different registries and relations.

Managers of the portal borger.dk are analysing their approach of personalisation, whether the current My Page is needed or the whole portal should be personalised. That means if the person logs in, the portal is personalised based on the personal information, the services and the content are tailored for the user based on the information there is about certain user. Meyerhoff Nielsen imagined that in portal could be created a message flow that is tailored to the individual user of the portal, as all paper-based letters will be in digital post box and it is mandatory starting from November in 2014. The digital post box should pop up and lead to other services or portal functions.

As Denmark is working on using digital by default concept, the need is to provide users more with location specific content and getting more authorities to provide their information and e-services on borger.dk. In addition, one of the projects is about user-friendliness approach and quality insurance. Meyerhoff Nielsen described that new service for portal must be developed so they are responsive and used on small

screens besides tablet and big screens. To insure quality there is HTML-guide for the development of integration solutions for borger.dk, and all new or redeveloped mandatory e-services must fulfil 24 minimum requirements for user-friendliness and accessibility of e-services.

In Estonian case, the future of personalisation is seen in simplifying more the usage of e-services and the governmental business processes should support that. Tikk described the vision that based on personalisation: there is the possibility to provide the user with the e-service they need, even use the automation provision of the services that in Danish case are not possible at the moment because of legal issues.

Basically the process is that the user logs in, the system controls what kind of data there is and based on that possibilities are shown to the user. Then again, to show the whole process to the user it requires changes in architecture, but the automation of e-service, whilst requiring a large capital investment of taxpayer money to set up, should create future savings in the time, efficiency and administration of government resources. Both Tikk and Rozov pointed out the need for the user to authorise someone else to use the e-service on behalf of the user, especially because there are 200 000 people, who are not using any public service neither online or using any other channels.

“Besides the user view, there should be possibility to do actions online behalf of a child, parent or someone else who cannot do it online or is not willing to. Besides for the official should be possibility to do actions online behalf of someone, especially for those who do not want or cannot use services online.”

Rozov, Estonian Ministry of Economic Affairs and Communications

As well Tikk mentioned that personalisation should consider the devices like mobile phones, digital-TV, voice control systems and even car computers. Rozov added that personalisation would mean providing the same service and information as well in some other environment that users are using, not only the Estonian State Portal eesti.ee. In next two years the main development is seen besides presenting

information on personal view My Data to provide consuming services on the same view.

It can be concluded that Estonian and Danish portal have similar plans for the future personalisation as both portals aim to present the services and content that is tailored to the specific user based on already existing information in the system. The Austrian vision is having a gateway to services and other portals and Norway has the similar idea to present all online services on norway.no.

3.4.4 Exploring Users Satisfaction with the Provided Personalisation in eesti.ee

A web-based survey used to measure user satisfaction with the Estonian State Portal eesti.ee personal view My Data was during the 70 days of data collection period opened for 596 times, 274 people answered to the questionnaire, seven of the questionnaires were partially filled, 315 questionnaires were empty. In Estonian answered 224 people, 47 people answered in Russian and three in English. Small number of questionnaires filled in English is probably because of the user group who are mostly foreigners; even if they have possibility to log in eesti.ee there is not much information about them in Estonian registers and on personal view My Data. The average time that was spent for filling in the questionnaire was approximately 6 minutes.

One of the reasons why there were more incomplete than completed answers could be because the LimeSurvey tool did not allow the possibility to open the link in new window. That means that if the user opened the survey, chose the language and pressed the “Next” button and after that opened the link of My Data that was in the questionnaire, the link opened in the same window and the browser back button did not open already started survey. The LimeSurvey recorded those surveys as incomplete ones. Google Analytics of the Estonian State Portal eesti.ee shows that during the data collection the LimeSurvey was a traffic source in 167 cases.

Before the data analysis was made, three participants had to be excluded and the data analyse was done based on 271 answers. One response was discarded

because the “Neither agree nor disagree” option had been chosen for all 12 items and the optional fields were left empty. In this case, it can be assumed that the participant had no real interest in the survey. One response was excluded, because the “Do not wish to answer” option had been chosen for more than half of the 11 items.

In ZeGo survey authors excluded participants, who had answered all items exclusively with the best or worst option (Bargas-Avila, Orsini, Vido de, & Opwis, 2010); the same principle was followed. None of the participants answered exclusively all 12 items with the worst option. One of the participants was excluded, because all 12 items exclusively were answered with the best option and the additional fields were empty.

There were three people, who had answered all 12 items exclusively with the best option, but they were not excluded because they had answered to the item 14, that was open-ended question: “In your opinion, what could be improved on the personal view My data? Is anything missing on the personal view My Data?” It can be assumed that because participants answered the item 14, they had interest in the survey and they really evaluated 12 items with the best option, as it was their real opinion.

Although the goal of the survey was to measure user satisfaction with the personalised view My Data, the results of the survey cannot be generalised as the opinion of all of the users of eesti.ee, because the sample of survey was not representative as with the survey was not collect information about the location of users, their age nor gender. Besides, the survey was targeted to the users on eesti.ee Facebook site and not all people who have used eesti.ee are users of Facebook.

Results of the survey reveal that the majority, 78% of the respondents stated they have used the personalised view My Data for checking their data (marked 212 times) and only 2% (5) of the respondents had checked the vaccination date of the pet. As Figure 12 shows, 56% (151) of the respondents had checked the number and validity of their documents and 48% (131) had forwarded their @eesti.ee address using

personalised view My Data. 37% (100) of the respondents mentioned ordering European Health Insurance card, less were named checking validity of car insurance (27%), changing residence (25%) and saving a mobile number (23%). Besides the least mentioned pet information, only 17% (46) stated to have used personalised view My Data for downloading the document photo. Here is important to consider that this functionality was not all the time available during the survey period and that can affect this option marked less.

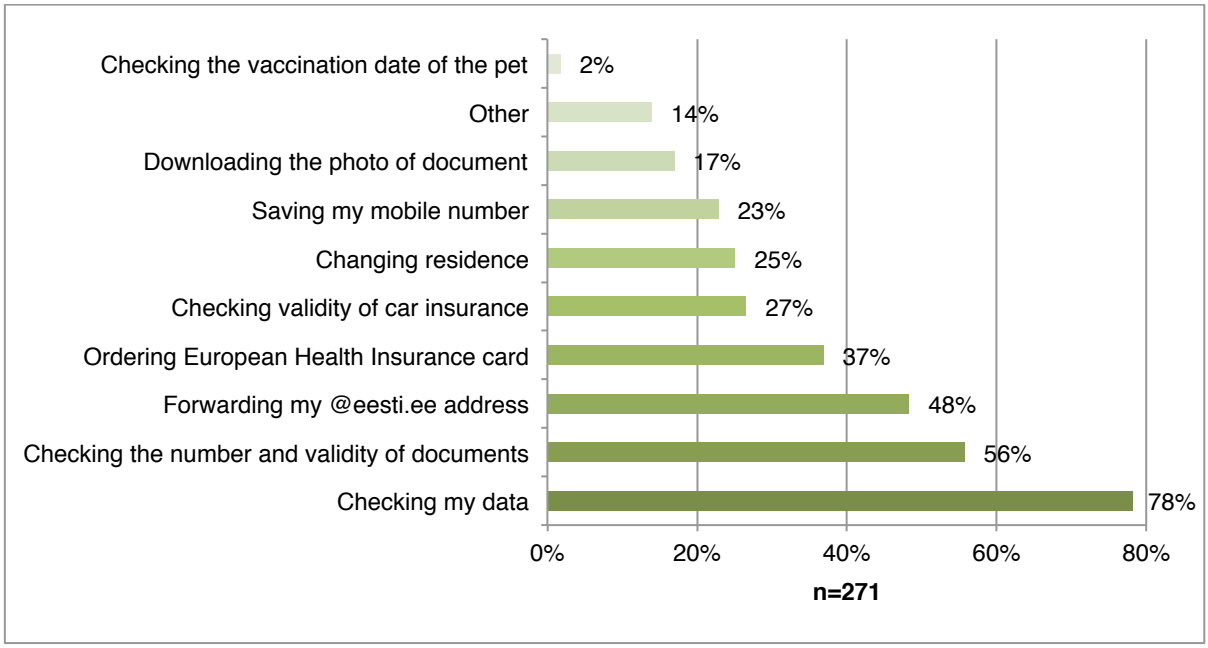

Figure 12. How the respondents of the survey have used the Estonian State Portal eesti.ee personalised view My Data

As the name of the menu My Data indicates, users use the personal view mostly to check if their current situation in front of the government is fair or there is something they should be aware of. Using a specific e-service depends on the person and profile, not all the users want to change the residence at the same time or they have cars. Checking the vaccination date of the pet can be the least mentioned actions, because not all the users have pets or they are not used to check that information form the State Portal. It is clear that personalised view gives an access to several e-services, but it should be considered to explore more how to present users exactly the information they would need.

14% of all the respondents (38 times) marked other action that they have done using the personalised view My Data. The explanations of “other” were quantified after a qualitative analysis. The quantified data shows (Figure 13) that 29% (11) of the respondents who had marked other option had not used the personalised view before, they did not know about it before or there has been no need to use it. Then again 34% (13) mentioned other services, provided in eesti.ee, but not visible in My Data or information that they were looking for. One of the most mentioned services 24% (9) was prescription. It can be assumed that the users have been looking for their prescription in menu My Data, although at that time the prescription data was not yet visible there. Interest to see what kind of data is there in My Data was a motivation for usage for 5% (2) of the respondents and 8% (3) participants wrote that there was not much information about them in the personalised view My Data. Usage of personalised view My Data could be used for better profiling users in order to understand their real activities and evaluating if the presented information is really useful for them.

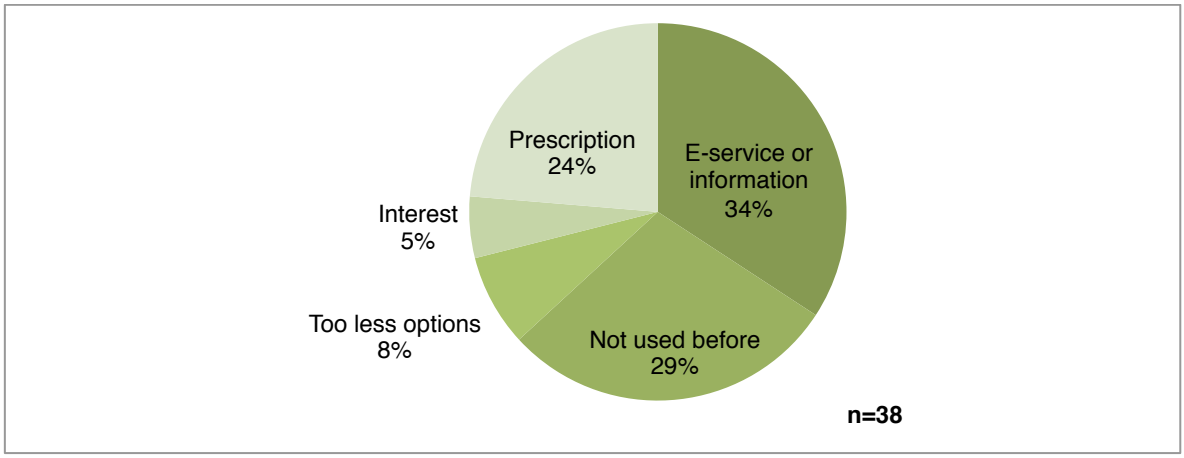

Figure 13. Other options marked in survey on usage of personalised view My Data

The overall satisfaction value is calculated with 10 items (questions 2-10 and 12) Item number 11 (“The information found on the eesti.ee personal view My Data is credible”), it is a separate question for measuring users trust. Item number 13 (“Please evaluate on scale 1-5 quality of the personal view My Data compared to other services on eesti.ee”) was not included in calculating user satisfaction as the Estonian State Portal eesti.ee provides more than 200 public sector e-services than

the comparison in this point is not correct. As the item 13 was not compulsory question, there were 13 missing values.

The survey showed that the overall satisfaction with the Estonian State Portal eesti.ee personalised view My Data is fairly high, with the mean value of 3.9 (rather satisfied) on the scale of 5. Figure 14 shows the overall user satisfaction of all 271 participants. Detailed results reveal that approximately 75% of cases users were satisfied or rather satisfied, 14% remained neutral and 11% were somewhat unsatisfied or unsatisfied. With this survey it is not possible to determine the exact reason for this satisfaction value, but it should be addressed with the further research. Although it is possible to analyse every question separately, it should considered, that the State Portal is complicated system with hundreds of pages and e-services and the usage of the portal can affect the satisfaction with personalised view My Data.

These items that construct the overall user satisfaction reveal important feedback that would be needed to evaluate the smaller aspects of personalisation in order to improve the personalised action in the future. Questions could be answered with 5-point Likert scale there low values represent dissatisfaction and high values imply to satisfaction. Measuring the satisfaction of every item took into consideration that those users who selected option “Do not wish to answer” were excluded from the calculation of the mean value.

It appears (Figure 14) that the users would most likely use the personalised view My Data in the future (item 2); the mean value was highest compared to other items – 4.3 (agree). As well participants of the survey evaluated with the mean value 4.1 (agree), that they would recommend the Estonian State Portal eesti.ee personalised view My Data to others (item 3), but then again reaching the goal (item 4) had a lower mean with the value of 3.8.

It can be assumed that using the personalised view in future and recommending it to others depends on situation and need, but defining the goal of using the personalised view is more complex for the user, but should be clear for the organisation. Then again even if the user has defined the goal and reaching it is complicated and takes

time, there is a need to explore what is the reason for it and if it is about the usability or information architecture, where should be improvements made.

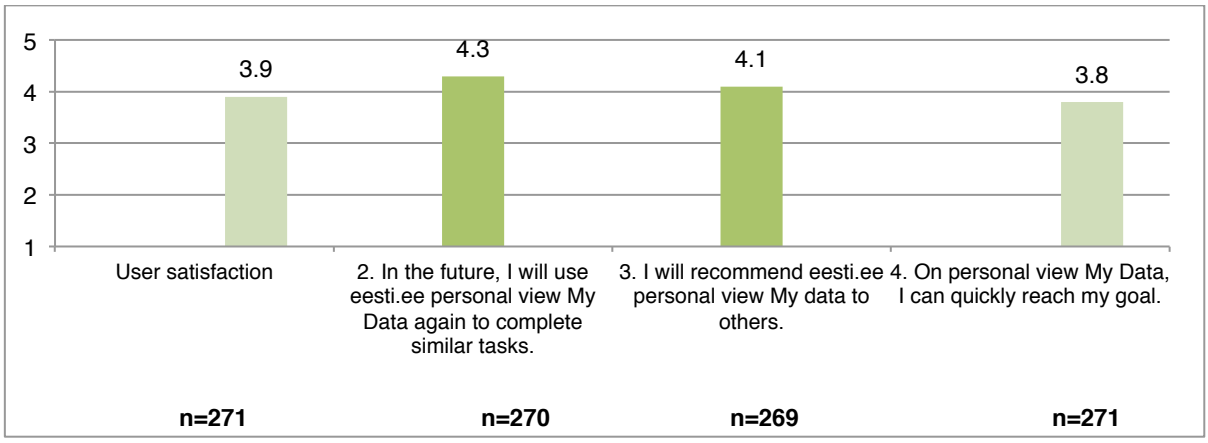

Figure 14. Total user satisfaction and satisfaction with the items 2-4

Appearance (item 5) and design (item 6) of eesti.ee personal view My Data are as well evaluated to be fairly good, even with the design and colours users are more satisfied as the mean value is 3.9 (Figure 15).

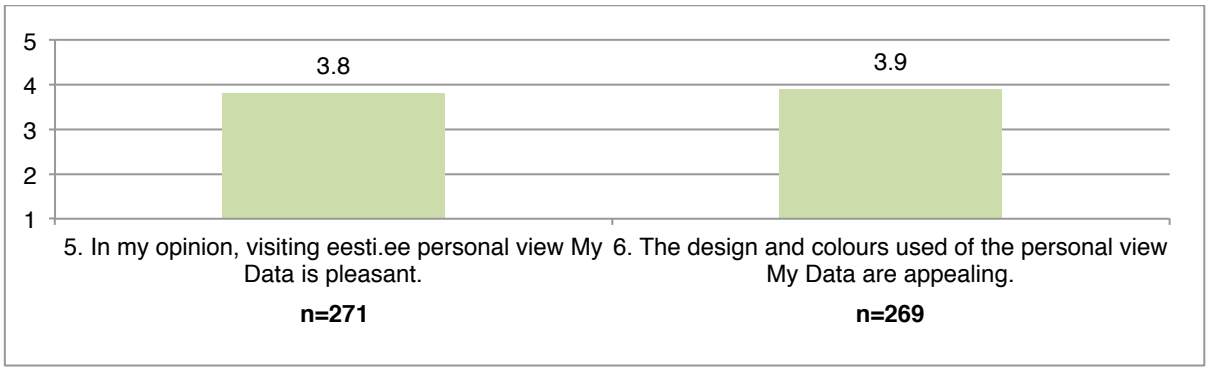

Figure 15. User satisfaction with the appearance and design (items 5-6) of personal view My Data

Still the results indicates that to provide better user experience, the appearance and design should be improved, because that is well notable to users and good solutions are always well accepted and evaluated by users. Although design is a subjective matter, pleasant and good design can have an impact on usability but as well it can affect general opinion about the website. Small design improvements can improve usability and user experience.

As the usability principles should be required for the personalised portal, users felt that showing information this way was useful (item 7) with the mean value of 4.1 (Figure 16), but with clear indication that the personalised view should provide users with more details. Item 8 ("The overview of my data of the personal view My Data appear to be detailed enough) had a mean value 3.6 and clearly there is more information about users in different state registers and could be shown to the user. This result is the addition to the expert interviews that users want even more information but it should be explored more what kind of information is most relevant and what is the best way to present it.

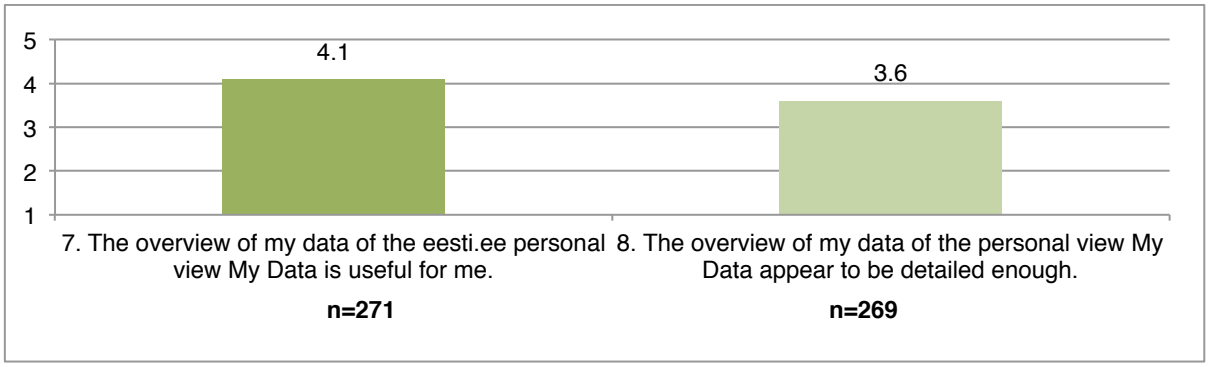

Figure 16. Satisfactions with the data overview (items 7-8) of the personal view My Data

As one of the aspects of personalisation is the content, it could be improved more and were evaluated with rather low satisfaction. As Figure 17 illustrates, the information on personalised view My Data could be better understandable (item 9), that would make users more satisfied (item 10) and they would know what contents to expect (item 12).

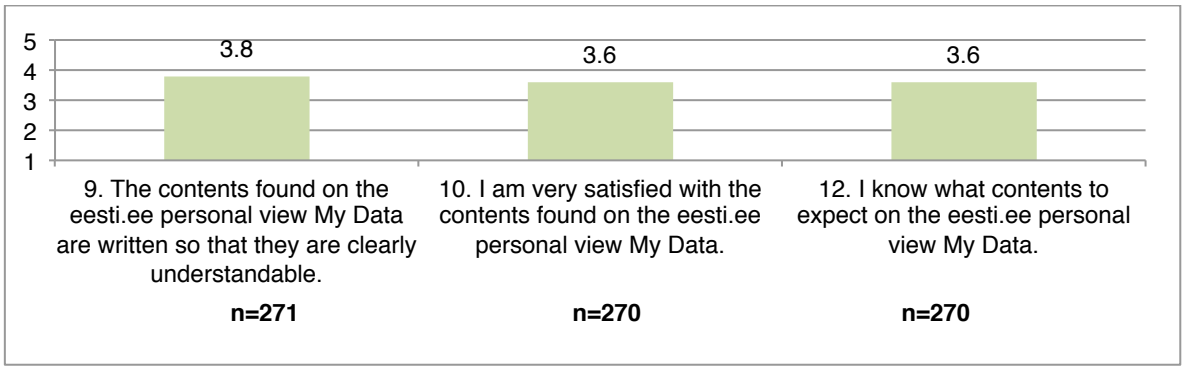

Figure 17. Satisfaction with the contents found (items 9-10, 12) on the personal view My Data

Having a clear language for all users is a usability issue that is mostly noticed as important topic by e-commerce sites, but the communication between the citizen and government has remained official and complicated, then again clear communication is important to make the website understandable for all users.

Users evaluated, that they are rather satisfied (mean value of 4.0) with the personal view compared to similar services on eesti.ee. Results of this item are calculated based on 95% of the participants as there were 13 missing values. Then again here the comparison is difficult to make, because eesti.ee has more than 200 e-services.

If users encounter problems on any website, this usually leads to unsatisfied users. To explore this connection, with the item 15 it was asked if users encountered problems while using the Estonian State Portal personalised view My Data. The results show that 42% (114) of participants wrote something as answering to the item 15, then again 58% (156) of participants left the open text field empty. The answers of problems were quantified after a qualitative analysis and it showed that 29% (78) of participants of the survey actually reported not to have encountered problems. Then again 13% (36) of participants indeed had problems (Figure 18) during the use of the personalised view My Data or during the visit to the Estonian State Portal eesti.ee.

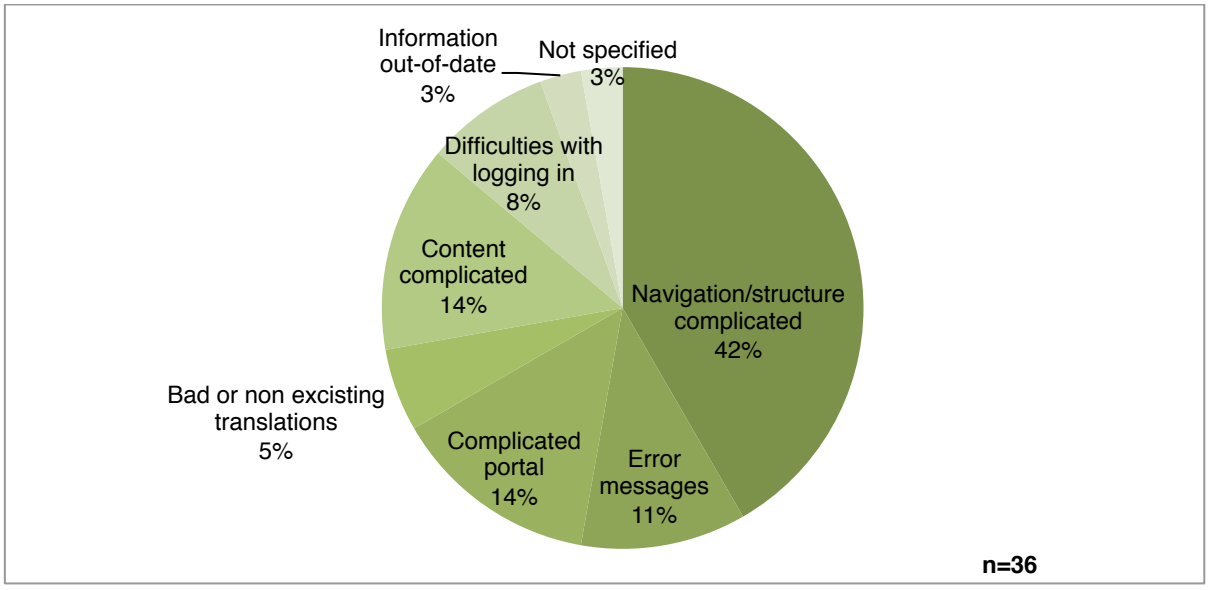

Figure 18. Problems participants encountered while using the personalised view My Data and the Estonian State Portal eesti.ee

The problem analysis clearly shows (Figure 18) that 42% (15) of users who encountered problems mentioned that the navigation and structure is complicated and it is difficult to find the needed information. The top problems mentioned are mainly related with the Estonian State Portal eesti.ee overall and not only about the personal view My Data.

The terms and language used was considered complicated by 14% (5) of the respondents, 11% (4) of the participants complained if they saw too often error messages, 8% (3 participants) had troubles with logging in the portal and 14% (5 respondents) considered the portal overall to be too complicated to understand and should made more simple.

The minor problems mentioned were related to bad or non-existing translations (2 respondents) and information being out-of-data was mentioned one time. One participant reported to encounter a problem, but did not explain what it was exactly and one participant mentioned the problems the questionnaire had, for example opening the link in the same window.

Although the existing personalised view seem to provide the necessary information, but finding the information seems to be the main problem. This indicates the importance of developing user-friendly information architecture that considers users' needs, such as clear language and translations and up-to-date information.

Users who experienced problems rated their overall satisfaction with the personalised view My Data significantly lower (3.3 out of 5) than was the satisfaction of 87% (235) of participants (mean value 3.9 out of 5) who did not state to have encountered problems. Analysing the data of the participants who had some problems shows that those users are somewhat satisfied with few evaluated aspects expressing the discomfort with satisfaction values of single items up to one scale-point lower, but they would still use the personalised view My Data (mean value of 4.1) and they would recommend it to others (mean value of 3.7).

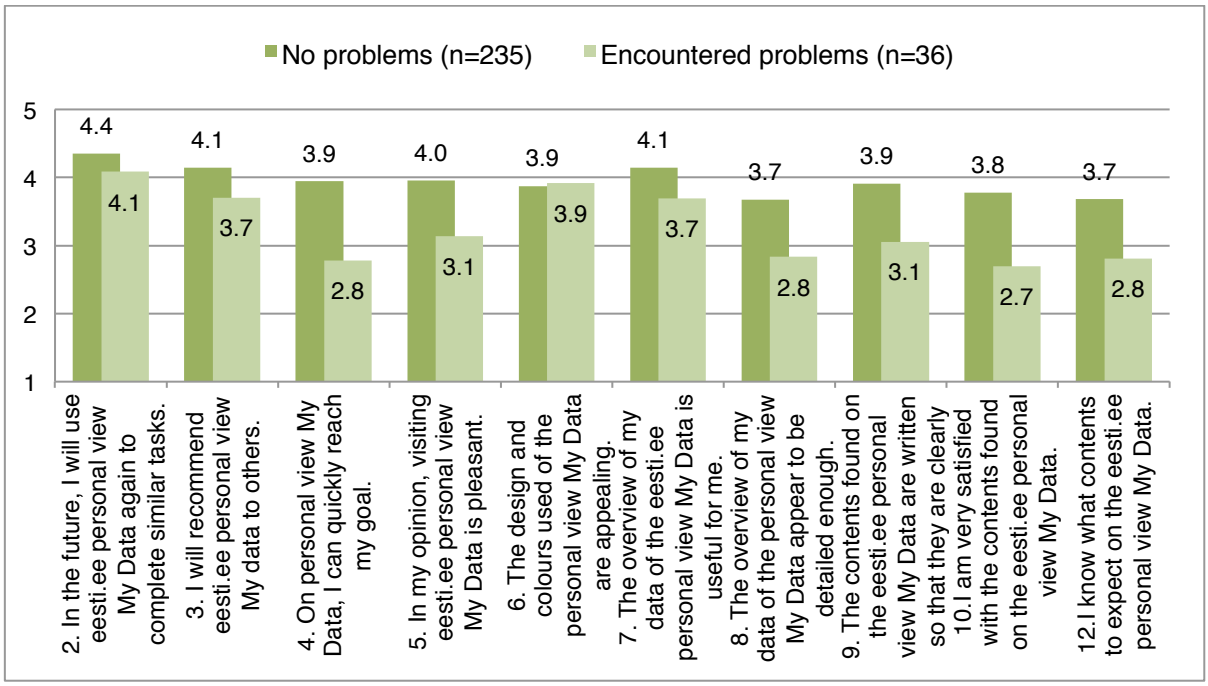

Figure 19. Influence of problems using personalised view My Data on user satisfaction

As the Figure 19 shows, the users who had problems evaluate being rather unsatisfied with reaching the goal (the mean value if 2.8), the overview of data (2.8) and contents (2.7). This is similar with the problems that users reported to have as the navigation and structure problems can make it difficult to reach the goal. Survey results reveal that the users who encountered problems are rather unsatisfied or neutral with the aspects they mentioned as problems – navigation, structure, detailed information and content. Therefore solving the problems would raise the satisfaction with different parts of personalisation.

Crucial part of the personalisation both for the users and developers is that users perceive the presented information trustworthy, because good personalisation as well can generate trust. To explore this the users were asked to rate the credibility of the information on personalised view My Data and credibility value of it is 4.1. This could mean that users trust the Estonian State Portal eesti.ee, but there is room for improvements that users would have more confidence in using the portal.

In order to understand how to improve the contents and services on My Data, it is needed to know what the users really want. On the improvements participants could express the feedback on free entry field, it was quantified after a qualitative analysis. The quantified data shows that 54% (145) of the participants left the field empty or

wrote that they were satisfied with the view My Data or had nothing to add (17% named it). Three of the comments did not answer to the question ("In your opinion, what could be improved on the personal view My Data? Is anything missing on the personal view My Data?"). 29% of the participants indeed named the improvements they desired for better personalisation.

The need for more information or easy access to other services or systems is the main topic for the participants. Figure 20 shows that 64% (50) of the respondents who mentioned improvements named that information and access should be improved. The participants explicitly communicated to have even more personal information or possibility to do actions on the personal view My Data. For example users wanted to have an overview of their children's and family members data, health and educational information, data about the property and from the personal view My Data to start using or use e-services, for example applying for a new passport.

As complicated navigation and structure was most mentioned problem, then one of the desired improvements for 10% (8) of the respondents was the navigation and structure, usability and design are one of the most desired improvements as 12% (9) of the respondents mentioned it.

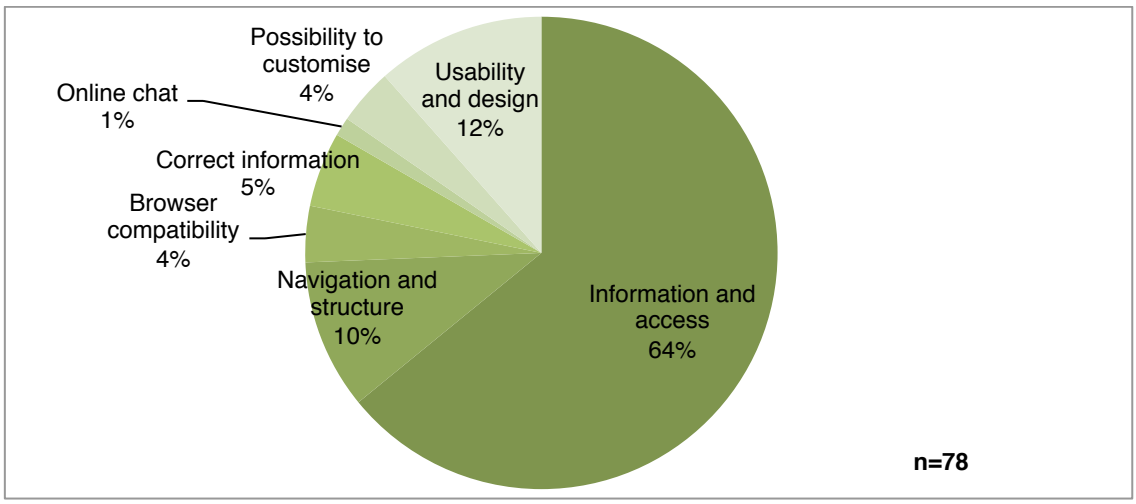

Figure 20. Improvements the users desired

Some feedback indicates that the personal view should allow customising it (4%) to the users needs, 5% (4) of participants named that there should be understandable

and all times correct information, 4% (3) desired for compatibility of the Estonian State Portal eesti.ee with all browsers and one user (1%) wished to have online chat.

It can be concluded that in overall users are rather satisfied with the personalisation offered by the Estonian State Portal eesti.ee. Then again overcoming the occurring problems, such as improving the navigation and structure, making the content easy and understandable for users, showing users more of their personal information and improving the interaction would make the user experience better and would improve the overall user satisfaction. As the participants of the survey mentioned the main problem they had was because of complicated navigation and structure and it was one of the most named needed improvements as well.

Survey items concerning the overview of information and contents were evaluated lower than other items; it is with reference to the wished improvement to have even more information and access to other e-services that would be relevant and personalised to the specific user. After the problems have been solved and improvements made, the survey should be repeated to evaluate the impact of improvements on user satisfaction.

3.4.5 Estimating the Effectiveness of Personalisation

In order to estimate if the personalised eesti.ee view has been effective, an analysis of users' actions was done based on the data of Google Analytics. Although users have the possibility not to let Google Analytics store their information and the data not might be totally accurate, the Google Analytics data shows the main trends of users' not exact numbers. Client-side data collection was chosen for analysis because Google Analytics presents clearly if users use or follow the links that are presented to them in the personalised view My Data. Web log files again show all the users of the certain services no matter how they navigated to the service and the data in this point is not accurate. Analysing the log files of the Estonian State Portal eesti.ee was not possible because of the technical complexity that the system has and because the Estonian Information System Authority as the owner of the portal is currently working out the best way how to analyse log files in order to get the most accurate result.

Results of the user satisfaction survey showed that mostly the personalised view My Data have been used for checking data in overall. Explicit data gathered with the survey was compared with implicit data gathered with client-side data collection. Google Analytics showed that since August 15, 2013, when the personalised view was launched, until 24 March 2014; the My Data page had altogether more than 427 000 unique page views in all three languages that are 3.6% of all unique page views during that period. The most was used the Estonian version of My Data and the least the English version that had more than 1900 unique page views. The Estonian version of My Data is third most visited page of the Estonian State Portal eesti.ee. Analysis of Google Analytics results was based on the personalised view My Data web address that is accessible only for the logged in users as for the log in page the Estonian State Portal eesti.ee has a different web address.

Like the survey showed users mostly view data about themselves and check the validity and number of the documents then using the personal view My Data. Comparison of explicit data and implicit data on the usage of My Data provides more insights. The data about how users follow the links shows that the most commonly in Estonian My Data in the time period of August 15, 2013 until March 24, 2014 the link to check the car insurance was followed (Figure 21), but in Russian version the link to view more information about the ID-card and passport was followed.

Different activity can be explained by the fact that in the first version of the developed My Data there was not accurate information about the car insurance ending date just the text “Check validity” and under the section of the passport and ID-card was not shown the living permit and foreigners passport data. Then again in the English version of My Data the most followed link was to change the residence. This can also be related to the fact that based on the language, the users have different needs for information that is relevant to them and should be presented using the personalisation. Although almost half of the participants of the survey named they have used personalised view My Data for forwarding their @eesti.ee address, statistics shows that more user followed the link to save their mobile number instead.

As Figure 21 shows, the third most mentioned activity in the survey is ordering the European Health Insurance card, Google Analytics shows that this is one of the most visited links that people followed from My Data in Estonian and Russian version. One of the reasons why it is so, can be that if the user does not have a valid European Health Insurance card, information presented visually in attention drawing way, it is displayed text “Order new” and the user can do it after following the link.

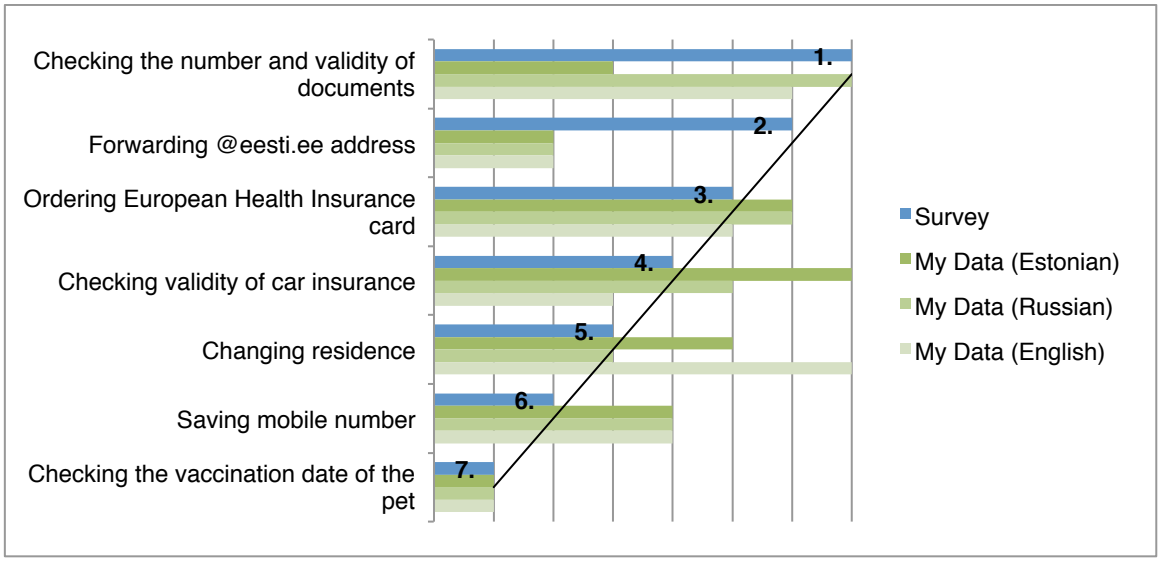

Figure 21. Top seven activities and links followed according to survey and Google Analytics analysis of Estonian, Russian and English versions of My Data, comparison of explicit and implicit data on the usage of My Data

Viewing the information about a pet is indeed one of the least followed links according to the survey, but as well in three different language versions of My Data. That can be also because not yet all the pets in Estonia are registered in same registry and there is no data about the pets shown to users.

After the launch of the personalised view My Data, the visits to the submenus of the menu My Data has raised. For example the features of viewing used services on eesti.ee and favorite links, have been visited significantly more after the launch on personalised view in 15 August 2013. It can be because of the overall visits of eesti.ee have slightly risen, the menu My Data has gotten more attention and other authorities have linked to it on their websites, in addition like in survey few people who mentioned usability and design changes as improvements, that they had expected something else under the names “My services” and “My links”. Like

Martõnjak in expert interview mentioned, it was complicated to find the right names for menu points so the temporary names stayed and were not changed later on. Therefor the language and terms have an important role on user actions.

Figure 22 shows that following the links to view used services has been more popular in all three versions of My Data than viewing more information about the pet. The menu point “My services” is the fourth most popular links followed in Estonian version and the fifth in the Russian and the English version of personalised view My Data. Unfortunately there is no accurate data to analyse how the menu point “My services” was followed before the launch of the personalised view My Data.

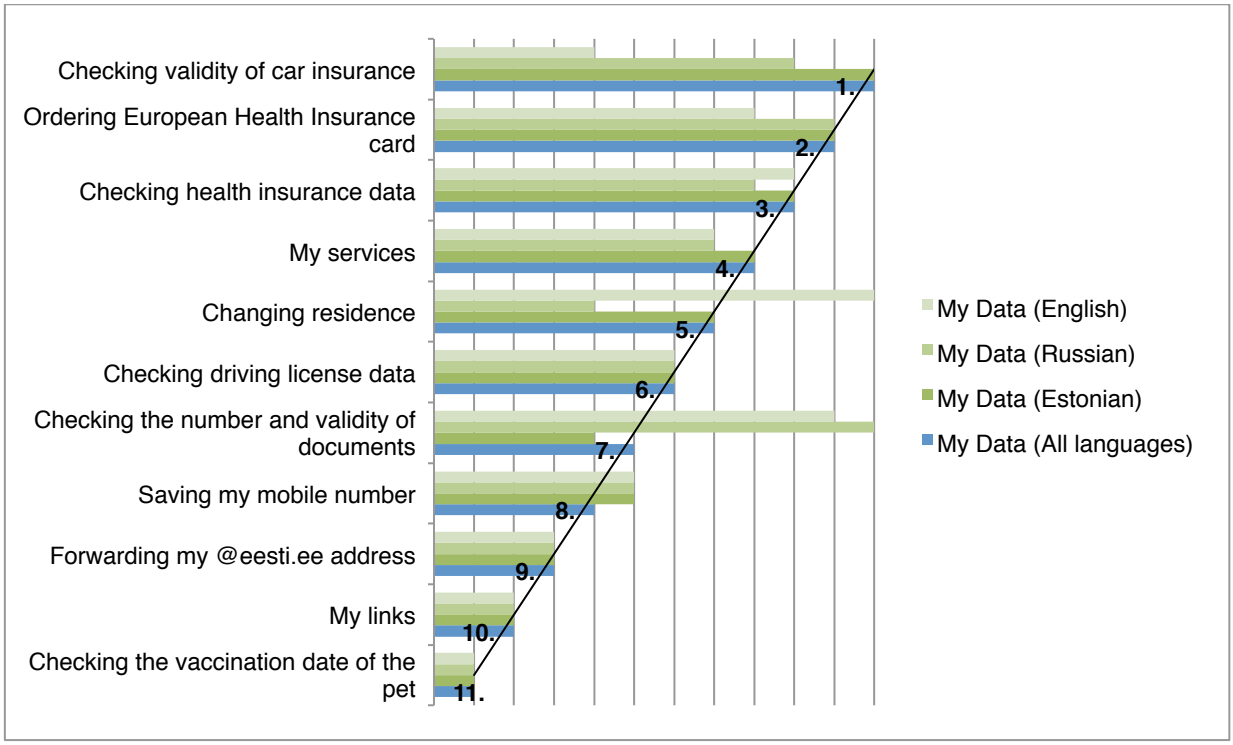

Figure 22. Top eleven links followed from the personal view My Data according to Google Analytics, implicit data on the usage

Compared to the options presented in the survey, from the personalised view My Data it is possible to follow the links to see more information about health insurance and drivers’ licenses. All the possible options were not presented in the survey and therefore analyse of the data behind the clicks has to be done separately.

According to the Google Analytics results in the time period of 15.08.2013-24.03.2014, viewing the information about health insurance was the third most

followed links in Estonian and English version of the personalised My Data and the fourth in Russian version, driving license information was on the sixth ranking in all versions. That is also because most of the users have ID-card or passport and the state provided health insurance, but not always people have a driver's license. Overall link following ranking is slightly different than taken all language versions separately. That indicates usage differences that can be for example based on language, location or some other character.

An analysis of the data registered shows that the personal view My Data has been taken up by users. They follow the links that are given to them in personalisation, although the results indicate that by different users, such as the ones who use the Estonian Portal eesti.ee in Estonian, English or Russian, have different requirements and their behaviour is not the same. In order to understand if and how users follow the links, the owners of the Estonian State Portal eesti.ee should analyse the personalised view My Data in future and compare if the users behaviour has changed. Comparing the data from different time periods would allow to have an overview of trends and to understand if the actions by users change in the terms of following the personalisation action and how the personalisation could be improved even more.

3.5 Suggestions for Personalising the Estonian State Portal eesti.ee in the Future

Concerning the literature about personalisation, examples of personalising e-government portals, interviews with the owners and managers of the e-government portals, user feedback and registered data, it is clear that the Estonian State Portal eesti.ee should continue developing and improving the personalised view My Data. Furthermore the personalisation should be adjusted to the portal overall. Personalisation should not be limited only to the possibility of having an overview of information from different registries, but the portal should also adapt to the user, provide more guidance, and prevent being lost in the middle of information.

Like the participants of the survey pointed out most of the problems they had with navigation, structure and finding what they were looking for. Preventing this problem, the Danish and the Austrian portal personalise the portal based on the users address. A similar solution should be used as well personalising the Estonian State Portal eesti.ee – for logged in users should be presented only the e-services and information that are relevant based on the address, family status, recent life event (for example birth of the child) and similar information which already exist about the user in different registries.

The Estonian State Portal eesti.ee should tailor the content to the specific user and should predict what services users want to do online. One of the possibilities can be using the recommender systems based on the main activities of users or by adaptive systems that would present the portal based on user behaviour patterns on the website. The portal should be more proactive in the terms of providing users with more information in one view than it has today, but as well reminding users of very important information. For example, presenting the information that the user should know or the e-service that is for applying the benefit that the user is entitled to. Similar to the experience of the developers of borger.dk has shown it is questionable if the e-government portal like it is today should present the individual service. The approach of presenting process instead of one e-service should be explored more.

Although with the design and usability of the personalised view My Data the participants of the survey were rather satisfied, many encountered problems and wished improvements to emphasise the need to pay attention more on user-friendliness and clear content, understandable translations, usability and design. Similarly registered data showed that because of inaccurate wording (“My services”), users had an attention to something that was not part of initial personalisation action.

Besides the personal overview of information (My Data view), there should be the possibility to have a similar overview about children, other family members and companies. The Danish portal borger.dk My Page is using similar solution, the participants of the survey wished this kind of overview and this idea for the future was mentioned in expert interviews. One of the improvements that should be done is

adding actions in one view instead of forwarding the user to the next page through a link. That means if there is some information presented which requires the user to fill in a form, this form could be filled in without leaving the personal view but fixing the information in one page. Personalisation should allow access to other systems or portals. The Austrian portal has adapted this solution, but for the Estonian State Portal eesti.ee there are more systems and other portals that require single point of access.

Personalisation should consider even more the usage differences. For example, the registered data about the followed links of the personalised view My Data showed that users using portal in Estonian, Russian or English have slightly different behaviour and need for information. Of course there are differences based on other characteristics and it should be considered that the user behaviour changes in time. That is why, it is necessary to fix the problems that the participants of the survey encountered and to improve the personalised view My Data as the users requested. Modified ZeGo survey proved to be beneficial to evaluate the user satisfaction, but it should be repeated over time and the results together with the user actions should be analysed constantly. Only that would allow evaluating the effectiveness of personalisation and it improvements.

Shortly the suggestions for personalising the Estonian State Portal eesti.ee in future are as follows:

- Personalise the whole portal presenting logged in users the content based on their data, needs and different user behaviour. The possibility of using the recommender and adaptive system should be explored more.
- Provide users with personalised overview about their children and other family members (Figure 23). Develop a personal overview and similar profile about companies as well. Allow users to customise their personal view.

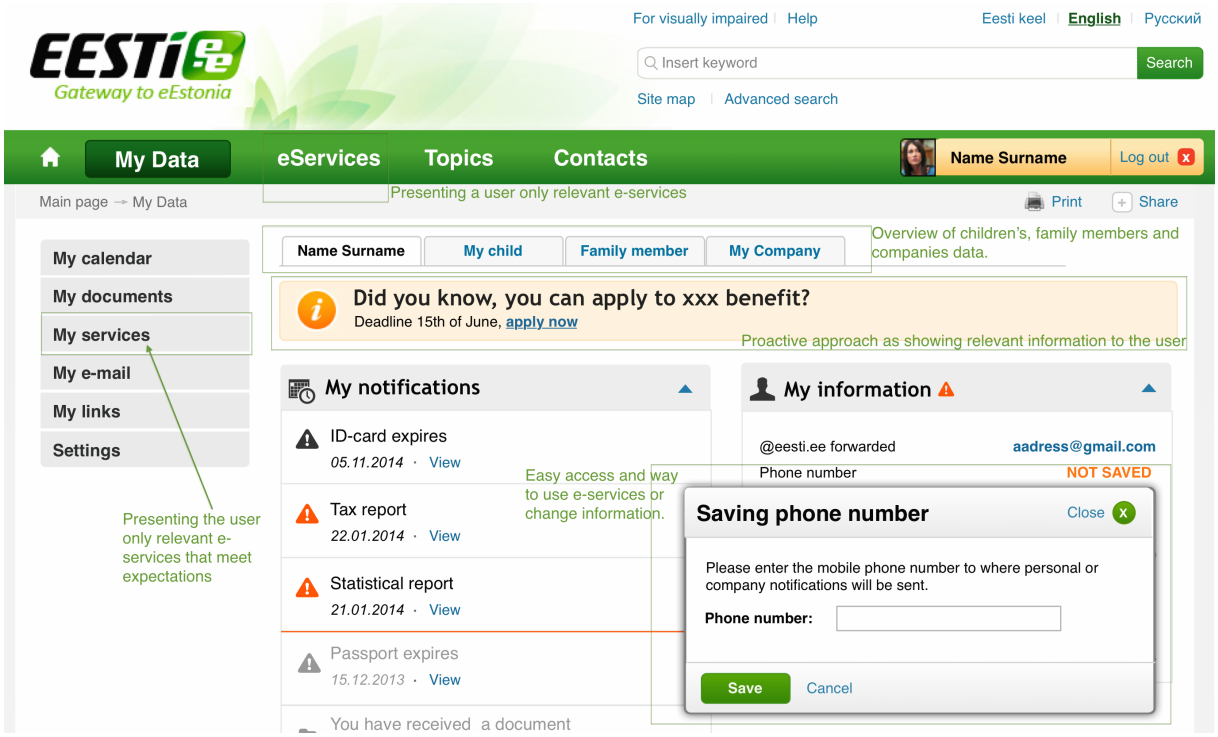

Figure 23. Changes suggested for the personalisation of the Estonian State Portal eesti.ee

- Present the process of e-services instead of individual services in a more proactive way. Add more automation into processes. For example, if possible and supported by legislation, automatically provide users with the e-service (e.g. grant), which they are entitled to. Leave the user possibility to opt-out different actions.
- Provide users with more guidance, information that matches the users, for example considering the needs of users based on their gender, location, language etc. Provide easy access to other systems and portals.
- Fix the problems mentioned in the survey and implement requested improvements.
- Improve the usability and design considering user feedback.
- Consider the usage of different devices and based on that analyse and add possible user-friendly solutions.
- Measure the user satisfaction, to compare and to analyse the user behaviour constantly.

In the future the personalisation of the Estonian State Portal eesti.ee should besides fixing problems and improving the current solution, develop the solutions for

personalising the whole portal for logged in users in order to provide user-friendly and easy content presentation. In particular it is important to evaluate separately the efficiency of personalisation to users and organisation in overall. Provision of public services online in a personalised way requires the change of business and organisational processes as well.

Conclusions

This master thesis gives an overview of personalised web concept, using personalisation in e-government portals, including its benefits and obstacles developing personalised e-government portals. Also four practices of achieving personalisation were examined in the thesis, more closely was analysed and evaluated personalisation of the Estonian Sate Portal eesti.ee. Finally, the thesis provides suggestions for developing personalisation of the State Portal eesti.ee in the future.

With the research the author believes to have successfully addressed the research questions:

- What are the best practices for personalised e-government portals?
- What should be considered when developing personalised e-government portals?
- What could be the future for the personalised Estonian State Portal eesti.ee?

The results of the research fulfilled the goals of the thesis presented in the beginning together with the theoretical framework. The overview of related works describes different approaches of personalised web concept and personalised e-government portals. It appears that although theoretically there are different ways how to implement personalisation for a complex e-government portal, practically only few possibilities are used, including adaptive systems, adaptive navigation support, customisation and guidance which were used in viewed portals. Interestingly, however, none of the portals used recommender systems or analysing user behaviour in order to present information. Therefore these two techniques for personalisation should be consider more when developing e-government portal.

The analysis of the four portals – Danish borger.dk, Norwegian norway.no (minside.no), Austrian help.gv.at and Estonian eesti.ee – reveals that all of the portals have developed their way for personalisation. All of the viewed portals are struggling to find the most suitable technique for personalisation and a way to

personalise the whole process and not only individual services. In conclusion there is yet no best practice of personalisation that could be implemented for other e-government portals.

Although in theory there are known user and organisational obstacles, expert interviews with the representatives of viewed e-government portals revealed that there are mainly organisational obstacles for providing personalised e-government. Most mentioned were legal, financial, technical, and process-based obstacles as the e-government portals are not only about one e-service and one organisation but also a complex system. User obstacles appeared to be the access to personalised e-government portal and acceptance as users want governmental online services to be easy to use. That reveals that organisational obstacles need more attention when developing personalisation of e-government portal.

The benefit of the personalisation has been seen in increasing the efficiency, having a positive image of the e-government portal and increasing user satisfaction. The main goals of the personalisation of the e-government portals are giving the users information about their services, making it easier for users to serve themselves online, to be a single access point to several official procedures and to provide efficiently public services.

An online survey conducted for evaluating the user satisfaction with the Estonian State Portal eesti.ee personalised view My Data indicated that users are rather satisfied with the personalised action. Trust and privacy as user obstacles were not highlighted in the survey results; the credibility value of the personalised view My Data was 4.1 (out of 5). That said, however, 13% of users encountered problems and that affected their user satisfaction, 29% of participants named seven main improvements they desired.

The personalisation of the Estonian State Portal eesti.ee has arguably been modelled after a similar concept as other viewed portals. Moreover personalisation should be increased and involve other aspects, rather than remaining merely an overview of user information. The portal should be continuously improved, user feedback should be gathered and constantly analysed with the comparison of registered data in order

to evaluate the success of personalisation. Thesis proved that the modified ZeGo questionnaire could be used to collect data to evaluate user satisfaction with personalisation in e-government portal, but in future the gathering data and comparing it should be repeated, because it gives an overview if the user behaviour changes in time.

As the conducted online survey, expert interviews and analysis of registered data showed, there are main suggestions that would improve the personalisation of the Estonian State Portal eesti.ee in future. This includes fixing the main problems and implementing desired improvements, which would raise the user satisfaction. Further study should be invested in examining the effectiveness of these changes for organisation. The personalisation of the Estonian State Portal eesti.ee in future depends on the decision makers and owners of the portal, but as users indicated and the experience of the representatives of analysed e-government portals stated the main challenge is how to personalise the portal overall in order to tailor the content and services for specific users and from the individual e-service provision have a change to process-based online service provision.

Personalised web is one possible solution for guiding users in the hyperspace that is full of information. In order to provide the information that matches the user, the personalisation solution has to consider that e-government portals are used rarely and usage might change in time. Therefore good personalisation is important for providing a good user experience, generating trust, but as well it can contribute for changing public authorities business process and raise efficiency.

Kokkuvõte (Summary in Estonian)

Käesoleva inglisekeelse magistritöö "E-riigi portaalide personaliseerimine Eesti riigiportaali eesti.ee näitel" teema on inspireeritud tänasest olukorrast, mil kasumit teenivad veebilehed proovivad aru saada oma kasutajate käitumisest ja vajadusest, et pakkuda informatsiooni või teenuseid, mida kasutaja just sel hetkel tahab ja vajab. Samas avalikus sektoris ei ole selline lähenemine veel nii tuntud. Pigem on avalikus sektoris levinud e-teenuste pakkumise suurendamine pabervormide asemel.

Konkreetsemalt on magistritöö eesmärgid:

- Anda teoreetiline ülevaade personaalse veebi kontseptsioonist ja vaadelda personaliseeritud e-riigi portaalide parimaid praktikaid.
- Anda ülevaade personaalse e-riigi portaali arendamise takistustest ja võimalustest.
- Uurida, analüüsida ja hinnata riigiportaali eesti.ee personaliseerimise võimalusi.
- Kirjeldada riigiportaali eesti.ee personaliseerimise võimalikke tulevikusuundi.

Peamised uurimisküsimused on:

- Millised on personaliseeritud e-riigi portaali parimad praktikad?
- Mida peab arvestama kui arendada personaliseeritud e-riigi portaali?
- Milline on riigiportaali eesti.ee personaliseerimine tulevikus?

Magistritöö eesmärgi täitmiseks ning uurimisküsimustele vastuste leidmiseks annab töö esimene peatükk teoreetilise ülevaate veebi personaalsusest ja selle saavutamise tehnikatest, e-riigi portaali kontseptsioonist ja selle personaliseerimisest, samuti personaliseerimise eelistest, nõrkadest külgedes ning privaatsusest ja seaduslikest aspektidest. Töös on vaadeldud nelja e-riigi portaali – Taani, Norra, Austria ja Eesti portaali, mis on kasutanud personaliseerimist. Ekspertintervjuud nelja vaadeldud portaali esindajatega annavad ülevaate personaliseerimise eesmärkidest, takistustest ning kasust, samuti personaliseerimise tulevikuplaanidest.

Kuigi teoreetilised lähtekohad kirjeldavad kasutajast ja organisatsioonist lähtuvaid takistusi personaalsuse arendamisel, siis ekspertintervjuudes selgus, et peamised takistused on organisatsioonipõhised. Enim toodi esile seaduslikud, finantsilised, tehnilised ja protsessipõhised takistused, sest e-riigi portaal on keeruline süsteem, kus on sadu e-teenuseid ja seotud organisatsioone. Peamist kasu personaliseerimises on nähtud efektiivsuse suurenemises, kuid samuti luues kasutajatele e-riigi portaalist positiivne kuvand, mis omakorda tõstaks kasutajate rahulolu. Personaliseeritud riigiportaalide eesmärk on kuvada kasutajale tema andmeid, teha iseteenindus veebis lihtsaks, olla ühtne kontaktpunkt erinevatele ametlikele tegevustele ning pakkuda efektiivselt avalikku teenust.

Riigiportaali eesti.ee personaalse vaate Minu asjad hindamiseks kasutati kohandatud ZeGo küsitlust, mis näitas, et üldiselt olid kasutajad rahul pakutud personaalsusega. Samas 13% küsitluses osalejatest tõid välja neil esinenud probleeme ning 29% vastanutest esitasid seitset tüüpi soovitud parandusi. Tulemused näitasid, et probleemide esinemine vähendab rahulolu, samuti looks parema kasutuskogemuse kasutajate soovidega arvestamine.

Arvestades teoreetilisi lähtekohti, e-riigi portaalide personaliseerimise praktikaid, ekspertintervjuudes välja toodu tulevikusuundi ning kasutajate tagasisidet, siis riigiportaali personaliseerimist tuleb pidevalt edasi arendada, arvestada kasutajate tagasisidet ning analüüsida ja mõõta personaalsuse kasu.

Kuigi kasutajate rahulolu küsitluses välja toodud probleemide lahendamine ning soovitud paranduste tegemine tõstab kasutajate rahulolu, siis personaliseerimise kasu organisatsioonile ning protsessidele peab veel analüüsima ja hindama. Millises suunas riigiportaali eesti.ee personaliseerimine jätkub tulevikus sõltub erinevate arengukavade loojatest ning portaali omanikest, kuid nagu selgus küsitlusest ja intervjuudest, siis tulevikus on peamine väljakutse leida võimalus terve riigiportaali personaliseerimiseks, et pakkuda just kindlale kasutajale teenuseid ja informatsiooni, mida tal vaja on. Samuti on küsimus, kuidas liikuda ühe teenuse pakkumise põhimõttelt protsessipõhiseks.

Personaalne veeb võimaldab kasutajatel paremini orienteeruda informatsiooniga üleküllastunud internetis. Hästi rakendatud personaalsus loob hea kasutuskogemuse ning on turvaline. E-riigi portaalid peavad arvestama, et kasutajad külastavad selliseid portaale harva ning aja jooksul kasutajate käitumine võib muutuda, seega tuleb muutustega kaasa minna ning kohanduda. E-riigi portaalide personaalsusel on suur roll asutuste äriprotsesside muutmisel ning efektiivsuse suurendamisel.

References

Agency for Public Management and e-Government. (2012, January 27). *Difi legger om satsingen på innbyggerrettede tjenester*. Retrieved February 23, 2014, from Agency for Public Management and e-Government: http://www.difi.no/artikkel/2012/01/difi-legger-om-satsingen-paa-innbyggerrettede-tjenester

Agency for Public Management and e-Government. (2012, May 30). *Minside er historie, men noen tjenester lever videre*. Retrieved February 23, 2014, from Agency for Public Management and e-Government: http://www.difi.no/artikkel/2012/05/minside-er-historie-men-noen-tjenester-lever-videre

Alvik, T. (2007, May 9). *Mypage self-service citizen's portal*. Retrieved February 4, 2014, from epractice.eu: http://www.epractice.eu/en/cases/mypage

Avaliku teabe seadus. (2000, November 11). Retrieved November 26, 2013, from Riigi Teataja: https://www.riigiteataja.ee/akt/119122012005

Bargas-Avila, J. A., Orsini, S., Vido de, M., & Opwis, K. (2010). ZeGo: Development and Validation of a Short Questionnaire to Measure User Satisfaction with e-Government Portals . *Advances in Human-Computer Interaction , 2010*.

Bargas-Avila, J., de Vito, M., & Opwis, K. (2007). *ZeGo – Zufriedenheit im eGovernment.* Universität Basel, Institut für Psychologie.

Borger.dk - Version 2. (n.d.). Retrieved February 5, 2014, from World Summit Award: http://www.wsis-award.org/pr/success-stories/248

Borger.dk. (2012, May 2). Retrieved December 2, 2013, from Danish Agency for Digitisation: http://www.digst.dk/Servicemenu/English/Digitisation/Borger-dk

Brusilovsky, P. (2007). Adaptive Navigation Support. In P. Brusilovsky, A. Kobsa, & W. Nejdl, *The Adaptive Web* (pp. 263-290). Springer Berlin Heidelberg.

Brusilovsky, P., & Maybury, M. T. (2002). From Adaptive Hypermedia to The Adaptive Web. *Communications of the ACM , 45* (5), 30-33.

Demo of borger.dk. (n.y). Retrieved April 21, 2014, from http://digamb.dk/minside.borger.dk/

Digitaalallkirja seadus. (2000, March 08). Retrieved November 26, 2013, from Riigi Teataja: https://www.riigiteataja.ee/akt/184502?leiaKehtiv

Digital agenda. (n.y). Retrieved January 5, 2014, from Digital Austria: http://www.digital.austria.gv.at/site/6512/default.aspx

Directive 95/46/EC. (1995, October 24). Retrieved November 25, 2013, from EUR-Lex: http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:31995L0046:EN:NOT

Eesti teabevärava eesti.ee haldamise, teabe kättesaadavaks tegemise, arendamise ning kasutamise nõuded ja kord. (2013, October 04). Retrieved November 25, 2013, from Riigi Teataja: https://www.riigiteataja.ee/akt/104102013008

Eesti Vabariigi põhiseadus. (1992, June 28). Retrieved November 26, 2013, from Riigi Teataja: https://www.riigiteataja.ee/akt/127042011002?leiaKehtiv

eGovernment strategy 2011-2015. (2013, November 7). Retrieved December 2, 2013, from Danish Agency for Digitisation: http://www.digst.dk/Servicemenu/English/Policy-and-Strategy/eGOV-strategy

Eirinaki, M., & Vazirgiannis, M. (2003). Web mining for web personalization. *ACM Transactions on Internet Technology , 3* (1), 1-27.

Etzion, O. (1996). The World-Wide Web: Quagmire or Gold Mine? *Communications of the ACM , 39* (11), 65-68.

European eGovernment Awards 2007. (2007). Retrieved February 4, 2014, from epractice.eu: http://www.epractice.eu/egovernment2007

European eGovernment Awards. (2009). Retrieved February 4, 2014, from epractice.eu: http://www.epractice.eu/awards

Furuli, K., & Kongsrud, S. (2007). Mypage and Borger.dk - A Case Study of Two Government Service Web Portals. *Electronic Journal of e-Government , 5* (2), 165-176.

Furuli, K., & Ølnes, S. (2009). Finding the Right Services for a Citizen Portal Lessons Learned from the Norwegian Mypage Portal. *8th International Conference, EGOV. 5693*, pp. 282-292. Springer Berlin Heidelberg.

Google Analytics Opt-out Browser Add-on. (2013). Retrieved Novmeber 23, 2013, from Google: https://tools.google.com/dlpage/gaoptout

Hirsjärvi, S., Remes, P., & Sajavaara, P. (2010). *Uuri ja kirjuta.* Medicina.

Infoühiskonna arengukava 2020 rakendusplaan 2014-2015. (2013, September). Retrieved March 21, 2014, from Infoühiskonna arendamisest Eestis: http://infoyhiskond.eesti.ee/files/Rakendusplaan_2014-2015_final_veeb.pdf

Isikuandmete kaitse seadus. (2011, March 03). Retrieved November 25, 2013, from Riigi Teataja: https://www.riigiteataja.ee/akt/130122010011?leiaKehtiv

Isikut tõendavate dokumentide seadus. (1999, February 15). Retrieved November 26, 2013, from Riigi Teataja: https://www.riigiteataja.ee/akt/214301?leiaKehtiv

ISO 9241 Ergonomic requirements for office work with visual display terminals. (2008). Retrieved November 12, 2013, from Usability Net: http://www.usabilitynet.org/tools/r_international.htm#9241-1x

ISO FDIS 9241-210 Human-centered design for interactive systems. (2009). *Ergonomics of human system interaction* .

Jaeger, P. T. (2003). The endless wire: e-governent as global phenomenon. *Government Information Quarterly , 20* (4), 323-331.

Kim, J., Cramer, M., Teevan, J., & Lagun, D. (2013). Understanding how people interact with web search results that change in real time using implicit feedback. *The 22nd ACM International Conference on Information and knowledge management*, (pp. 2321-2326). New York.

Kumar, R., Raghavan, P., Rajagopalan, S., & Tomkin, A. (2001). Recommendation Systems: A Prohabilistic Analysis. *Journal of Computer and System Sciences* (63), 46-61.

Kuniavsky, M. (2003). *Observing the User Experience: a Practitioner's Guide to User Research.* Burlington, USA: Morgan Kaufmann.

Loutas, N., Lee, D., Maali, F., Peristeras, V., & Tarabanis, K. (2011). The Semantic Public Service Portal (S-PSP). In *The Semantic Web: Research and Applications* (pp. 227-242). Springer Berlin Heidelberg.

Majandus- ja Kommikatsiooniministeerium. (2013, November 14). *Infoühiskonna arengukava 2020 lõppversioon.* Retrieved February 5, 2014, from Infoühiskonna arendamisest Eestis: http://infoyhiskond.eesti.ee/eesti-infouhiskonna-arengukava-2020/infouhikonna-arengukava-2020-loppversioon

Meyerhoff Nielsen, M. (2012, June). *MyPage - Proactive, personal, mobile.* Retrieved February 4, 2014, from Prezi presentation: http://prezi.com/ib3e4w-00r1r/my-page-tour-proactive-personal-and-mobile/

Mulvenna, M. D., Anand, S. S., & Büchner, A. G. (2000). Personalization on the Net using Web Mining. *Communications of the ACM , 43* (8), 123-125.

Ntwanga, F., Calitz, A. P., & Barnard, L. (2008). Maintaining Customer Profiles in an E-commerce Environment. *The annual research conference of the South African Institute of Computer Scientists and Information Technologists on IT research in developing countries: riding the wave of technology.*

P3P: The Platform for Privacy Preferences. (2007, November 20). Retrieved November 25, 2013, from W3C: http://www.w3.org/P3P/

Perkowitz, M., & Etzion, O. (2000). Towards adaptive Web sites: Contceptual framework and case study. *Artificial Intelligence , 118* (1-2), 245-275.

Pierrakos, D., Paliouras, G., Papathedorou, C., & Spyropoulos, C. D. (2003). Web Usage Mining as a Tool for Personalization: A Survey. *User Modeling & User-Adapted Interaction , 13* (4), 311-372.

Pieterson, W., Ebbers, W., & van Dijk, J. (2007). Personalization in the public sector: An inventory of organizational and user obstacles towards personalization of electronic services in the public sector. *Government Information Quarterly , 24*, 148-164.

Pirker, H. (2009, October 2). *MyHELP - Your persinalised service portal of official channels*. Retrieved December 2, 2013, from epractice.eu: http://www.epractice.eu/en/cases/myhelp

Protection of personal data. (n.y.). Retrieved November 25, 2013, from European Commission: http://ec.europa.eu/justice/data-protection/index_en.htm

Relyea, H. C. (2002). E-gov: Introduction and overview. *Government Information Quarterly , 19*, 9-35.

Riigi Infosüsteemi Amet. (2010, October 22). *Riigiportaal eesti.ee saab uue näo ja sisu*. Retrieved March 23, 2014, from Riigi Infosüsteemi Amet: https://www.ria.ee/riigiportaal-eestiee-saab-uue-nao-ja-sisu/

Riigi Infosüsteemi Amet. (2009, August 18). *Riigiportaal eesti.ee uueneb*. Retrieved March 21, 2014, from Riigi Infosüsteemi Amet: https://www.ria.ee/riigiportaal-eestiee-uueneb/

Riigi Infosüsteemi Amet. (2011, November 28). *Riigiportaal eesti.ee uuenes*. Retrieved February 5, 2014, from Riigi Infosüsteemi Amet: https://www.ria.ee/riigiportaal-eestiee-uuenes/

Riigiportaal eesti.ee. (2013). Retrieved November 10, 2013, from Estonian Information System's Authority: https://www.ria.ee/ee/index.php?id=33282

Riigiportaal eesti.ee. (2013, March 11). *Riigiportaali ajalugu*. Retrieved February 5, 2014, from eesti.ee: https://www.eesti.ee/est/teemad/kodanik/riigiportaali_abi/riigiportaali_ajalugu

Riigiportaal eesti.ee. (2012, November 26). *Teavituskampaania 2011*. Retrieved April 21, 2014, from Riigiportaal eesti.ee: https://www.eesti.ee/est/teemad/ettevotja/riigiportaali_abi/teavituskampaania_kutsub_inimesi_kasutama_uuenenud_riigiportaali

Riigiportaal eesti.ee. (2014, March 21). *Terms of use of State Portal eesti.ee*. Retrieved April 13, 2014, from Riigiportaal eesti.ee: https://www.eesti.ee/eng/riigiportaali_eesti_ee_kasutustingimused

Riigiportaalis eesti.ee näeb oma andmeid ühes kohas. (2013, August 15). Retrieved February 4, 2014, from Riigi Infosüsteemi Amet: https://www.ria.ee/riigiportaalis-eestiee-naeb-oma-andmeid-uhes-kohas/

Rubin, H. J., & Rubin, I. S. (2005). *Qualitative Interviewing: The Art of Hearing Data* (2nd Edition ed.). California: Sage.

Schafer, J. B., Konstan, J. A., & Riedl, J. (2001). E-Commerce Recommendation Applications. *Data Mining and Knowledge Discovery* (5), 115-153.

Schmidt, K.-U., Stojanovic, L., Stojanovic, N., & Thomas, S. (2010). Personalization in E-Government: An Approach that Combines Semantic and Web 2.0. In *Semantic Technologies for E-Government* (pp. 261-285). Springer Berlin Heidelberg.

Srivastava, J., Cooley, R., Deshpande, M., & Tan, P. (2000). Web Usage Mining: Discovery and Applications of Usage Patterns from Web Data. *SIGDD Explorations Newsletter , 1* (2).

Statistics Estonia. (2013, Septembee 13). *Internet Users aged 16-74 by place of residence and e-service of public authorities*. Retrieved February 17, 2014, from Statistical database - Information technology and communications: http://pub.stat.ee/px-web.2001/I_Databas/Economy/20Information_technology/04Information_technology_in_household/04Information_technology_in_household.asp

Temmer, R., Püüa, M., Oks, R., Kreinin, M., Kalja, A., & Oolberg, I. (2005, May 3). *„Riigiportaal „Sinu Eesti“ kontseptsioon“.* Retrieved February 5, 2014, from Riigi Infosüsteemi Amet: https://www.ria.ee/public/Riigiportaal/Riigiportaal_Sinu_Eesti_kontseptsioon.pdf

The European eGovernment Action Plan 2011-2015. (2010, December 12). Retrieved November 28, 2013, from European Commission: http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2010:0743:FIN:EN:PDF

Todorovski, L., Leben, A., Kunstelj, M., Cukjati, D., & Vintar, M. (2006). Methodology for building models of life events for active portals. *Electronic Government Communication Proceedings of the Fifth International EGOV Conference*, (pp. 61-68).

Trinidad Consulting OÜ, MRM Baltic OÜ, Webmedia AS. (2010). *Portaali eesti.ee kasutajakesksuse analüüs.* Riigi Infosüsteemide Arenduskeskus.

United Nations. (2012). *E-Government Survey 2012, E-Government for People.* New York: Department of Economic and Social Affairs.

van Velsen, L., van der Geest, T., ter Hedde, M., & Derks, W. (2008). Engineering User Requirements for e-Government Services: A Dutch Case Study. *Electronic Government , 5184*, 243-254.

Velasquez, J. D., & Palade, V. (2008). *Adaptive Web Sites.* Amsterdam: IOS Press.

Viticci, F. (2013, November 21). *Leaving Google Chrome: Why I've Returned to Safari*. Retrieved November 25, 2013, from macstories: http://www.macstories.net/stories/leaving-google-chrome-why-ive-returned-to-safari/

Wang, H., Lee, M. K., & Wang, C. (1998). Consumer Privacy Concerns about Internet Marketing. *Communications of the ACM , 41* (3), 63-70.

Warkentin, M., Gefen, D., Pavlou, P. A., & Rose, G. M. (2002). Engouraging Citizen Adoption of e-Government by Buildin Trust. *Electronic Markets , 12* (3), 157-162.

Weinreich, H., Obendorf, H., Herder, E., & Mayer, M. (2008). Not Quite the Average:: An Empirical Study of Web Use. *ACM Transactions on the Web , 2* (1).

Wimmer, M., & Tambouris, E. (2002). Onilne One-Stop Government: A wroking framework and requirements. *IFIP World Computer Congress.*

Yun, G. W., Ford, J., Hawkins, R. P., Pingree, S., McTabish, F., Gustafson, D., et al. (2006). On the validity of client-side vs server side web log data analysis. *Internet Research , 16* (5), 537-552.

APPENDICES

Appendix 1. Interview Questions

Questions sent to representatives of Denmark borger.dk, Norway norway.no, Austria helt.gv.at

Topic 1: Goal of personalisation

1. What was the goal for developing personalized portal?
2. How this goal has been fulfilled?
3. What process for developing personalisation was used?

Topic 2: Benefits and obstacles of personalisation

4. What benefits personalisation has had for the state, organization and users? Are there measurable outcomes?
5. What kind of obstacles (legal, trust by users, technical) did occur? How these obstacles were exceeded?

Topic 3: Future of personalisation

6. What are the plans/ides for the future about personalised portal?

Questions presented to owners and developers of eesti.ee

Teema 1: Personaalsuse eesmärk

1. Mis on riigiportaali personaalsus riigi jaoks?

Teema 2: Personaalsuse kasu ja takistused

2. Mis kasu on eesti.ee personaalsusest riigile/kasutajale?
3. Millised takistused olid/võivad olla eesti.ee personaalsuse arendamisel?
4. Kuidas on hinnatud/mõõdetud eesti.ee personaalsuse tulemust kasutajale?
5. Kuidas on hinnatud/mõõdetud eesti.ee personaalsuse tulemust riigile?

Teema 3: Personaalsuse tulevik

6. Kuidas arendatakse eesti.ee personaalsust edasi tulevikus?

Appendix 2. Conclusions of Interviews

Mihkel Tikk - Estonian Information System's Authority, Head of the Department of the State Portal eesti.ee

15 January 2014

Teema 1: Personaalsuse eesmärk

Personaalsuse eesmärk on teenuse kasutamine ja osutamine. Kasutajale ja osutavale asutusele teha lihtsaks, et teenus võtaks vähe aega. Teenus teha nii, et see on kasutajale kõige vähem koormav ning asutusel aitaks personaalsus protsessi hästi lihtsasti ära teha võttes välja vana süsteemi bürokraatia. Minu jaoks on personaalsus, et suudame olemasolevalt infolt arvutada kasutajale optimaalsema tee selleks, et ta saaks oma teenuse kätte.

Personaalsus on üks viis, kuidas lahendada suuremat probleemi, mida me oleme kutsutud lahendama ehk avaliku teenuse osutamine. Meie üks ülesanne on pakkuda infrastruktuuri ja e-vahendeid, et seda oleks võimalikuld mugav teha. Me oleme väike riik ja kompetentsi ei ole igas asutuses selles valdkonnas, meie ülesanne on mõelda ka teiste eest tehnilises valdkonnas, et tehnoloogia oleks kõige mugavamini kasutatav. Personaalsus on üks meede, kuidas avaliku teenuse osutamist paremini juhtida.

Teema 2: Personaalsuse kasu ja takistused

Meie asutuse kontekstis võidame sellest, et meil on võib-olla vähem kasutajatoe pöördumisi ja väiksem koormus portaalis tänu sellele, et inimesed vähem otsivad ning meie maine on positiivne. Kuna pakume siiski ainult kanalit, mitte teenust ennast, siis ma ei ütleks, et meie sellest võidame. Peame end nägema osast riigina, tegelikult muudame riigi teenuse osutamist paremaks. Võidame sellest, et täidame ülesannet riigi ees hästi ning kõikide lahendustega, mis teeme, meid usaldatakse kui kompetentsikeskust.

Kasu on selles, et asju teistmoodi tehes on meil poliitiline tugi ja rahastatus. Kui oleks tegemist äriettevõtte ja tugev konkurentsiga, siis mida personaalsemaks suudame minna, on suurem tõenäosuse, et kliendid tulevad meile. Täna seda konkurentsi ei ole, ise ei pea neid andmeid kaevama ja analüüsima, et kliendile anda. Pigem loome tehnoloogiat, kuidas seda teha ja pakume enda lahendusi, mis viib äriloogika riigiüleseks, mitte ainult ühe asutuse peale.

Takistused on reeglina seotud sellega, et on *legacy*, mitte IT-*legacy*, vaid asutuste protsesside *legacy*. Asutused on kunagi loodud pabermaailma peale ja inimesed on ära harjunud selle pabermaailmaga. Suurem takistus on sellest, et inimesed on harjunud asju ühtemoodi tegema. Kuna tehnoloogia võimaldab täna asju teistmoodi teha, siis inimesed ei lähe sellega kaasa. Tehnoloogia võimaldab tänapäeval kiiremaid otsuseid teha ja efektiivsemalt ressursse kasutada. Riigil on enamasti

mingit andmekoosseisu vaja, enamus sellest saavad asutused omavahel ära vahetada ja mõned väljad juurde küsida. Kõige suurem takistus on inimesed ise ja vanad äriprotsessid. Kui inimesed igas haldusalas saaksid tehnoloogia võimalustest aru, siis nad hakkaksid ka seadusandlust vastavalt sellele muuta. Põhitakistus on inimeste mõttemall ja tahe muuta asju.

Turvalisus ja usaldusväärsus on e-maailmas parem, sest kõik päringud on logitud ja monitooritud, me liigume sinna, et oleks näha, kus neid andmeid on kasutatud. Näiteks on asutusi, kus ei ole inimese andmed nii kaitstud ja ei saa ka teada, kes neid andmeid kasutas. Turvalisus ja privaatsuse kaitse on tänu tehnoloogilistele lahendustele suurem, sest andmed ei ole tsentraalses andmebaasis, andmete kasutamine on logitud ja inimene saab küsida ülevaadet, mis andmeid kasutati.

Üldiselt inimesed usuvad, et tehnoloogia on turvaline. Info jõuab arvutisse niikuinii, kui inimene läheb füüsiliselt kohale teenust tarbima. Küsimus on selles, kuidas teha süsteem läbipaistvaks, et inimene usaldaks. Näen, et lahendus on andmed ühendada, et nende kasutamine oleks näha. See on mõttemaailmas kinni, et arvatakse, et paber on turvalisem.

Tulemuse hindamiseks on olnud üleüldised rahulolu uuringud, kus küsitakse palju inimesed on rahul ja palju nad usaldavad. Personaalsus on lisaväärtus olemasolevale, sest Eesti inimene on jõudnud sinna, kus eeldab, et kõik teenused on elektrooniliselt kättesaadavad.

Teema 3: Personaalsuse tulevik

Personaalsus ongi see, kui me näeme, et inimesel on võimalik kasutada teenust ja meil on tegelikult andmed olemas, et inimesele see teenus ära osutada. Me ütleme, et see teenus on ära tehtud ja saadame inimesele teavituse ja personaalsus ei olegi inimesele näha, ainult kiri tuleb postkasti. Kui siiski on vaja kasutaja käest infot, avalduse kuupäeva või teist teavet, mida inimene on teinud näiteks välismaal, infot, mida meil ei ole, siis me suudame olemasoleva info põhjal küsida ainult paari asja.

Personaalsuse suunal on vaja arhitektuuri pilti muuta. Näiteks kui mina login portaali, siis portaal teeb kontrolli ära, mis andmed on olemas ja mis ei ole ning arvestab, millist toetust võiks inimene saada. Kui vajutan toetuse nupu peale, siis toimub automaatne kontroll, mis andmed olemas on ja vastavalt pannakse õiged teenused järjekorda. Näiteks kui hakata lapsele lasteaiajärjekorda panama, siis soovib portaal õnne ja laseb lapsele nime ära panna, sest see on eelduseks, et asju edasi ajada. Kui juba on nimi pandud, siis pakutakse kohe võimalusi vastavalt sellele.

Kuna 200 000 inimest ei kasuta e-teenust ei e-kanalis ega füüsiliselt, siis nende hõlmamiseks tuleb luua lisavõimalused. Üks variant on, et ta volitab kedagi teist kasutama teenust tema eest. Kindlasti on juriidilisi küsimusi, mis tuleb lahendada. Volitatav saab mingis piiratus ulatuses teha tehinguid, alati veendutakse, kas inimene on ka nõus. Üks suund on kanalite suurendamine, et ei oleks ainult veebiteenus, vaid ka mobiiltelefonis ja ka digi-televisioonis. Ei imesta kui lõpuks jõuame ka inimeste autodesse. Siis on kõnetuvastustehnoloogia, mida peame ära kasutama. See

võimaldab mitut moodi automatiseerida teenuse osutamist. Mobiil-ID võimaldab inimese telefoni teel ära autentida ja see võimaldab telefoni teel teenused ära osutada, ilma et peaks kõnekeskus olema. Kõige tähtsam on äritehnoloogia valdkond, et jõuame riigi äriprotsessid üle vaadata, et need toetaks teenuse osutamise lihtsustamist täiel määral. Näiteks juhilubade väljastamiseks ei pea inimene füüsiliselt pöörduma, kui on kehtiv ID-kaart, siis saaks automaatselt ära uuendada kui on korralikult tervisekontrollis käinud inimene. Siis peaks oluliselt odavam olema kui täna, sest riigilõiv on selleks, et asutus saaks selle operatsiooni ära teha. Riigilõivud on jäänud vanast ajast ja ei arvesta, et tehnoloogia on kokku hoidnud.

Kõigile Euroopa Liidu kasutajatele me ei saa kõigile pakkuda sama taset, sest teiste riikide kodanikud peavad rohkem andmeid sisestama või tegema läbi meie portaali päringu või saatma andmeid. Inimestel on vaja kontrollida, mis andmed riigil on tema kohta. Muutuvad seadmed, milles infot kuvada, näiteks kui mobiilis teeb protseduuri, siis dokumente läheb kasutaja vaatama ikka teises seadmes.

Janek Rozov - Ministry of Economic Affairs and Communications, Head of the Department of Information Society Services Development

16 January 2014

Teema 1: Personaalsuse eesmärk

On kaks suurt kliendigruppi Eestis – kodanikud ja ettevõtjad. Ettevõtjad saavad palgata kellegi, kes teeb valdkonna selgeks ja suhtleb riigiga. Kodaniku jaoks on suhtlus riigiga uus kogemus, mida tavaliselt ei tee, see ei ole rutiin. Seega ongi kontseptsioon lihtsustada info otsimist ja teenuseni jõudmist. Täna kuvatakse kogu info, mis sul on. See juba avab teatud piirid, inimene ei pea otsima ja klikkama. Seda on vähe, sest mind kui kodaniku huvitab, mis on hapu ja mis mulle lisaks pakutakse. Kaks poolt – soodustav ja nn kohustuslik, mingi tähtaeg on tulemas või on juba aegunud. Siit tuleb sisse proaktiivsus, mida on täna vähe.

Oluline on teenuse viia selleni, kellele see vaja on, arusaadav, kättesaadav ja ta on teadlik sellest. Kui inimene ei hakka seda kasutama, siis ei ole muudest tegevustest kasu. Personaalsus tähendab ka seda, et erinevad keskkonnad peavad olema kahe kasutajagrupi jaoks – vilunud ja esmakasutajad. Esmakasutaja jaoks peab olema teistsugune ja vilunud kasutajale on oluline funktsionaalsus. Personaliseerituse uus nõue on lisaks minu infole ka see, kes ma kasutajana olen ehk rollipõhisus. Kui seda arvestatakse, siis saab järgmise taseme iseteenindusportaalides läbi selle, et ongi personaalne, mitte läbi selle, mida mulle pakutakse vaid mida ma kasutajana suudan vastu võtta.

Teema 2: Personaalsuse kasu ja takistused

Kasu ongi see, et inimene ei taha käia asju ajamas riigiga. Ta tahab teha oma toiminguid, elada ja nii pea kui tal on mingi kohustus või soodustus, siis peab n-ö alandama, midagi küsima ja midagi esitama. Põhiväärtus ongi, et võtame partner-

partner suhte aluseks, tema eest teeme toimingud ära ühte kohta ja pakumegi lõpptoodangu, kus peab ütlema ainult jah-ei. Võit on selline, et esiteks inimene ei pea vaevama pead otsides informatsiooni, ei pea käima, ei pea end lollina tundma, saab läbi selle anda tagasisidet, et riik hoolib temast. Saabki hoolivust tõsta ja tekitada riigist paremat kuvandit. Inimene ei pea ise midagi tegema ja riik aitab teda. Riik ütleb varem, et on midagi juhtumas ning juhul kui jätab tegemata on oodata lisakulusid, mitte ei tule kaks aastat hiljem intressidega kallale. Riik ei hoia infot enda käes sinnamaani, kuni on seda kõike kasulikum kasutada. Lihtsad ja rutiinsed tegevused tuleks automatiseerida mitte tegeleda „tähtsa näoga“ vorminõuete kontrolliga. Ametitel peab jääma sügav järelvalvefunktsioon ja kaalutlusõiguse kasutamine otsuste vastuvõtmisel. Lihtne nn suhtlusteenus koos vorminõuete kontrolliga mida suudab „jah“ „ei“ või „0“ ja „1“ vastuste tasemel arvuti ära teha, peaks asutuse poolt füüsilisest kanalist ära kaduma, see peaks olema portaalide roll. Suurem integratsioon peaks toimuma ka avaliku ja erasektori vahel. Peab olema selge, kui võimeline eesti.ee tehniline pool on, et saaks lihtsaid teenuseid juurde liita, näiteks päringuid ja jah-ei teenuseid.

Seadus ei sega personaalset vaadet Minu asjad täna. Kui ükskord suudame kogu info näidata inimese kohta, siis võib tekkida n-ö suure venna sündroom. Suurem risk on see, et mida rohkem kuvame infot, siis üks hetk hakkab laekuma avaldusi, kus palutakse ära võtta see info. Selle maandamiseks ongi ainult see, et kui inimene tahab info maha võtta, siis peab ta rohkem ise asjadega tegelema ja ei saa nõuda head teenust, sest peab ise info kokku koguma ja viima sinna, kus seda vaja on. Seda saab ennetada, kui sellest rääkida inimestele ja tuua välja, mis kasu sellest on, kui seda infot kuvatakse. Peame näitama, et saab infot ja teenuseid ühes kohas näidata, kuid tuleb ka siis reeglid luua, millal saab inimene ise infot maha võtta kui tahab, kuidas saab infot juurde, kui inimene teab, et on käinud asutuses X. Ei ole ainult nii, et riik suhtleb riigiga, vaid et kodanik oleks ka julge ja oleks initsiatiivi ettepanekuid teha.

Suurem risk on koostahe, alati võib leida eelarves raha, et teha asju korda ja paremaks. Suurem puudus võib olla selles, et tublimad saavad karistada, kui tegevused on efektiivsemad, siis võidakse ka eelarveid vähemaks teha. Probleem, et mitte raha ei ole, vaid raha võetakse ära kui liiga efektiivne olla. Raha ise pole probleem, pigem see, kuidas saavutatud efektiivsusega hiljem käitutakse. Probleemiks on ka muutuste kartus, mis segab arengut. Tahame aasta lõpuks välja töötada ja pilootprojekti teha nn kasutajamugavuse mõõtmisel. Tahame teada, kuidas mõõta kasutaja rahulolu ja kasutuskogemust. Samuti rakendame soovitusindeksit, küsime tagasisidet konkreetsetelt kasutajatelt, et küsida vahetut emotsiooni. Tahame läbi rolli eesmärgi saavutamise taset mõõta, kui on eesmärk saavutatud, siis tõenäoliselt saab rahul olla. Igale rollile saab määrata tegurid, näiteks kiirus.

Teema 3: Personaalsuse tulevik

Lisaks kasutaja enda vaatele võiks olla veel vaade lapsele, vanemale või kellelegi teisele, kes ise ei taha või ei saa. Kui paberi peal saab volitada kedagi teist midagi tegema. Laste puhul võiks lisaks e-koolile näha neid asju, et saaks lapsevanemana lapse eest asju ära teha kui on midagi puudu. Peaks tihedalt olema seotud kohaliku

omavalitsuse teenustega, sest neid tarbitakse rohkem kui riigi teenuseid, need on rohkem igapäeva tegevusega seotud. Näiteks raamatukogud, huviringid ja muud sellised valdkonnad, seal on maksed juures. See ei pea tingimata eesti.ee-s olema, või ka mõnda teise portaali liikuda, näiteks Tallinna või Tartu oma. Pigem peaks olema reaal-aja teenustele rohkem üle minev. Peaks olema riigi nägu ja keskkond, kus riik suhtleb mugavalt ja hästi kodanikuga. Lisaks on dokumentide osa, peaks olema koht, kus näeb otsuseid minu kohta ja mis on pädev. Lisaks sellele eelnevalt nimetatud rubriikidele oleks võimalus kohe algatada tegevust, mitte otsida. Minu asjad personaalsus on hea, kuid seda tuleks jätkata lisades sinna otseteid või läbi mõelda, kuidas oleks kliendi jaoks sujuvam.

Küsimus on kui palju teenuseid peaks olema ühes kohas n-ö massteenused. Teine valdkond on spetsiifilised teenused, kui need on keerulised ja neid ei anna lihtsaks teha, kas need üldse peavad olema eesti.ee-s. Peaks mõtlema, kuidas saada need niši teenused õigesse portaali ja see portaal panna suhtlema eesti.ee-ga ja see info oleks kättesaadav ja loogiliselt selge. Lihtsad ja selged n-ö kolmekliki teenused võivad olla eesti.ee-s, keeruliste ja mahukate puhul, mida vaja teha üks kord aastas võivad olla omas keskkonnas. Teine küsimus, kas üldse peab eesti.ee-sse minema, sest tehnoloogia võimaldab ka mujale kuvada. Ühe pildina võiks olla eesti.ee, kuid tegelikult võib kodanik käia ka seda infot mujal vaatamas. Siin ei ole kontseptsiooni, see on mõte. Personaalne peaks tähendama ka seda, kui mina sugulasena volitatud isikuna saan midagi teha, siis lisaks võiks olla võimalus ametnikuna midagi teha. Kui ongi teenused, mis on mõeldud klientidele, siis miks ei saa nii teha, et ongi ametniku vaade ja saab ära teha inimesele, kes ei saa, ei oska või ei taha. Tekib küsimus, kuidas allkirjastada, aga sõrmejäljed on ka olemas ja puutetundlikul ekraanil allkirjastamine. Kui teame, et digitaalse info haldamine on lõppkokkuvõttes odavam kui paberil, siis miks tänaseni pole seda tehtud.

Lisaks on idee olnud kõnekeskusevaate loomine. Üks eesti.ee funktsionaalsus võiks olla see koht, kus kõnekeskuse töötajad infot otsivad, et kui eesti.ee-s ei ole aga vajatakse, siis oleks tagasisidet, et seal võiks olla see info. Saaks tagasisidet, kas info on leitav, kas olemas on ja kas tõesti populaarne info on kohe leitav. Kui e-teenuste teadlikkus on 30%, siis on vaja vahekanalit mingiks ajaks. Ei pea helistamine olema võib ka *chat* olla. Läbi keskkonna saaks vajalikku infot, mitte e-kirjaga. Järgmise kahe aasta jooksul võiks personaalses vaates Minu asjad ära teha, et ainult ei vaata oma andmeid aga on võimalus ka kohe tegutseda, see teenus ära tarbida ja asjad korda ajada. Kaob vahelt ära otsimine, kohe saab näha andmeid ja ka nende alusel tegutsema hakata ning sellega on teenus pakutud.

Liina Martõnjak- Trinidad Consulting OÜ, Senior UX Architect

2 February 2014

Teema 1: Personaalsuse eesmärk

"Minu asjade" menüüpunkti eesmärk oli pakkuda kasuajale võimalust koondada kõik talle olulised teemad ja teenused ühte kohta (sarnane keskkond nagu infosüsteemides on kasutaja töölaud (*dashboard*). Vajadus selle funktsionaalsuse järgi eesti.ee's oli, sest teenuseid ja teemasid on portaalis väga palju ning kasutajale

oleks äärmiselt ebamugav alati otsimisega otsast peale hakata. Samuti on igal juhul vaja luua kasutajale koht kus hallata ja seadistada enda andmeid.

Teema 2: Personaalsuse kasu ja takistused

Funktsionaalsuse loomise käigus sai minu asjade menüü punkti korduvalt lõpp-kasutajate peal testitud (tegime kasutatavuse testimist). Kasutajatele anti hulk ülesandeid (enam ei mäleta mitu) ning paluti neil teha neid tegevusi prototüübi peal. Selle käigus sai hinnata kui lihtne või keeruline funktsionaalsuse kasutamine oli.

Üks kõige suuremaid keerukusi oli menüü punktile hea nimetuse välja mõtlemine. Alguses töörühmas sai seda punkti nimetatud "Minu asjad" ning plaan oli hiljem leida parem nimi, aga nagu ajutiste asjadega sageli juhtub, jäigi nimeks "minu asjad".

Morten Meyerhoff Nielsen - Head of section, Danish Agency for Digitisation, Denmark

18 February 2014

Topic 1: Goal of personalisation

The initial goal was to give an overview of personal information and to increase transparency and access to personalised data that government has about people. These ideas were inspired from private sector solutions. Digital post-box was in the beginning secure communication channel from authorities to citizens. Now it is secure channel both for receiving and writing to the authorities. Goal was to have communication digitally. We are trying to change peoples behaviour trough legislation, communication, user-friendliness including personalisation, trainings. Personalisation is a why to make the online channel more relevant and attractive to users (compared to analogue service delivery channels) and to make it easier for people to serve themselves online - especially relevant now that digital communication and selected high volume, high frequency eServices are being made mandatory.

The objective of personalisation is currently cost saving and efficient. Besides My Page, Borger.dk services are tailored to the user based on the municipality. When users login or select a municipality the portal will filter the content and services and only show the content relevant to the users selection. Simultaneously the portal will add location specific content added by that municipality, to the existing borger.dk texts. There is currently no user rating implemented on the portal or associated services. A online survey has been in place as a pilot-project. Regular user satisfaction survey is carried out. Success criteria include that 8 out of 10 users must find information easily and 8 out of 10 must agree that the language is easy to understand. In last survey 84% agreed that that portal is written in user-friendly language and 74,4% said that they found the information easily.

Topic 2: Benefits and obstacles of personalisation

Main challenge is to get IT sector and authorities to be more innovative. People are willing to use services and interact with government, if the services are easy to use.

Now then people are forced to do it, the percentage of people indicating that they want to service themselves online is falling. To get people use portal, is combined with communication, campaigns and awareness raising and supporting people through IT-teaching programmes. People trust the public authorities. Security problems have been only about the access to data and similar concerns like people have had for online banking. Specialised media, usability experts have been critical and this is getting to main media and to politicians, who have been in favour to self-service. Mostly it has been concerns about user-friendliness and regulating by law how people have to behave. Getting rid of paper is the main benefit, because paper is the most expensive part of the process. In the long term, the potential for real coast saving comes from process and organisational re-engineering and automation in the back-office, similarly from streamlining legislation and minimising regulations (where possible). Getting people doing things online is the first step that enables automation and increasing efficiency.

One of the problems is that the analogue channels have an advantages vis-à-vis the digital, because they receive "holistic" advice from call centre and citizen service centre staff. This means that authorities have to treat the whole case and highlight relevant issues such as other services, grants and subsidies a citizen may be entitled to. In the digital world we generally know if the applicant for one service is entitled to other grant (know from the back-end and data on the individual), but legally we cannot give automatically give them the grant - they have to apply. That is why digital channel in some situations is less attractive for the user than the analogue service delivery channels. It is difficult to have this kind of overview in digital channel, if it is digitalised individual service not the whole process of the services.

Topic 3: Future of personalisation

It is possible to personalise portal more. It is possible to tag the eServices combining the service ID with the authority ID and with private sector developer ID. If the user logs on to the portal, we know the user is from certain municipality and needs these services from this authority from local level and national level. This is the basic way of segmenting services – and we already do this.

We can add personalisation fragment to each of the services, because with the unique ID like digital signature we know users social security number and that is a unique identifier in Denmark. Based on that we can tailor service to a person from given municipality, sex, certain age group, family status etc.. We know that based on data and different registries and between the relation between that person ID number and other peoples ID numbers. We can build user profile based on the unique identifiers. Similarly we can match different ID's eg personal ID's, building registry ID's, company registry ID's, vehicle registration numbers/ID's etc.

We are analysing our approach to personalisation: Do we need the My Page or do we personalising the whole portal. E.g., if the person logs on, the portal is personalised based on the person. It would be services and content tailored for the user based on information we have about the user. All paper-based letters will be in digital post box and it is mandatory from the 1st of November 2014. This can be used

to create a message flow that is tailored to the individual user of the portal. Digital post box should pop up and lead to other services or portal functions.

We are in Denmark working using digital by default concept, if there are people who do not know how to use it or do not have an access; they should have a valid excuse not having it. One of the projects is providing users more with location specific content and getting more authorities to provide their information and eServices on Borger.dk and ONLY on borger.dk. Other project is about user-friendliness approach and quality insurance. In January was launched responsive design, in April the NemID will be re-launched in order to be use new mobile digital signature on mobile platforms. Responsive portal was made, because using app did not seam reasonable as people use government services seldom and it is cumbersome to the user to first have to find and download an app before they can start using a given s service. New services for portal must be developed so they are responsive and used on small screens besides tablet and big screens. There is HTML-guide (http://htmlguide.borger.dk/) for the development of integration solutions for Borger.dk, the HTML-guide is based on bootstrap. IN additional all new or redeveloped mandatory eServices must fullfill 24 minimum requirements for user-friendliness and accessibility of eServices. This is a minimum standard that is enforced (http://arkitekturguiden.digitaliser.dk/godselvbetjening).

Marta Kari Schawlann - Senior Advisor, Agency for Public Management and e-Government (Difi), Norway

4 February 2014

Topic 1: Goal of personalisation

The purpose of developing “My Page” in 2005 was to offer residents one gateway to all public services. All governmental agencies and municipalities were supposed to make their online services available through “My Page”, so it would be easier for residents to access the services. One advantage of “My Page” was that residents did not need to know which agency offered the different services. Another advantage was that citizens only had to authenticate once to access several services.The last years the portal existed it was not prioritized, and not developed further. Therefore the potential that such a personalized portal could have had was not exploited. But to a certain extent the portals aim was achieved. It was a collection of citizen centric services, it contained the possibility for the resident to customize their own "My Page" and it was an additional channel for online services from government agencies.

Information from the authentication was used to create a database of the “My Page” users. This database amongst other things contained information about language preferences, user settings in the portal and geographical affiliation at the municipality level. The information gathered was used to personalize the portal to the individual citizen. ‘My Personal Information’ is a function presently available on Norway.no. The function was previously available via the now closed MyPage site. When MyPage was closed down, most of the online services that were previously available there were transferred and presented on Norway.no as individual online services. ‘My Personal Information’, however, was transferred as a collective function and allows a

registered user to view data about them selves stored in, and gathered from, three different public registers:

- National Population Register, kept by the Norwegian Tax Administration – information about the user's registered home address
- National Vehicle Register, kept by the Norwegian Public Roads Administration – information about any registered vehicle the user might have
- Norwegian GP Register, kept by the Norwegian Health Economics Administration - information about which doctor (GP) the user is assigned to.

Topic 2: Benefits and obstacles of personalisation

The governmental agencies and authorities benefited from having more than one channel to offer digital services. For the users it was a benefit to find services in one place, without having to be familiar with how government is structured. Furthermore, it was easy to use because one only had to login once to access many online services (at the same security level).Since the portal has been shut down the existing statistics and analysis are no longer very relevant. This is a bit hard to remember what kind of obstacles did occur. But looking back there was no serious obstacles neither legal, financial, technical nor confidence wise. "My Page" was pioneering work, so obviously there were obstacles to be handled along the way.

Topic 3: Future of personalisation

"My Page" was closed down in May 2012. At the present date the Norwegian authorities have no plans for a new personalized "My Page". As of 6 April 2014, the collective function 'My Personal Information' will be replaced by 3 individual online services, from the public agencies responsible for them. This is in keeping with the format for presenting all online services on Norway.no.

Johannes Rund - Federal Chancellery of Austria, Marketing and Communication, HELP-Team

14 January 2014

Topic 1: Goal of personalisation

The very aim of the personalized HELP was to have single point of access with a single sign on (with mobile signature or signature card (Citizen Card = Bürgerkarte) in order to use several official procedures without any further identification or authentication (e.g. User ID and Password) This goal is totally fulfilled.

In the first version HELP (before Dec. 2011) provided a personal profile to be filled in in order to get displayed individual life situations. Nowadays the personalization is determined by the data provided from the signature (mobile, card), these are First Name, Family Name and Birthdate. From the profile only the ZIP Code remained in order to display the right local online forms.

Topic 2: Benefits and obstacles of personalisation

As well for the state, the organization as for the users the very benefit is to have a single point of access to several official procedures as mentioned above. For one of the procedures, the Central Arms Register (Zentrales Waffenregister; ZWR) the personalized HELP is the only access to this register. Until the End of June 2014, all owners of rifles (Category C) are forced to register them. As it is a cost free service the amount of registered users is increasing. Totally there are about 200.000 owners of such weapons.

The statistics below show the continuing increasing of registered users of the personalized HELP. The Central Arms Register started at October 2012.

	2011	2012			2013		
	Number of Users	Number of Users	Increase	Increase in %	Number of Users	Increase	Increase in %
January		3.808	344	9,9%	8.899	862	10,7%
February		4.159	351	9,2%	9.641	742	8,3%
March		4.466	307	7,4%	10.936	1.295	13,4%
April		4.735	269	6,0%	11.195	259	2,4%
May		4.986	251	5,3%	11.869	674	6,0%
June		5.220	234	4,7%	12.417	548	4,6%
July		5.432	212	4,1%	13.059	642	5,2%
August		5.683	251	4,6%	13.718	659	5,0%
September		6.029	346	6,1%	14.629	911	6,6%
October		**6.798**	**769**	**12,8%**	15.558	929	6,4%
November		7.513	715	10,5%	16.767	1.209	7,8%
December	3.464	8.037	524	7,0%	17.861	1.094	6,5%

As displayed the number of registered users had quintupled from the start in December 2011. We expect to get the majority of the focused owners of weapons.

The benefit for the state is also the increasing number of users of electronic signature (mobile and card-based) as a secure measure for identification and authentication. For the organization (HELP) the additional benefit is the increasing numbers of users and as a result of this the increase of page impressions and visits of the Citizen Portal HELP.gv.at The only obstacles that we are currently confronted with are to integrate more services (official procedures) on personalized portal e.g. FinanzOnline (Tax Declaration and so on). Expensive interfaces (because not the same portal protocols are in existence for all the procedures and portals) have to be created which is hard to do in times of decreasing budgets and financial consolidation.

Topic 3: Future of personalisation

The vision we have is to provide with personalized HELP **one single point of access** for procedures and portals that need unique identification and authentication. This could be official procedure as mentioned before as well as private applications

like online banking, insurance platforms social media portals, e-commerce platforms, partnership portals and much more. The graphic below shows this vision.

We try to provide the technical applications in order to give possible partners the opportunity to integrate their services in HELP. For the users our aim is to provide them a comfortable way of access to their favored services/portal with only one possibility of identification and authentication (Electronic Signature) so the knowing of many several and different User-IDs and Passwords would become dispensable. We work on this vision.

Appendix 3. Web-based User Satisfaction Survey

The Estonian State Portal eesti.ee personal view My Data user satisfaction research in English

1. I have used eesti.ee personal view My Data for the following:

- Checking the number and validity of documents
- Checking validity of car insurance
- Checking the vaccination date of the pet
- Downloading the photo of document
- Changing residence
- Ordering European Health Insurance card
- Forwarding my @eesti.ee address
- Saving my mobile number
- Checking my data
- Other

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	Do not wish to answer
2. In the future, I will use eesti.ee personal view My Data again to complete similar tasks.						
3. I will recommend eesti.ee personal view My data to others.						
4. On personal view My Data, I can quickly reach my goal.						
5. In my opinion, visiting eesti.ee personal view My Data is pleasant.						
6. The design and colors used of the personal view My Data are appealing.						
7. The overview of my data of the eesti.ee personal view My Data is useful for me.						
8. The overview of my data of the personal view My Data appear to be detailed enough.						
9. The contents found on						

the eesti.ee personal view My Data are written so that they are clearly understandable.						
10. I am very satisfied with the contents found on the eesti.ee personal view My Data.						
11. The information found on the eesti.ee personal view My Data is credible.						
12. I know what contents to expect on the eesti.ee personal view My Data.						

13. Please evaluate on scale 1-5 quality of personal view My Data compared to other services on eesti.ee. For example Query about identity documents, Query about driving licence, Ordering the European Health Insurance Card, Data and registration of a pet in LLR, Traffic insurance history, Registering a place of residence.

14. In your opinion, what could be improved on the personal view My data? Is anything missing on the personal view My Data https://www.eesti.ee/eng/mydata?

15. While visiting the personal view My Data, did you encounter any difficulties? If yes, what kind of difficulties?

The Estonian State Portal eesti.ee personal view My Data user satisfaction research in Estonian

1. Olen kasutanud eesti.ee Minu asjad järgnevateks tegevusteks:

- dokumendinumbri ja kehtivuse vaatamine
- autokindlustuse kehtivuse kontrollimine
- lemmiklooma vaktsineerimise kuupäeva kontrollimine
- dokumendifoto allalaadimine
- elukoha muutmine
- Euroopa ravikindlustuskaardi tellimine
- @eesti.ee aadressi suunamine
- mobiilinumbri salvestamine (SMS teavitused)
- oma andmete vaatamine
- muu

Ei nõustu üldse	Ei nõustu	Ei oska öelda	Nõustun	Nõustun täielikult	Ei soovi vastata

2. Tulevikus kasutan eesti.ee personaalset vaadet Minu asjad veel sarnasteks tegevusteks.

3. Soovitan ka teistel (näiteks pere, sõbrad, tuttavad) kasutada eesti.ee personaalset vaadet Minu asjad.

4. Portaali eesti.ee personaalne vaade Minu asjad võimaldab toiminguid teha kiiresti ja sama mugavalt kui näiteks rahaasjade ajamine internetipangas.

5. Arvan, et eesti.ee personaalse vaate Minu asjad külastamine on meeldiv.

6. Portaali eesti.ee personaalse vaate Minu asjad värvid ja disain on meeldiv.

7. Ülevaade minu andmetest eesti.ee personaalses vaates Minu asjad on kasulik ja mulle vajalik.

8. Ülevaade minu andmetest eesti.ee personaalses vaates Minu asjad on piisavalt detailne.

9. Informatsioon eesti.ee personaalses vaates Minu asjad on esitatud arusaadavalt.

10. Ma olen väga rahul personaalses vaates Minu asjad esitatud informatsiooniga.

11. Informatsioon eesti.ee personaalses vaates Minu asjad on usaldusväärne.

12. Ma oskan aimata, millist infot mulle kuvatakse eesti.ee personaalses vaates Minu asjad.

13. Palun võrrelge skaalal 1-5 (1 väga kehv, 5 väga hea) portaali eesti.ee vaate Minu asjad kvaliteeti teiste sarnaste teenustega eesti.ee lehel. Näiteks Isikut tõendavate dokumentide päring, Juhilubade päring, Euroopa ravikindlustuskaardi tellimine, Lemmiklooma andmed ja registreerimine LLR, Kliendi liikluskindlustuse ajalugu, Elukohateate esitamine.

14. Mida võiks teie arvates eesti.ee personaalses vaates Minu asjad paremaks teha? Kas midagi olulist on Teie arvates puudu eesti.ee personaalses vaates Minu asjad?

15. Kas eesti.ee personaalse vaate Minu asjad külastamisel oli raskusi? Kui, siis milliseid raskusi?

The Estonian State Portal eesti.ee personal view My Data user satisfaction research in Russian

1. Я использовал-(а) персональную страницу "Мои материалы" на eesti.ee для следующего:

- просмотр номера документа и срока его действия
- проверки срока действия страхования автомобиля
- проверки даты вакцинации домашнего животного
- скачивание фото документа
- изменение места жительства
- заказа Европейской карты медицинского страхования
- переадресации адреса @eesti.ee
- сохранения мобильного телефона (SMS-уведомления)
- просмотр личных данных
- Другое

Полностью не согласен	Не согласен	Затрудняюсь ответить	Согласен	Полностью согласен	Не желаю отвечать

2. В будущем я буду использовать персональную страницу "Мои материалы" на eesti.ee еще для аналогичных действий.

3. Я порекомендую другим (семье, родственникам, друзьям) использовать персональную страницу "Мои материалы" на eesti.ee

4. Использовать персональную страницу "Мои материалы" на eesti.ee можно так же быстро и так же удобно, как, например, в интернет-банке.

5. На мой взгляд, посещать персональную страницу "Мои материалы" на eesti.ee приятно.

6. Цвета и дизайн персональной страницы "Мои материалы" на eesti.ee приятны.

7. Услуги на персональной странице "Мои материалы" в eesti.ee полезны и нужны мне.

8. Услуги на персональной странице "Мои материалы" в eesti.ee кажутся довольно подробными.

9. Информация на персональной странице "Мои материалы" в eesti.ee представлена понятно.

10. Я очень доволен/ довольна представленной информацией на персональной странице "Мои материалы" в eesti.ee.

11. Информация на персональной странице "Мои материалы" в eesti.ee вызывает доверие.

12. Я могу предположить, какая информация доступна на персональной странице "Мои материалы" в eesti.ee.

13. По шкале от 1 до 5, сравните качество персональной страницы "Мои материалы" с другими похожими услугами в eesti.ee Например: Запрос об удостоверениях личности, Запрос относительно водительских прав, Заказ европейской карточки медицинского страхования, Данные о домашнем животном и внесение животного в регистр, История дорожного страхования клиента, Регистрация места жительства.

14. Что, по Вашему мнению, можно сделать лучше на персональной странице "Мои материалы" в eesti.ee? Как вы думаете, отсутствует ли что-то важное на персональной странице "Мои материалы" в eesti.ee?

15. При посещении персональной страницы "Мои материалы" у Вас возникли какие-то проблемы? Если да, то какие?

Appendix 4. Results of the Survey

id		11	12	13	14	15	16	17	18	19	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.
11	et	Y					Y	Y			5	5	4	4	5	5	3	5	5	5	5	5
12	et				Y					Y	4	4	4	4	4	4	3	4	3	4	4	4
14	et	Y			Y	Y		Y		Y	5	3	4	4	5	4	3	4	5	5	4	4
15	et					Y		Y	Y		3	4	4	2	4	4	2	2	2	2	2	3
18	et	Y					Y				4	3	4	3	3	4	4	2	3	4	4	4
19	et						Y			Y	4	5	4	4	3	4	4	4	3	5	4	4
20	et	Y	Y		Y	Y	Y	Y	Y		4	4	4	4	3	4	4	3	4	4	3	4
23	et						Y	Y		Y	4	4	4	4	4	3	2	4	4	4	2	3
25	et									Y	4	4	4	4	4	4	4	4	4	4	3	4
27	et	Y	Y		Y	Y	Y	Y		Y	5	4	4	4	4	4	4	4	4	4	4	4
30	et		Y			Y				Y	4	4	4	4	4	4	4	4	4	4	4	4
31	ru	Y						Y		Y	5	5	5	5	4	5	5	5	4	5	5	4
32	et	Y	Y	Y						Y	5	5	4	4	4	4	4	4	4	4	3	4
33	et									Y	5	5	5	5	4	5	4	5	4	5	4	5
34	et	Y					Y			Y	4	3	2	2	2	4	4	4	4	4	2	4
36	et		Y					Y	Y	Y	5	5	4	4	4	4	4	4	4	4	4	4
38	et				Y	Y	Y	Y		Y	4	4	4	4	5	5	4	4	4	5	2	4
39	et						Y	Y		Y	3	2	1	1	3	3	2	2	1	4	1	3
40	ru				Y					Y	5	3	3	4	2	5	2	3	4	4	2	4
41	ru	Y	Y			Y				Y	4	5	4	4	5	5	4	4	4	5	4	5
42	et									Y	5	3	4	4	5	4	4	4	4	5	4	4
43	et	Y					Y	Y			5	5	3	3	4	4	4	4	3	3	3	3
44	et					Y		Y		Y	4	4	2	4	4	4	4	4	4	5	4	4
48	et	Y				Y	Y	Y	Y	Y	5	5	4	4	5	5	5	4	4	5	3	4
51	et	Y	Y					Y	Y		4	4	2	3	4	5	2	4	4	5	2	3
52	et	Y			Y		Y		Y	Y	5	4	4	3	4	4	3	4	3	4	3	4
58	et										4	4	3	4	4	4	4	4	4	3	4	4
60	ru					Y					5	5	5	5	4	5	5	5	5	5	5	5
65	ru						Y	Y		Y	4	4	3	4	3	4	4	4	4	4	3	4
72	et	Y				Y	Y		Y	Y	4	4	3	4	4	4	4	4	4	4	4	5
76	et						Y			Y	5	5	5	5	5	5	5	5	5	5	5	4
80	et						Y	Y		Y	4	4	1	3	4	2	1	2	2	5	3	3
87	et				Y						3	2	1	2	4	4	1	3	2	4	2	2
91	ru	Y	Y				Y		Y		5	5	5	4	4	4		5	3		4	5
95	et									Y	4	4	4	2	4	4	4	2	2		4	3
98	ru	Y			Y				Y	Y	4	4	4	3	4	3	3	4	3	4	3	5
99	et	Y	Y					Y		Y	3	3	1	2	2	1	1	3	1	2	3	2
101	et	Y						Y		Y	5	4	4	4	4	4	4	4	4	4	4	4
102	et	Y						Y		Y	5	4	4	4	4	5	3	4	4	5	5	4
103	et						Y				4	3	5	4	4	2	2	4	2	5	3	3
104	et	Y	Y			Y	Y	Y		Y	5	5	4	5	5	5	5	4	5	5	4	5
107	et						Y			Y	4	4	3	4	4	5	4	4	4	4	4	5
109	et	Y				Y				Y	5	5	5	3	4	5	5	4	3	5	5	4
110	et	Y								Y	4	4	4	4	4	5	4	4	4	4	4	5
113	et				Y						4	3	3	4	4	4	4	4	4	4	3	4
115	et	Y				Y	Y	Y		Y	5	4	4	4	4	4	4	4	3	4	2	4
118	et				Y			Y		Y	5	5	4	5	5	5	5	5	5	5	5	4
120	ru	Y			Y	Y	Y	Y	Y	Y	5	5	5	4	4	5	4	4	2	4	2	4

121	et	Y	Y		Y		Y	Y	Y	Y	5	5	5	4	4	5	5	4	4	5	4	4
125	et	Y	Y			Y					4	4	4	4	4	4	4	4	4	4	4	5
126	ru	Y					Y		Y	Y	3	3	4	4	4	4	4	4	4	4	4	3
129	ru	Y				Y				Y	5	4	5	4	5	5	5	5	4	5	3	5
136	ru	Y									3	4	4	4	4	4	4	4	4	5	4	5
143	et	Y	Y			Y		Y	Y	Y	4	3	2	2	4	2	2	5	1	5	3	3
144	et	Y		Y	Y				Y	Y	4	4	4	2	2	4	2	2	2	4	4	3
147	et					Y		Y		Y	4	4	5	4	4	4	3	3	3	5	2	3
149	ru	Y				Y				Y	5	4	5	5	4	4	3	4	5	5	3	4
153	ru	Y					Y	Y	Y	Y	4	4	4	4	1	4	5	3	3	2	2	
154	ru									Y	4	4	4	3	4	4	4	4	4	4	4	5
157	et	Y				Y	Y		Y	Y	4	4	4	4	2	4	2	2	2	5	4	3
160	et	Y									3	4	4	4	4	4	4	4	4	4	4	4
166	et										3	3	3	3	4	2	3	3	3	5	4	4
168	ru									Y	3	4	4	4	4	4	4	4	4	4	4	4
170	et							Y	Y	Y	5	3	5	5	5	4	2	4	2	4	4	4
173	et					Y		Y			5	5	5	5	1	5	5	5	5	5	5	5
184	et	Y				Y			Y	Y	4	4	4	4	4	4	3	4	4	4	4	4
187	et	Y								Y	4	4	4	4	4	4	4	4	4	4	4	5
194	et					Y				Y	4		4	4	4	4	2	4	3	4	4	4
195	et									Y	5	4	4	4	4	5	4	4	4	4	4	4
197	et						Y	Y		Y	5	3	4	4	3	4	3	4	4	5	4	4
198	ru	Y						Y		Y	4	4	3	2	2	4	2	2	2	4	2	3
199	ru						Y	Y		Y	4	4	4	4	4	4	4	4	4	4	4	5
202	et	Y	Y					Y			4	3	4	4	4	5	5	4	4	3	3	4
203	et										3	2	5	5	4	5	4	4	4	5	4	5
204	et	Y	Y		Y		Y	Y		Y	4	4	4	4	5	5	5	5	5	5	5	5
207	et	Y								Y	3	3	2	3	4	4	2	4	2	4	1	3
209	et	Y	Y		Y	Y	Y	Y	Y	Y	5	4	4	4	4	4	4	4	4	4	4	5
211	et							Y		Y	3	4	4	4	5	3	3	4	4	4	3	4
212	et	Y	Y				Y	Y		Y	4	4	2	2	4	2	4	4	3	4	4	4
213	et	Y				Y	Y	Y	Y	Y	5	5	4	4	2	4	5	4	4	5	3	3
214	et	Y	Y			Y				Y	5	4	4	4	4	4	4	4	4	4	4	4
215	ru	Y					Y			Y	4	4	4	4	5	5	2	4	4	4	3	5
216	et	Y				Y				Y	4	4	4	4	3	4	3	4	4	4	3	4
217	et	Y	Y								5	4	5	4	3	4	2	4	4	4	4	4
218	et		Y				Y	Y		Y	5	5	5	5	4	5	4	4	4	4	4	4
219	ru										3	4	4	3	4	4	3	4	3	4	3	4
220	et	Y	Y				Y			Y	4	4	4	4	4	4	2	4	4	4	4	5
221	et						Y			Y	5	5	2	2	4	5	3	2	3	4	3	3
222	et										3	4	3	4	4	4	4	4	4	4	4	4
223	ru	Y					Y				3	4	2	3	3	4	3	4	4	4	4	4
224	et								Y		4	3	2	2	4	2	3	2	2	4	4	2
225	et	Y			Y				Y	Y	4	4	4	4	5	4	4	5	4	4	4	4
226	et						Y	Y		Y	5	4	5	5	5	5	4	5	5	5	5	4
227	ru										4	4	4	4	3	5	4	4	4	4	4	5
229	et	Y	Y		Y		Y	Y	Y	Y	5	4	4	4	4	4	4	4	4	4	4	5
231	et	Y								Y	4	4	4	4	4	5	5	4	4	4	3	5
233	et	Y	Y			Y		Y		Y	5	4	4	4	5	5	5	5	4	5	5	5
234	et	Y			Y	Y		Y		Y	4	5	2	3	4	5	2	2	2	4	4	4
235	et	Y	Y			Y				Y	4	4	4	4	4	4	4	4	4	4	4	5
236	et	Y	Y		Y	Y		Y			5	5	5	5	5	5	3	4	3	3	3	
237	et							Y	Y	Y	5	5	4	4	5	5	3	4	4	5	2	4
239	et						Y	Y			4	3	2	4	3	4	2	3	3	5	4	3

240	ru										4	4	3	3	3	4	3	3	4	4	3	4
241	ru									Y	5	4	5	5	5	5	4	4	5	3	4	4
242	et	Y	Y			Y				Y	5	4	5	5	4	5	5	4	5	5	4	
244	et		Y				Y	Y		Y	5	5	4	4	3	5	3	4	3	5	3	4
246	et	Y								Y	3	4	3	4	4	3	4	4	3	4	3	3
247	et	Y	Y		Y	Y		Y	Y	Y	5	5	4	5	4	5	5	4	5	4	5	4
250	et	Y						Y		Y	4	4	4	4	4	4	4	3	3	4	3	4
252	et	Y									4	4	4	4	4	4	4	4	4	5	4	4
253	et	Y					Y	Y	Y	Y	4	4	4	4	4	5	3	3	4	4	4	4
254	et									Y	5	4	4	3	3	4	3	4	4	4	3	3
255	et	Y				Y		Y	Y	Y	5	5	5	5	5	5	5	5	5	4	5	5
256	et	Y					Y	Y	Y	Y	5	5	5	5	5	5	5	5	5	5	5	4
257	et	Y				Y	Y	Y	Y	Y	5	4	2	4	4	4	4	2	2	2	2	
258	et						Y	Y		Y	5	5	4	5	4	4	3	3	3	3	3	4
259	et									Y	5	5	4	4	4	4	4	4	4	4	3	
260	et	Y				Y		Y		Y	4	5	5	5	4	5	3	4	5	4	5	4
261	et									Y	5	5	5	5	4	4	4	4	5	4	4	4
262	et		Y				Y			Y	5	5	4	4	4	4	4	4	3	4	2	4
263	ru	Y					Y			Y	4	4	4	4	4	5	4	5	4	4	4	4
267	et	Y								Y	5	5	4	5	5	5	2	3	4	4	5	4
270	ru									Y	4	4	4	4	4	4	4	4	4	4	4	5
271	ru	Y								Y	4	4	4	3	4	4	3	2	3	2	2	3
272	et				Y			Y		Y	4	5	4	4	3	4	5	5	5	5	5	4
273	et						Y			Y	4	4	4	4	3	4	4	4	3	4	4	4
274	et	Y	Y							Y	3	2	1	2	3	4	4	3	3	3	3	2
276	et	Y									5	5	5	5	5	5	5	5	5	5	5	5
278	ru	Y	Y							Y	5	5	5	5	4	5	5	5	5	5	5	5
279	et	Y				Y		Y		Y	4	3	4			3	4	4	4	2	3	3
280	et	Y						Y			5	5	4	3	2	2	2	3	3	5	4	4
281	et		Y				Y	Y	Y	Y	4	4	4	4	4	5	4	4	4	4	4	5
283	et	Y								Y	3	3	4	4	5	4	2	4	3	4	3	4
284	et	Y				Y	Y	Y		Y	5	5	4	4	4	4	4	4	4	5	4	4
289	et	Y									4	3	2	2	3	4	2	5	4	1	1	2
291	et						Y		Y		4	4	4	4	3	5	3	4	4	4	3	5
293	et	Y	Y					Y		Y	4	4	3	4	4	4	4	4	4	4	3	4
294	et									Y	4	4	4	4	4	4	4	4	4	3	4	4
297	et	Y								Y	4	4	4	4	3	4	4	4	4	4	3	3
299	et		Y				Y	Y		Y	5	4	4	4	4	4	4	4	4	3	3	4
300	et	Y								Y	4	3	4	4	4	4	4	4	4	4	4	4
302	et						Y			Y	4	4	4	4	3	4	4	4	4	4	4	4
306	et	Y						Y		Y	5	5	5	5	5	4	4	4	5	5	5	5
308	et	Y					Y			Y	5	4	2	4	4	4	2	3	3	3	2	4
310	et	Y			Y		Y	Y		Y	5	4	5	4	4	4	4	4	4	4	4	5
313	et	Y	Y				Y			Y	5	5	4	4	4	5	4	4	4	4	4	4
314	et		Y				Y	Y		Y	5	4	4	4	3	4	4	4	4	3	4	4
315	et						Y			Y	5	4	4	4	4	4	4	4	4	4	4	5
317	et	Y			Y					Y	4	4	4	4	4	4	4	4	4	4	3	4
320	et									Y	4	4	3	4	4	4	2	4	3	4	3	3
321	et	Y						Y	Y	Y	4	4	4	4	4	4	4	4	4	4	4	3
322	et	Y	Y		Y		Y	Y		Y	5	5	4	5	4	5	4	4	4	5	4	4
324	ru	Y	Y							Y	5	5	5	5	5	5	5	5	5	5	5	5
325	et									Y	4	4	4	4	4	5	4	3	3	3	3	4
326	et					Y	Y	Y		Y	5	4	4	4	3	4	2	4	4	5	4	4
327	et									Y	4	4	2	3	2	2	3	2	3	4	3	3

328	et	Y			Y		Y	Y		Y	5	5	4	4	3	4	4	4	4	4	2	4
331	et		Y						Y	Y	5	4	4	3	4	4	4	3	4	5	4	4
332	et										4		3	3	3	4	2	4	3	5	3	4
334	et		Y					Y		Y	4	4	3	4	4	4	4	4	4	4	4	4
336	et	Y	Y						Y	Y	4	4	4	4	4	4	4	4	4	4	4	4
337	et	Y	Y					Y		Y	4	4	4	3	4	5	4	4	4	4	3	4
338	et										3	3	4	3	3	3	3	3	3	3	4	
341	et									Y	5	3	4	4	3	5	4	4	4	3	3	4
343	et	Y				Y		Y	Y	Y	4	4	4	4	3	4	4	4	4	4	4	4
344	ru	Y						Y		Y	4	4	5	5	5	5	5	4	4	5	4	5
347	et							Y		Y	4	3	2	2	4	4	2	2	2	4	2	3
355	et	Y								Y	5	4	2	3	4	3	2	2	1	4	3	3
357	et	Y			Y			Y	Y	Y	5	5	5	5	5	4	4	4	4	4	4	4
359	et	Y	Y				Y	Y		Y	4	4	5	4	5	4	3	4	4	4	4	4
360	et				Y			Y		Y	4	4	2	3	3	4	2	2	2	4	4	3
363	et					Y		Y	Y	Y	4	4	3	4	3	4	3	3	3	4	3	3
365	et					Y	Y			Y	4	4	4	4	3	4	2	3	4	5	4	3
366	et				Y			Y	Y	Y	5	5	4	5	4	4	4	4	4	4	4	4
369	et		Y							Y	5	4	5	4	4	4	4	4	4	4	4	4
370	et	Y				Y	Y	Y		Y	5	5	4	4	3	5	4	4	4	4	4	4
371	et										5	5	5	5	4	5	5	5	5	5	3	5
373	et	Y				Y		Y	Y	Y	5	4	4	4	4	4	4	4	4	4	4	4
374	et	Y	Y								5	5	4	4	5	4	1	4	2	5	4	4
375	et	Y	Y				Y		Y	Y	5	5	4	4	4	4	4	4	4	4	4	4
377	ru	Y								Y	4	4	4	4	4	4	5	5	5	4	4	5
379	et	Y	Y							Y	4	4	4	4	4	4	4	4	4	4	4	4
380	et									Y	5	4	5	4	5	5	5	5	4	5	4	5
383	et	Y							Y	Y	4	4	4	4	4	4	4	4	4	3	4	4
384	et	Y	Y			Y		Y	Y	Y	5	5	4	5	4	5	4	4	4	4	4	4
385	et					Y	Y			Y	5	3	2	2	4	5	4	2	2	4	4	3
387	et	Y	Y				Y	Y			5	4	3	4	5	4	2	4	4	3	4	4
388	et	Y	Y				Y	Y		Y		4	5	2	2	3		3		4		
398	ru									Y	3	4	4	4	4	4	2	2	2	3	3	3
401	et	Y						Y		Y	4	4	4	4	4	4	4	4	4	4	3	4
402	ru	Y	Y			Y		Y		Y	4	4	3	3	4	5	4	5	4	3	3	4
403	et									Y	4	4	4	4	4	3	4	4	4	4	2	3
406	et						Y	Y	Y		3	1	1	1	4	3	1	1	1	4	1	2
407	et							Y			3	4	4	3	3	4	4	4	3	4	4	4
408	et						Y			Y	4	3	4	4	4	2	2	4	2	3	2	3
409	et	Y	Y					Y	Y	Y	5	5	5	4	3	4	4	3	3	3	3	5
410	et									Y	3	3	5	4	3	4	5	4	4	4	4	4
411	et						Y			Y	4	4	4	4	4	4	4	4	4	4	4	3
412	et	Y					Y			Y	5	5	5	5	4	3	5	5	4		4	5
413	et							Y		Y	4	3	3	4	4	4	3	5	3	4	4	4
414	et	Y			Y					Y	4	5	4	4	5	4	4	5	4	4	4	4
420	et	Y					Y	Y		Y	4	4	4	3	3	4	4	4	4	4	3	3
421	et	Y						Y	Y	Y	5	4	4	4	4	4	4	4	4	4	3	5
424	et		Y				Y	Y	Y	Y	5	5	4	4	5	4	4	4	4	4	4	4
425	et	Y			Y	Y	Y	Y		Y	5	5	4	4	4	4	4	4	4	4	4	5
426	et		Y	Y	Y			Y		Y	5	4	5	4	3	4	3	4	4	4	4	4
427	et	Y	Y		Y						5	5	4	5	5	4	4	5	5	4	5	4
430	et	Y					Y	Y		Y	4	3	2	4	5	4	4	4	3	5	2	3
431	et	Y	Y		Y		Y	Y	Y		4	4	4	4	4	4	4	4	4	4	4	4
433	et		Y								4	4	4	4	4	4	4	2	2	4	4	2

434	et						Y			Y	4	5	4	4	4	4	4	4	4	5	4	5
435	et						Y	Y	Y	Y	4	4	2	4	2	4	2	2	3	4	2	4
440	et					Y		Y		Y	5	4	2	4	4	4	4	2	2	5	1	3
446	et	Y			Y						5	5	5	4	4	4	4	4	4	4	4	4
447	et	Y				Y				Y	4	1	1	1	4	1	1	1	1	1	1	
448	ru	Y			Y		Y	Y		Y	4	4	2	3	3	2	2	2	3	4	3	2
452	et					Y					5	5	5	5	4	4	4	4	4	4	4	4
453	ru										5	3	4	4	4	4	5	4	4	4	4	5
454	et	Y	Y								5	5	4	4	4	4	4	5	5	5	4	5
455	et	Y								Y	3	5	4	4	4	4	4	5	5	5	3	4
458	et										5	5	5	5	4	5	4	4	4	3	4	5
459	et		Y							Y	5	5	4	4	4	5	4	4	4	4	4	4
460	et	Y	Y					Y	Y		5	4	5	5	5	5	4	4	5	5	5	4
465	et							Y	Y	Y	4	4	2	4	4	4	2	4	2	4	4	4
466	et	Y	Y			Y	Y	Y	Y	Y	4	4	4	4	4	4	3	4	4	4	4	4
468	et	Y	Y				Y	Y		Y	4	2	1	2	4	4	2	1	1	2	4	2
470	et	Y	Y			Y		Y		Y	5	5	5	5	5	5	4	5	4	3	4	5
475	ru	Y				Y				Y	5	5	5	4	4	4	2	2	3	4	3	4
480	et	Y			Y	Y	Y	Y	Y	Y	5	3	4	5	2	5	5	5	4	5	2	4
483	et									Y	5	4	2	4	4	5	4	5	4	4	5	5
485	et	Y								Y	4	4	3	3	4	4	3	3	3	4	4	3
486	et					Y	Y			Y	5	4	3	4	2	2	2	4	2	4	3	2
491	et									Y	4	4	4	4	4	4	4	4	4	4	4	4
492	et				Y	Y	Y	Y		Y	4	5	4	4	4	4	4	4	4	4	4	4
495	et	Y			Y		Y	Y	Y	Y	5	5	5	5	5	5	4	5	5	5	5	5
497	et	Y				Y	Y	Y	Y	Y	4	4	3	4	4	5	2	2	4	3	3	3
499	ru	Y	Y				Y			Y	5	5	5	4	4	5	4	4	4	5	5	4
504	et		Y				Y	Y		Y	5	5	2	3	5	3	2	5	3	5	3	4
510	et					Y		Y			5	5	5	5	5	4	4	5	5	5	4	4
511	ru										1	1	2	2	4	1	2	1	1	4	3	
514	ru	Y	Y							Y	3	3	4	3	4	4	3	3	4	4	3	4
516	et				Y			Y		Y	4	5	5	5	4	5	4	5	5	5	5	4
521	et	Y						Y		Y	4	5	5	5	6	5	4	5	4	5	2	4
522	et					Y	Y			Y	4	4	4	4	4	4	2	4	3	4	4	4
524	et						Y				3	3	3	3	3	4	3	4	4	4	3	
537	ru									Y	4	3	3	4	3	4	4	3	4	4	3	4
542	et	Y					Y	Y		Y	4	4	4	4	3	4	4	4	4	4	3	
544	et	Y				Y		Y	Y		5	5	4	4	4	4	3	4	3	4	4	
547	et	Y								Y	5	5	4	5	4	4	4	4	4	5	4	4
551	ru									Y	1	1	1	2	4	2	4	1	2	2	2	
555	ru							Y			4	4	4	4	4	4	4	4	4	4	4	4
566	et	Y	Y					Y		Y	4	4	5	4	5	4	4	4	3	5	4	4
583	et	Y									4	4	4	4	4	4	4	4	4	4	4	4
584	ru	Y	Y	Y	Y	Y	Y	Y	Y	Y	5	5	1	1	1	5	1	1	1	1	1	1
585	en	Y					Y	Y	Y	Y	4	4	2	2	5	4	3	5	4	5	3	5
587	et	Y			Y			Y	Y	Y	4	3	3	3	2	4	3	2	3	3	2	2
590	et	Y	Y				Y	Y		Y	5	5	5	5	4	5	4	5	5	5	5	4
595	et	Y			Y		Y	Y	Y	Y	5	5	5	5	4	4	4	5	5	4	4	5
597	et	Y				Y	Y	Y		Y	5	5	5	4	4	4	4	5	4	4	4	4
603	et										3	2	3	4	4	3	2	2	2	4	3	3
606	et	Y									5	5	5	5	5	4	5	5	4	5	4	4
618	et				Y		Y	Y		Y	5	5	2	2	5	2	2	2	1	5	3	4
619	et										3	4	3	2	2	2	3	3	2	3	3	3

622	et		Y			Y		Y		Y	5	5	5	5	5	4	5	5	4	5	4	4
623	en	Y			Y			Y	Y	Y	4	2	3	3	2	4	3	5	4	4	4	4
624	ru	Y	Y				Y	Y		Y	5	4	4	4	4	4	4	4	4	4	4	4
626	ru	Y	Y	Y	Y	Y	Y	Y	Y	Y	5	5	5	5	4	4	4	4	4	4	3	4
628	ru						Y	Y			4	3	4	3	4	3	4	4	4	3	3	4
629	ru									Y	4	4	4	4	4		4	4	4	4	4	5
633	en					Y				Y	5	5	4	4	4	4	4	2	3	2	4	4
635	ru	Y				Y		Y	Y	Y	5	5	5	5	5	5	5	5	5	5	5	5

id	1 (teised)
11	haridustaseme muutmine
58	pole vajadust olnud siiamaani kasutada
87	liiga vähe valikuid; kui kogu süsteem küllaltki puudulik, võiks personaalsel lehel olla vähemalt paar varasemate otsingutega seoses linki, et vajaliku info suure vaevata ja aega kulutama üles leida.
95	Riigieksamite tulemused
115	A1 sotsiaalkindlustuse dokumendi allalaadimine
166	ei ole vajadust olnud kasutada
203	ei oska
213	Ilmselt oli siitkaudu ka autosõidu juhendaja taotluse tegemine
216	huvi, millist infot üldse on võimalik saada
219	возможно, когда раньше заходил, было плохо с поддержкой на русском языке
221	kehtivate digiretseptide vaatamine
222	Ei teadnud sellise asja olemasolust
224	retseptide vaatamiseks
227	Медицинская страховка
240	Пока не надо было.
259	retseptid
267	retseptid
280	registrite andmete kontroll
300	toetus
313	digretseptide vaatamine
320	pensioniküsimuste uurimiseks
324	объективная информация
332	alles uus asi, poe pärast selle tekkimist olnud vaja seal toimetada
338	pole vajadust tundnud
371	ei teadnud sellisest portaalist
374	soovisin muuta kontonumbrit, kuid ei leidnud keskset süsteemi, kus see kirjas võiks olla.
388	Retseptid
421	digiretsept
440	ei olnud teadlik, polnud vaja
446	digiretseptid
453	поиска инфо
458	retsepti vaatamine
466	mu pere
511	мало информации всё итак всё всем понятно бесполезный сайт
583	perearsti info
603	ei ole olnud põhjust/vajadust kasutada
619	ei ole vaja olnud
626	info

id	14.	15.
19	info maksuvõla ja täitemenetluste kohta	pigem on raskus erinevate rollide jälgimisel, kui on kdaniku roll ja ettevõtja roll
23	Ülesehitus võiks olla lihtsam ja nn eelvaade, ei peaks mõistatama, mida ühest või teisest kohast leida.	Õige asja ülesse leidmiseks tuleb mitu linki läbiklõpsata.
25	Mobiil-ID sertifikaate Minu asjades ei ole kuigi Facebooki pildil oli see olemas. Mobiil-ID sertifikaatide aegumisest peaks ka teavitama. Juhuslikult sain teada panga lehelt aga kui mul poleks sinna asja olnud, sest maksed toimuvad automaatselt, siis polekski teada saanud. Üldiselt on teavituste valik väga väike. Võiks rohkem olla. Uusi teenuseid pole juurde tulnud, sest valik Uutest e-teenustest teavitamise teenus ei ole aastaid midagi teada andnud. Ma ei saa aru ka Politsei pressiteadetest aga ju on need mingiks erakordseks olukorraks.	
33	Rohkem personaliseerimisvõimalusi - et kõiki eesti.ee teenuseid saaksin potentsiaalselt oma esilehele lisada	
34	võiks lisada info koolide kohta. ka otselingi SAIS-i	Pidevalt ilmuvad veateated, kui tahaks midagi konkretset ära teha, näiteks Euroopa ravikindlustuskaarti tellida. Aga veateated ilmuvad üldse kogu aeg, kui eesti.ee portaali kaudu asja hakata ajama. vahest läheb 3-5 päeva, enne kui saab ilma veateateta midagi ära teha.
38	Soodustavaid riigiteenusei ja informatsioon kohustustest, et saaks kohe sellelt vaatepilt ka teenuseid kasutada	Ei
39	Info saamine segane. Menüüs on täiesti mõttetuid teenuseid (kalender? mille jaoks, kellele? lingid? mis lingid? mingit selgitust ka juures ei ole, miks või kuidas neid kasutada), mida niikuinii keegi ei kasuta ja mis raskendab tavalisel inimesel menüüs orienteerumist veelgi.	ID kaardiga sisselogimise keskkond ei toimi igas brauseris ning sõltub mõnikord lisaks veel sellistest detailidest nagu tuule suunast vms. Kunagi ei tea ette, kas saan sisse või mitte, ning ID abitelefoni asjapulgad ei oska abi anda.
41	Kõik on korras ja arusaadav.	Probleemid ei tekkinud.
42	ei oska pakkuda midagi	ei
51	Rohkem andmeid, mida saaks sealt vaadata.	
58	Minu arvates on kõik isikule vajalik info olemas ja kättesaadav. Seetõttu ei oska midagi lisada.	Raskusi ei esinenud.
72	võiks olla tööga seotud asjade infot olla ka rohkem	raskusi pole kõik muidu ok
76	Olen rahul selle portaali tööga	
80	Pealkiri "kodu ja kinnisvara" tekitab ootuse, et selle alt võiks leida enamat kui vaid elukoha aadressi. otsisin mulle kuuluva kinnistu andmeid (viidet kinnistusraamatule), mida sealt ei leidnud. "Seadete" all on aadressivorming vigane - maja numbrile ei pea järgnema kriipsu, kui korterinumbrit ei ole. "Tervishoid" all võiks olla ka laste perearsti andmed (ideaalis ühes perearstikeskuse kontaktandmetega), samuti võiks seal olla link väljastatud ravimiretseptidele.	Mitme lingi avamisel sain veateate "Portaali poole pöördumisel tekkis viga". Veateate tekst on arutult kantseliitlik ja kõlab, nagu plaanitaks vähemalt kriminaalmenetlus algatada (inglise keeles on veel hullem).
87	Rohkem suunavaid linke, rohkem valikuvõimalusi.	Ma pole vanema generatsiooni esindaja, kellest enamatel puudub arvuti kasutamise oskus, vastupidi. Portaali personaalse vaate Minu asjad vastu mul konkreetseid pretensioone ei ole, kuivõrd tahaksin välja tuua, et kogu süsteem on väga keeruline ja päringuid tehes kulub liiga kaua aega (teinekord on otsingud ka tulutud). Kindlasti on eesti.ee asendamatu portaal, ent selle kasutamine võiks olla kasutajasõbralikum (sh tuleks kontrollida linkide töökorras olemist, allalaadimiseks mõeldud materjalide korrektsust). Mul on esinenud mitmeid olukordi, kus leian eesti.ee portaalilt vigu: nt probleemid andmetega ID-kaardi kohta; õppestaatust tõestava info kandeprobleemid; probleemid eksamitulemuste allalaadimisega; suur ajakulu leheküljel otsingut teostades (keeruline leida seda, mida otsid). P.s. Antud kommentaar ei puuduta otseselt personaalset vaadet Minu asjad, pigem võimaldas anda hinnang kogu süsteemi kohta.
101	Ei oska täpsustada	Ei ole raskusi
103	Ennustav käitumine - esile tuua neid asju, mille vastu mul võiks olla rohkem huvi. Analoogselt peaks olema juurdepääs	

	pea kogu informatsioonile, mida riigiportaal endas sisaldab.	
104	Tervisetõendi kehtivus (Liikluslubade jaoks) vbl. ka pereliikmete info: Laps, lapse lasteaed, kool. Minu andmete all ka töökoha info?	Ei, kuvatud ühel lehel ja mugav kasutada.
107	Laste andmete juures võiks olla ka nende registreeritud elukoht, välja antud / kehtivad dokumendid ja Euroopa ravikindlustuskaardi kehtivus. ID-kaardi kehtivusaeg: kui kehtivuse lõpuni on jäänud vähem kui 2 kuud 8näiteks), siis võiks kehtivuse kuupäev näit. punaseks minna, et juhtidada tähelepanu peatsele kehtivuse lõpule. Mõte: "Minu asjad" vaates võiks olla erinevate kategooriate näitamise või mittenäitamise võimalus. Näit haridusega seotud andmed, eesti.ee kaudu esitatud dokumentide staatus jne. Ehk et asja mõte selles, et on infot, mis mingil eluetapil on oluline ja siis saad seda oma asjade vaatesse lisada, et kohe kui minu asjadesse sisse logid, näed, kas on mingites kategooriates mingeid muutusi toimunud.	Ei ole olnud.
109	Rohkem isikuandmeid ühes kohas koos võiks olla.	Ei
110	Üldiselt on kõik arusaadav ja õige. Ainult see info, kuhu @eesti.ee meilid on suunatud, on eksitav. Seal näitab kõiki aadresse, kuhu kunagi on e-post suunatud. Peaks näitama ainult seda aadressi, kuhu e-post praegu on suunatud.	Ei olnud.
144	Jah, kuna asju on palju, siis ei ole need kergelt leitavad. Ja osa andmeid on valed, kuid see on juba erinevate ametkondade valeandmed. Neid kahjuks ei saa parandada siit otse.	
153	пока не знаю,	
157	Miks ei ole võimalik kohe näha minu isiklike dokumentide all ka notaris tehtud lepinguid? Miks peab neid otsinguga EESTI.ee lehelt taga ajama? Loogiline ju oleks et need on isiklike dokumentide alla kuuluvad?	Asjade keidmisega on endiselt raskusi, notariaalse lepingu leidmine menüüdest osutus võimatuks, alles vabaotsinguga "notariaalne" leidsin. Plaun tehke asi loogilisemaks nt "Minu lepingud" menüü lisamisega "Minu dokumentide alla.
166	ei tea kommenteerida seda lehte	ei ole raskusi
184	Hetkel ei tule midagi olulist meelde.	Pole raskusi täheldanud.
194	Praegu seal olevad "Kontrolli kehtivust" linkide aemel võiks ju kah olla juba kehtiv/kehtetud vms konkreetne info.	Ei ole eni olnud. Eesti.ee külastamisega on üldiselt raskusi, kuna sinna ei saa pikemat aega otse ID kaardiga sisse vaid peab minema läbi panga. Mac OS X + Firefox. Samas muud kohad töötavad kenasti (pank, emta.ee, energia.ee jne)
195	Ei oska öelda, ei näe puudusi. Kõik vajalik info on kättesaadav.	Ei ole raskusi.
199	vse est	net
202	samas vaimus jätkata	ei oli raskusi
203	kõik ok	ei ole raskusi
207	Miks on lehel SSL viga? ssl_error_handshake_failure_alert	Miks ei näidata kohe dokumendi või muid olulisi andmeid ja selleks peab ikka klikkima mingit linki? Tore on küll jah, et kõik vajalik on ühes koos ja väljas kuid milleks peab ikka minema kuhugi edasi teisele lehele?
212	eesti.ee ise ei ole tihti kasutatav. On tundlik brauserite suhtes, ei avane alati, annab müstilisi veateateid, ei õnnestu sisestada soovitud linnukest jne. Sellise teenusega ei saa elus arvestada, seda võib uudishimust vaadata. Pole töövahend	JAH
213		Alati ei tea, kuhu ja kuidas edasi liikuda.
214	Hetkel ei tule midagi meelde, mida võiks parandada.	Ei olnud
215		ei
216	Näidised täidetuna, nagu on näiteks bussipileti ostmiseks, kus on ette juba lahtrid näitlikult ära täidetud. Oma töö juures (raamatukogus)inimesed ikka kahtlevad, kas on õigesti täitnud ja kui nad näeksid konkreetse näite varal, kuidas seda teha, siis saaksid nad oma hirmust üle.	
217	ei oska öelda	ei olnud
218		ei olnud

219	затрудняюсь сказать	нет проблем
221		Navigeerimine (arusaamine, kust kuidas ja kuhu pääseb).
224	tervise osa võiks olla konkreetsemalt koheselt näha nagu ka mõned muud asjad	suhteliselt raske on algul mõnedest asjadest aru saada
225	Ei oska vastata.	Raskusi polnud.
229	Samal lehel võiks olla sarnaselt lühiülevaade kinnistutest, liiklusvahendustest, maksuameti kontoseisust. Praegu peab neid eraldi vaatama eraisiku teenuste alt	
231	Peaks olema piisav.	Raskusi polnud.
234	Kõik oleks muidu ok aga jäi silma et kui kontrollisin oma ravikindlustuse kehtivus aega siis seal on kirjas aastani 2999 ?	Ei oska nagu hetkel kurta
237	e posti aadress ei meeldi mulle	
242	Esialgu minule tundub,et kõik hästi aga eks tulevikus ilmselt see muutub ja kui,siis ikka veel paremuse poole.Kahjuks ma ei saa skaalale panna 5 punkti,kuna minu arvutihiir ei vii skaalanäitu edasi aga annaksin,,5,,	Ei ole raskusi,kes vähegi oskab arvutiga tööd teha,siis kõik sujub!!!!!
252	Saaks meditsiini numbrite kinni panemise võimalus	Mitte eriti palju
253	-	Raskusi polnud, vajab vaid veidi harjumist.
255	Isikut tõendava dokumendi taotlust võiks eesti.ee personaalses vaates Minu asjad teha saada. Seal on olemas mu pilt, mu allkiri, kõik andmed. See võiks olla nupuvajutuse küsimus.	Kõik oli väga mugav ja meeldiv.
260	Lehekülge võiks aeg-ajalt täiendada	Ei olnud
262		esialgu jah, x tee tundus mugavam, nüüd hakkan harjuma
263	По-моему всё отлично.	Нет, не возникало.
271	долго приходится искать нужное для меня ,разбросаны темы поиска	иногда не корректно выставлена тема поиска
274	keeruline ja raske leida.	Ei leidnud kiiresti oma autojuhi tervisetõendit???
276	krediidi info võiks olla ka seal kättesaadav.	ei, kõik on loogiliselt üles seatud.
278	нет	нет
281	perearsti all võiks olla link "digilugu"	ei ole raskusi
283	Minu asjade alamrubriigis Liiklus on küll info minu juhiloa ja kehtiva kindlustuse kohta, aga ei ole andmeid minu nimel oleva auto ega tervisetõendi kehtivuse kohta. Alamrubriigis Kodu ja kinnisvara on mainitud ainult elukoht aga puudub info mulle kuuluva kinnisvara kohta.	Selle küsimustikuga oli raskusi, kuna lingid avanesid samas aknas ja eelnevalt vastatud küsimused tuli uuesti vastata.
299	Ei ole nii pidev kasutaja, et ettepanekuid teha	ei ole
302	tervishoiu andmed(perearsti poolt määratud ravi ja uuringud	ei olnud
306	Ei Kõik on täiesti normaalne ja täidab minu ootusi.	Ei.
308	võiks olla haridustee ja koolid aastate kaupa et kiirelt leiaks vajadusel mõne dokumendi.	viga digiretsepti vaatamisel.
310	Ei oska öelda. Kasutan seda nii kuidas see on tehtud ja kuidas vaja on.	Ei ole.
313	Ei oskagi öelda, ehk digiretseptide kättesaadavus veebilehel võiks olla kergemini leitav.	Mitte eriti.
315	Ma arvan et hea on	Arusaatav
317	E oska praegu öelda.	Siiani pole raskusi olnud.
320	ei oska öelda	ei ole raske
321	Ei tea	Ei olnud
324	Русский язык всегда должен присутствовать. Для зрения полезен шрифт Verdana.	
325		algul oli kahtlusi, ja kui vajutada sai valesse kohta, siis vaid vajutada back, ning tagasi valikute juurde
326	-tervise pool on puudulik, näiteks analüüsid -digiretseptidel puudub sorteerimisvõimalus (kasutamata retseptid)	ei
327	Mulle meeldis https://ervinal.eesti.ee/ andmekuvamisviis rohkem. Miks ma peaks kindlustuse lõppemist portaalis vaatamas käia, kui selle kohta võiks olla SMS teavituse tellimine võimalik.	
332	Mitte kuvada lõpetatud äriühingute kalendreid. Kogu kalendri idee on tegelikult arusaamatu. Kui mingit teenust kord	Kui seadetes olla ka klikkida lingil Avaleht -> Minu asjad, siis satub tegelikult kalendrisse

	kasutada, siis võiks vastav plokk automaatselt "minu asjadesse" tekkida. Teavituste süsteem peaks olema opt-out, s.t. et automaatselt saab kõik ning mida ei taha, sellest saab teavituse sabas oleva lingi kaudu loobuda. Hetkel on opt-in, s.t. iga teavitust tuleb eraldi tellida. Ja kõiki riiklikke vorme peab saama täita ja allkirjastada ja saata portaalis, selmet mingi PDF või RTF alla laadida ja oma arvutis täita.	
334	ei tunne mingit puudust	ei olnud raskusi, kuid näiteks ma ei kujuta hästi ette kalendri igapäevast praktilist kasutamist oma päevakava koostamisel.
337	EI ole midagi olulist puudu.	Raskusi ei ole. Olen üldiselt rahul.
338	kui ei ole kasutanud, siis ei saagi ju sellele testile vastata	vaata p.14
347	Selgus, võimalus muuta vaadet minu vajadustest lähtuvalt	Tuindus kohmakas ja raske oli leida vajalikku
355	See ei hõlma tegelikult kõiki “minu asju”, mis eesti.ee portaalis (ja/või muudes riigi e-teenustes) minu jaoks saadaval / olulised on. Nii et see vaade lubab rohkem kui teeb.	
360		Raskusi otseselt mitte, kuid alati peaks olema kõik lihtsam, veelgi lihtsam. See omakorda teeb asjaajamise kiiremaks.
363	minuga seotud firmad, mis on likvideeritud ja tegevuse lõpetatud, võiksid sealt olla maha võetud. Mõned juba 10 ja rohkem aastat tagasi. Või saaksin seda ise teha? või vähemalt seadistada, et ma neid ei näeks. ma ei hakka ju nende e-posti ka kuhugi suunama, kui neid enam ei eksisteeri,	otseselt ei ole, aga see kustutatud firmade nimekiri häirib ikka kõvasti
366	Minu andmete päring	Ei olnud
369	Ei ole	Ei ole
370	Ei oska midagi arvata.	Ei olnud.
371	ei	ei
373	Ei ole midagi puudu minu jaoks.	Ei olnud raskusi
374	Võiks lisada andmed arveldusarve kohta, sest hetkel need eraldi haigekassa, üliõpilase toetuste taotlemise või EMTA toimingute osas jms. Võiks olla keskne ja ühtne, et tagada kõigi vajalike toimingute sujuvus ning ühtsus.	Võiks olla lisaks olulisi andmed, nagu eelpool mitmes kohas toodud ka arveldusarve number.
375	Võiks olla lihtne leida kogu info sealt lihtsalt elukoha juurest kinnisvara kohta, samuti oma ettevõtted, oma notariaalselt tehtud tehingud lihtsa lingiga, et oleks turvaliselt ja lihtsalt ühes kohas leitavad ilma liigselt otsimata	
379	Hetkel ei leia küll momenti, kohta, mille kallal nuriseda!	
383		ei olnud
384	Äkki saab lisada ka muud kindlsutused peale autokindlustuse, näiteks ka kodukindklustus vms... Et ka nende kehtivust näha.	Ei
385	-	ei
387	Soovisin tellida sms-teavitused, kuid millegi pärast ei toiminud mulle saadetud aktiveerimiskood	
388	Retseptid on saamatult koostatud,vaja on ainult väljaostmata retseptid.	ei ole
398	не достаточно точная информация	иногда не понятно где найти информацию
406	Kui kasutatakse mõisteid, näiteks aktiveerimiskood, võti jm., siis mida selle all mõeldakse, kust neid saab. Samas ilma nendeta ei saa isegi oma andmeid sisse anda? Kui riigile ei ole neid vaja, siis olgu ise rahul...	Kui kasutatakse mõisteid, näiteks aktiveerimiskood, võti jm., siis mida selle all mõeldakse, kust neid saab.
407	Ei tea	Ei ole.
410	vanematele inimestele rohkem infot ja õpet	ei olnud
411	Ma ei oska öelda,sest kasutan vähe.	
413	Enamus asju selles vaates on suht mõttetud. Sisuliselt saan teada, et olen meessoost ja oman kassi. Aga selle teadmisega pole midagi peale hakata. Kui kassi vaktsineerimise tähtaeg kätte jõuab, siis helistab mu loomaarst mulle. Ma ei tule selle pealegi, et käia iga päev ID-kaardiga seda kontrollimas. Ma saan aru, kui ma sealt saaksin loomaarsti aja kinni panna... Ja nii iga asjaga. Saan teada, et ma olen ettevõtte omanik, aga äriregistrisse pean ikka eraldi sisse logima. Mõned asjad on lapsikult naeruväärsed - isiklik kalender näiteks.Liiga vähe on teenuseid selles isiklikus vaates, et kujuneks vajadus seda	

	külastada. Võiks ju olla kasvõi näiteks juurdepääs digiretseptile - et vaatad mis rohud on välja kirjutatud ja mis millal välja ostetud. Vanematele inimestele väga vajalik teenus.	
414	я всегда нахожу ответы на свои вопросы, но можно всегда сделать что-то лучше чем есть	есть трудности, потому что плохо владею эстонским языком, а документы хочется читать в подлиннике
421	Minule sobib praegune...	Ei olnud
425	Kõik on ok aga võiks näha ka enda kriminaalseid asju ja täpsemalt-võlgu ,trahve jne et kes kus ja mis ja täiturid jne.	vahepeal kiilub kinni-kahjuks.
426	käib küll	ei ole
427	mind rahuldab täielikult riigi portaali teenus	kõik on arusaadav
430	Ma peaksin saama ise kujundada n.ö oma konto. Näiteks avastasin, et on e-riigis on võimalik teha testamendi teade. Hetkel mul ei ole see veel tehtud, aga otsustan, et teen selle kahe kuupärast ennem pikale reisile minekut ära ja seepärast pistaks selle teema ka "Minu asjade" hulka. Et E-riigi kasutamine kasvaks, peaks olema võimalik kõiki Eesti riigiga (Eesti ametiasutustega)seotud asjatoimetamisi seal korraldada. Näiteks Tuludeklaratsiooni ma ei saa näha täna e-riigis. Samuti keskkond e-arved võiks olla "Minu asjades"	Kohe ei sanaud aru, kuidas seda kalendrit kasutada. peab vist hetkeks süvenema. Huvitaks kindlasti kas saaksin kalendri teavitusi ka otse oma meiliaadressiga (mis on seotud e-riigiga) siduda?
433		Ei ole
440	Seal on mitmeid täiesti mittevajalikke komponente (kalender, e-post, minu lingid) - ma imestan, kas keegi neid üldse kasutab, kõigil on ju oma postkast, kalender, lingid kuskil mujal. Seega vasakmenüüst asjalikud ongi vaid Minu dokumendid ja Seaded. Kasutatud teenused on ka asjalik, sest ilma selleta on teenuseid üsna keerukas leida. Samas Kasutatud viited võiks lisada Minu asjade avalehele, kus need oleks ühes kastis, nagunii on pool ekraani tühi. Samuti ka Minu dokumendid avalehele, kus näitaks näiteks 10 viimatist dokumenti, ja ülejäänusid saaks sealtsamast avada. Seaded tooks väikse ikoonina Prindi ja Jaga kõrvale. E-posti, lingid ja kalendri kaotaks ära, või paneks kuhugi täiesti alla. Ja saakski mittevajalikust vasakmenüüst lahti.	Segadusse ajab, mida leida vasakmenüüst, ja mida avalehelt. Avaleht tundub vajalikum.
446		Ei ole
447	Kogu eesti.ee on väga kasutaja vaenulik ja ebafunktsionaalne. Minu asjad on ideaalne näide sellest	Jaa, ID kaardiga sisselogimine on pea alati raskendatud või võimatu.
448		
452	Sellega tegelevad profisionaalid	Ei ole
453	не знаю	ei
454		ei olnud raskusi
458	sõna "asjad" on küsitav. Eesti keeles peaks olema parem vaste leitav. Teeme asju, arvustame asju jne. Aga lehekülg ise tip-top !	ei ole raskusi, tänan
459	Võiks olla minu terviseandmed ka vaadeldavas vormis. Eriarstide uuringud, röntgenid, ravimid, jne.	Ei ole
466	mu pere,alla minu lapsed,lapselapsed,oed,mu ema surnud,mu isa surnud,mu esimene mees surnud mu mees praegu,ma olen ju abielus.	ej
468	müra on palju - võiks olla seadistus mis mulle vaja on - no ei toimi praegu see eriti ettevõtete puhul	ongi liilat palju "jama" liikumine edasi-tagasi ei toimi alati , tüütu, on tahetud head kuid mõnes kohas on üle võlli tõmmatud
480	Minu kinnistud Minu maksud (võlad) Minu toetused Minu ehitised	
486	Esiteks, minu alaealised lapsed, antud info võiks olla täielikum. Võiks olla vähemalt võimalus täiuslikuma info kuvamiseks, millal pass aegub, perearst jms. Vasakus menüüs taustaks olev lillakas toon kohe üldse ei sobi teiste värvidega kokku.	Ei olnud, sest seal on nii vähe infot.
491	ei oska öelda	ei

497	sEE VÕIKS VÄLJENDUDA KA E RAVIKAARDI VAATAMISES.˘jA MUIDUGI VÕIKS OLLA SEE PASSI JA MUUDE DOKUMENTIDE UUENDAMISEL MEELDETULETAJA	
504	Võiks olla lihtsam ligipääs ettevõtlusega seotud osadele (e-äriregister, MTR), neid tuleb alati taga otsida	ei
510	Veregrupp, allergiad, vaktsiineerimine, elukaaslane/abikaasa/lapsed	
511	зачем мне мои данные? если я их и так знаю и всё помню .	
516		ei olnud
521	Võiks olla info ka sotsiaalkindlustusvaldkonna kohta.	Probleeemiks on alamlehtede suhteliselt sage ümberkorraldamine ja kasutajatel ei saa mingit harjumust ega vilumust tekkida.
522	Puudu_ ei kuva kinnistusraamatu teade; varem see teenus oli kättesaadav	Raskusi puuduvad
547	Ei oska öelda	Ei olnud
566	tervise tõendi kehtivus ei kajastu ?	
585		I could not determine my martial status. I would have expected to find that somewhere on "My data" but didnät succeed
587	peaksin saama postkastilt kustudada vanu suunamisi ,mida ma ka tegelikkuses enam ei kasuta. see tekitad palju segadust!	
590		Ei ole olnud
597	Tean, et olen otsinud, aga ei leidnud. Aga hetkel ei meenu, mis see oli.	
603	Selgitada, miks peaks seda kasutama ja mille poolest see on mugav/mugavam kui nt rik.ee või internetipank vm. Minu asjad vaates tuleks lisada selgitused tegevustele ja võimalustele - mida üks või teine funktsioon pakub. Nt jäi arusaamatuks - kui soovida eest.ee meiliaadress suunata mõnele teisele aadressile, siis milline "võti" ja miks on sinna vaja sisestada.. jm	Nt jäi arusaamatuks - kui soovida eest.ee meiliaadress suunata mõnele teisele aadressile, siis milline "võti" ja miks on sinna vaja sisestada.. jm
618	Et allkirjastamine toimuks ilma vigadeta iga brauseriga.Kui on lapakal sisemine id kaardi lugeja.	digi allkiri ei tööta vahest.
626	online chat....	No problem....
633	I have two companies that I have established when I didn't have Estonian ID or the ID card (only Finnish one). I cannot see these relations with my Estonian ID card.	I had to use Google translate to understand the residence application form. Also it required technical skills to sign the form using the Google Chrome browser.
635	Хотелось бы побольше информации о FIE для начинающих. Посмотреть подробную информацию о своем FIE.	Хотелось бы побольше информации о FIE для начинающих. Посмотреть подробную информацию о своем FIE.