TALLINN UNIVERSITY OF TECHNOLOGY

School of Information Technologies

Krõõt Kroonmäe 144024IVGM

IMPLEMENTING PROACTIVE SERVICES IN ESTONIAN LOCAL GOVERNMENTS

Master thesis

Supervisor: Innar Liiv, Ph.D.

Associate Professor

TUT

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Author’s declaration of originality

I hereby certify that I am the sole author of this thesis. All the used materials, references to the literature and the work of others have been referred to. This thesis has not been presented for examination anywhere else.

Author: Krõõt Kroonmäe

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Abstract

The aim of this thesis is to study whether proactive services would be implementable in Estonian local governments. Service Design and Design Thinking are used as theoretical background, since they are suitable for complex service systems and are inspiring innovation. The research consists of empirical study and case study. In empirical study the author will examine the subject with qualitative methods from three different perspectives: legal, technical/design and social, in order to get full picture of the conditions to design proactive services for Estonian local governments. In the case study, the author re-designs childbirth benefit, provided by local governments, into a proactive service and offers three alternative solutions.

This thesis is written in English and is 78 pages long, including 5 chapters, 8 figures and 2 tables.

Annotatsioon

Proaktiivsed teenused Eesti kohalikes omavalitsustes

Antud magistritöö eesmärk on uurida, kas proaktiivsed teenused on Eesti kohalikes omavalitsustes realiseeritavad. Teoreetilise alusena on kasutatud Teenusedisaini ja Disainmõtlemise metodoloogiaid, kuna nad on väga sobivad lähenemised eriti keeruliste teenussüsteemide disainimisel ja arendamisel ning soodustavad innovatsiooni. Magistritöö koosneb empiirilisest uurimusest ja juhtumiuuringust. Empiirilises uurimuses uuris autor teemat kvalitatiivsete meetoditega kolmes erinevas aspektis: juriidiline, tehniline ja sotsiaalne. Eesmärk oli saada tervikpilt hetkeolukorrast ja tingimustest, et disainida Eesti kohalikele omavalitsustele proaktiivseid teenuseid. Juhtumiuuringus disainis autor kohalike omavalitsuste poolt pakutava sünnitoetuse teenuse ümber proaktiivseks ning pakub kolm alternatiivset võimalikku lahendust.

Lõputöö on kirjutatud Inglise keeles ning sisaldab teksti 78 leheküljel, 5 peatükki, 8 joonist, 2 tabelit.

List of abbreviations and terms

SCA	General Part of Social Code Act
APA	Administrative Procedure Act
PDPA	Personal Data Protection Act
ARA	Administrative Reform Act
LGOA	Local Government Organisation Act
Administrative Reform	Reform for alteration of administrative-territorial organisation of rural municipalities and cities

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1 Introduction

Even though Estonian reputation as an advanced e-country is widely spread, in reality Estonian local governments are struggling to meet the expectations. Estonian local governments' multitude and diversity has created situation where some local governments are not offering any services via e-channels, while the others have advanced self-service portals. Although, mainly bigger local governments with bigger budgets can afford advanced e-solutions. Majority of local governments in Estonia today are forced to make choices and set priorities in terms of finances due to very limited resources.

During the ongoing Administrative Reform in Estonia many local governments are merging, therefore the number of local governments is decreasing, yet their administrative areas are going bigger. In one hand, the reform aims to increase the efficiency of the use of resources and synchronise the quality level of public services. In the other hand, the number of physical contact points for receiving services is decreasing and the distances are getting longer. Therefore, it is especially important to address the problem of service accessibility.

One solution for raising service accessibility is instead of focusing on creating many service channels to receive direct public services and waiting for the citizen to contact the local government, but instead reaching out to the citizen and initiating service processes. In many cases the government has data about a person, so why the government should ask the same data again with an application, instead of proactively start a service process without an application? Estonia has accepted Once Only principle that forbids asking same data twice. When following that principle then for several services there is no new data to ask and the "application" loses its real value.

The concept of "proactive service" is not widely spread in public sector in the world nor in Estonia, therefore the goal of present Master thesis is to research whether proactive services would be implementable in Estonian local governments. For answering the question diverse aspects need to be considered: whether the Estonian legislation sets boundaries, are there any technical issues or prerequisites in infrastructure before

implementing proactive services in Estonian local governments, and how receptive are local governments and citizens to the disruptive approach of proactive governance.

The outcome of present Master thesis is an analysis of how conducive or hindering are the conditions to implement proactive services in Estonian local governments and an example case of one re-designed local government service into a proactive form.

Current thesis is targeted to local government representatives and officials, regional policy and lawmaking representatives, service designer, academics and anybody who is interested in service design and innovation in public sector.

1.1 Motivation and relevance of the topic

This research topic was chosen because of the relevance of the subject. In rapidly changing world, it is important to talk about the innovation in public sector. Firstly, possibilities and users' expectations are changing, and there is always a need to administrate economically effectively. Secondly, in the light of ongoing Administrative Reform in Estonia, there is an urgent need for service *reform* as well. In the result of the reform the number of municipal centers will decrease, therefore physical service centers will move further from many people. This in turn requires increasing accessibility and bringing services closer to people via other channels and solutions, proactive services are one possibility to address the problem.
Besides, the author believes that Estonian public sector needs a shake of Design Thinking, to let go of outdated approaches and be more creative in public service development.

1.2 Thesis outline

First chapter of this thesis gives background information and sets framework to the research. It provides an introduction to the research topic, research questions and methodology, literature overview, as well as introduces Estonian public administration system and currently ongoing Administrative reform.
Second chapter sets theoretical foundation, Service Design and Design Thinking, to the research topic, and creates theoretical concept for the perception of "proactive services" in public sector

Third chapter explains the empirical study, which was conducted in order to answer the research question. It divides research topic into sub-topics of legal, technical/design and social perspective and introduces the results of qualitative analysis of each sub-topic.
Fourth chapter consists of an example case, where one social service provided by most Estonian governments, childbirth benefit, is taken into pieces and re-designed to be proactive. Firstly, current situation and business process is mapped, secondly three alternative solutions are offered.
Fifth chapter is a summary of the research and current Master thesis.

1.3 Research questions

The main research question in this Master's thesis is:

- Are proactive services implementable in Estonian local governments?

In order to answer the main question, sub-questions were asked:

- Is Estonian legislation supportive or hindering?
- Are Estonian local governments motivated to implement proactive services?
- What potential obstacles may occur when designing proactive services for Estonian local governments?

1.4 Research methodology

Present Master thesis consists of three parts: theoretical research, empirical research and case study. For theoretical part qualitative methods were used to collect data. Mostly academic writings were studied, with the objective to set good theoretical foundation of how to create innovative services in public sector. Therefore, firstly, numerous academic writings about Service Design methodology, Design Thinking and innovation in public sector were studied, and secondly available academic writings about proactive services were analysed. Since the concept of proactive e-government services is not widely researched area, the available materials were limited. The author could rely on materials of experiences of Taiwan's proactive government approach and a few authors in the field. Also, there is no developed conception nor definition of a proactive-service, therefore the author created two concepts of proactiveness in public sector, one of them was chosen to the focus of present thesis' empirical research and case study.

In empirical part qualitative methods were used to collect data. Interviews and questionnaires were conducted from key stakeholders, like Estonian local governments' representatives, service designers, legal advisers, and citizens. In order to get full picture of research topic and answer the research question, the research topic was divided into three sub-topics: legal, technical/design and social. For legal perspective Deputy Head of Department in Legal Matters of Ministry of Interior of Estonia was consulted. Consultation was held face to face and via e-mails. Consultation was held on time period of 4.03.2017-25.03.2017. The goal of the consultation was to find out legal possibilities and potential obstacles of implementing proactive services in Estonia. Additionally, concerned legal documents were studied.

For technical/design perspective an interview with AS Andmevara representatives was conducted. There were three participants in the interview: Head of Service, Head of Software Development and a Product Manager (of services for local governments). The goal of the interview was to get insight of potential issues that can arise when implementing proactive services in Estonian local governments from technical and design perspective, as well as enquire the situation of current service platforms developed for local governments (KOVTP and KOVMEN). Interview was held on 15.03.2017 and lasted for 50 minutes. Sample interview questions can be found in appendix 1.

In social perspective, two types on stakeholders were involved: local governments as service providers and citizens as service receivers. As service providers, there were 11 Estonian local governments chosen based on their location and potential size after Administrative Reform comes into effect in 15.10.2017. Local governments were chosen from North-East, South-East, South-West, North-West, Centre and the islands, in order to cover as many different locations and areas in Estonia as possible. In matter of size after Administrative Reform, rather small-medium by number of inhabitants, yet large in area were chosen, because sparsely populated areas are affected most by the problem of service accessibility after Administrative Reform. Due to limited time frame, 10 questions were sent to chosen local governments via e-mail between 11.04.2017-12.04.2017, with the objective to get their opinion about the importance to raise the quality of direct services in their community, and how do they feel about implementing proactive services in their local government. List of selected local governments and sample of questions can be found in appendix 2 and 3. Since the third part of the thesis focuses precisely on childbirth benefit, the target group of service receivers were mothers who had applied for

childbirth benefit from their local government in last 6 months. The call to participate in online discussion/interview for a research was made via social media channel Facebook in specific group for mothers. All together 10 persons were selected to conduct individual interviews via Facebook and Skype during 17-23 of April 2017. The goal of the interviews were to get understanding of the perspective of service receivers, how was their experience when applying for childbirth benefit in their local government and how would they feel about proactive government services. Sample of questions can be found in appendix 4.

Third part of present Master thesis is a case study where one public service, childbirth benefit, is redesigned into a proactive service. Firstly, current situation and service process is mapped (AS-IS), and secondly, 3 potential solutions is offered (TO-BE). One Estonian local government, Väätsa vald, was visited during the process mapping phase, in order to map current service process and observe how childbirth benefits are applied. The visit included observation and discussion methods. The purpose of the case study is to create a vision/concept of redesigned social service, in order to see what kind difficulties appear when designing a proactive service for a local government and whether these obstacles are surmountable.

Throughout the whole research Service Design methods and tools are used (explained in chapter 2.2). Current thesis will go through first two phases of the Double Diamond: Discovering and Defining phase helps to get better understanding of the current situation, form full picture of the problem to solve and full insight from key stakeholders. Reaching to the start of Development phase, which helps to create potential solutions of redesigned childbirth benefit service into a proactive service.

1.5 Estonian context

Currently the territory of Estonia is divided into counties, rural municipalities and cities (Territory of Estonia Administrative Division Act, 2016). In Estonia there is 15 counties, 30 cities and 183 rural municipalities. Cities and rural municipalities are local government units. By the Local Government Organisation Act, the definition of local government is: *"Local government is the right, authority and duty of the democratically formed bodies of power of a local authority provided for in the Constitution, a rural municipality or city, to independently organise and manage local issues pursuant to law and based on the*

legitimate needs and interests of the residents of the rural municipality or city, and considering the specific development of the rural municipality or city" (2017). Estonian local government bodies are municipal council, acting as representative body, and municipal administration, acting as executive body (Local Government Organisation Act, 2017). Each local government unit has its own independent budget. According to Local Government Organisation Act the functions of a local authority include the organisation, in the rural municipality or city, of social services and benefits and other social assistance, welfare services for the elderly, youth work, housing and utilities, the supply of water and sewerage, the provision of public services and amenities, waste management, spatial planning, public transportation within the rural municipality or city, and the construction and maintenance of rural municipality roads and city streets unless such functions are assigned by law to other persons (Local Government Organisation Act,2017). Therefore each local government is providing and is responsible for its own public services.

In June 2016 Estonian Parliament adopted Administrative Reform Act, which purpose is to make fundamental changes in current administrative management and make local governments' self-management more effective. The goal of the reform is to create local government units with minimum 11 000 inhabitants, therefore many small local governments are merging under one administration for meeting the criterion. According to Administrative Reform Act: *"The purpose of administrative reform is to support the increase of the capacity of local governments in case of offering high quality public services, using regional prerequisites for development, increasing competitiveness, and ensuring a more consistent regional development. In order to achieve this purpose, this Act provides for the alteration of administrative-territorial organisation of rural municipalities and cities, as a result of which local governments must be able to independently organise and manage local life and perform functions arising from law. Administrative reform is implemented also according to the purposes of state governance reform in case of organising public administration, which include ensuring the quality and availability of public services and cost savings"* (2017). Therefore one of the most important goals of the Administrative Reform is to raise capability of local governments to provide qualitative public services. In one hand, Administrative Reform is supposed to ensure better resources (financial and workforce). On the other hand, after the reform the number of local governments decreases and also the physical contact points with citizens, therefore after the Administrative Reform it is even more crucial to raise accessibility of public services.

1.6 Literature overview

The concepts of "proactive governance" and "proactive services" are academically barely researched perceptions. There are few studies available about proactive service delivery in public sector. One research available that somewhat touches the concept of proactive public governance is Callen, M. and Hasanain, A. evaluation of Punjab Model of Proactive Governance. Their research focuses on reducing the level of corruption in public sector through proactively asking feedback from the citizens (Callen *et al*., 2011). According to their view the concept of "proactive governance" is when *"the citizen is not coming to the state; the state is coming to the citizen"* (Kumar, 2015). The purpose of Punjab Model is to proactively engage the citizen, rather than waiting for citizens to submit complaints (Callen *et al*., 2011). The government sends SMS messages and asks people to text back feedback directly or via phone call (Callen *et al*., 2011). Therefore, the state reaches out to citizens and asks for feedback with the goal of getting more responses than they would with traditional approach of waiting if someone complains. The Punjab Model has grown into more than just fight against corruption, and has become a feedback gathering mechanism that seeks feedback from the citizens who utilise public services (What is CFPM?, (02.05.2017)). As a proactive governance initiative, CFMP aims at:

- Curbing Corruption
- Building and Enhancing Citizen Trust
- Better Monitoring of Public Service Delivery
- Enhancing Citizen Engagement

It surely changes the way people are used to communicate with the government. "*The Punjab Model has made an important step in initiating the effort to elicit citizen feedback"* (Callen *et al*., 2011). With proactive engagement it has potential to fundamentally transform the relationship between citizens and government (Kumar, 2017).

Another author who has researched proactive services in public sector is Sirendi, R. In her research she focuses on design aspect of proactive services – mainly how to design public services that proactively solves users' needs. She claims that proactive services should be the next stage in service design for e-governance (Sirendi, 2016). Sirendi has

used the push-pull concept for explaining proactiveness in public sector in a way that when traditional approach of public service delivery is a "pull", then delivering services proactively is a "push" method, meaning that the government pushes services to the citizen (2016). In her research she has used Estonian family benefit services as illustrative cases, and claims that Estonia has great technological possibilities for delivering services proactively (national authorities' registries and x-road for sharing data securely), yet service providers are not fully using the potential (Sirendi, 2016). In her research technological possibilities are emphasised as a fundament to proactive service delivery. It seems that according to her research the concept of proactiveness largely relies on automation of services: *"In our opinion, proactive public electronic services should be designed in a way that supports the automation and intelligent processing of already available information to reflect the purpose of meeting the needs of different stakeholders yet maintaining a people-first policy"* (Sirendi, 2016). The author also emphasises the role of Service Design methodologies for developing services that meet the actual needs of the users, as well as other stakeholders:*" […] governments should introduce and implement the concept of service design thinking in the public sector in order to create public electronic services that would truly and purposefully meet the needs of citizens, businesses and non-governmental organisations"* (Sirendi, 2016).

2 Theoretical background

2.1 Service Design

What is a "Service"?

Service is an interaction between two entities that co-create value (Katzan, 2011). Service entities are the service provider and service receiver. Service is a process of doing something beneficial for and in conjunction with some entity (Katzan, 2015). According to Harry Katzan, service is a process resulting in tangible value when the associated sequence of steps is instantiated (Essentials of Service…., 2011). But yet, it is questionable if the service outcome, the resulting value, is always tangible? One could argue that in many cases the service objective could be intangible like information, feeling or experience. For example getting legal advice or going to the concert are services with intangible objective. In general, service is process of constituent steps between two (or more) entities, with the objective to create value. Essentially, all products are services (Katzan, 2015).

What is "Design"?

Traditional understanding of "design" has, for a long time, been styling appearance of a product. Even though part of "design" objective has also been making products simpler, more usable and beautiful, it is still very narrow perspective of design (Brown, 2009). For a long time design focused more on "things" and was something only designers as a profession were dealing with. Nowadays, design is seen with much bigger scope. Its focus has moved from "things" to creating experience and emotions. Designers have started to consider the context around using the product, for example user's lifestyle, habits and attitudes are taken into account before starting the design process. "Design" is increasingly seen as an "attitude" rather than as a pure profession (Sangiorgi, 2015). Design has also shifted away from only designers' playground to much wider audience. It can be applied to different kinds of "products" (i.e. objects, interactions, services and systems) and be adopted by various disciplines (Sangiorgi, 2015). It is even seen as a way of thinking – everything can be seen as a design problem.

What is "Service Design"?

The original focus of Service Design has been the design of better service interactions and experiences, applying tools and concepts coming from Interaction and Experience Design in particular in the commerce sector. Modern definition of Service Design includes designing the experience, process and strategy to deliver it (Sangiorgi, 2015). The essence of Service Design is user-orientation. Service design techniques are focused on user research, investigating their needs and problems. Simply said, Service Design is a set of methodologies and tools for helping the design team to make sure they are creating value for the user. Successful service design and development requires a systematic approach that links and interfaces with a comprehensive set of customer needs, the translation of these needs into various service attributes, and the development of a properly designed service process (Selen *et al*., 2001).

Even though the core of service design is creating positive experience for the user, therefore can be means of interpretation that puts the customer first, and the organization second (Andreassen *et al*., 2016), it is not entirely so. Although Service Design is an outside-in approach, starting with exploring users' needs. In the long run it is about bringing the organizational needs and customer needs together. The true essence of the customer-centricity paradigm lies in creating value for customers and, by doing so, creating value for the firm, i.e. dual value creation (*Ibid*.). The goal of Service Design is to provide maximum customer-experience, so that it brings along business value. In private sector business value is easy to come if you are building a product/service that is actually creating value for the customer and is delivered with right strategy. In public sector, in the other hand, organizational value must be dealt with greater attention. If usually in private sector great product means more customers means bigger profit, then in public sector it is not the case. Business value in public sector can refer to optimized administrative and development costs, or for example higher national security.

In Service Design the users are seen as co-creators of value. It is not that service provider is delivering value to the service user, but the true value is formed from interaction between service entities. Service provider and user are together creating valuable service experience (Katzan, 2011). It's like harmony between service entities and their harmonious interaction is transforming into value. If the co-creation in consumption doesn't work, it causes major problems and dissatisfaction, not only for the user but also for the service provider (Service Design Impact…, 2016).

While users are seen as co-creators of service value, they are also considered as co-designers. Co-design has been described as a specific form of co-creation in which designers and participants not trained in design are working together throughout the whole span of a design process with the aim of achieving collective creativity (Sanders, *et al*., 2008). Service Design main goal is to make sure the service that is created or re-designed is actually creating value and meets the users' needs, and valuable outcome is possible only if service stakeholders are involved from a very beginning of the design project. For truly understanding users' needs, they need to be co-creators of the service. Only then the service will create maximum value for the user and the service provider.
Co-design is also important in service innovation, because user's ideas and input are often more creative and valuable than the inputs found within the company (Andreassen *et al*., 2016). Users simply have another perspective, and changing perspective is the essence of innovation. Involving users in service creation process helps design team to see the broader context around users' needs and using the service (Trischler *et al.,* 2016). Users have very valuable knowledge, which service creators can't afford to miss.

Service Design is targeting especially complex service systems (Katzan , 2011). *"A service system is a collection of resources, economic entities, and service processes capable of engaging in and supporting one or more service events. Service processes may interact or be linked in a service value chain"* (*Ibid.*). Service systems, as such, go beyond an organization's boundaries and reflect that both the service provider and the service user can act as resource integrators and value creators (Trischler, *et al*., 2016).

2.2 Service Design phases

There are various approaches of service design process in use among Service Design practitioners and Design Thinkers. One very well-known method in use is called "the Double Diamond", created by the British Design Council (Schneider, 2015). "Double Diamond" divides design process into 4 phases: Discover, Define, Develop and Deliver.

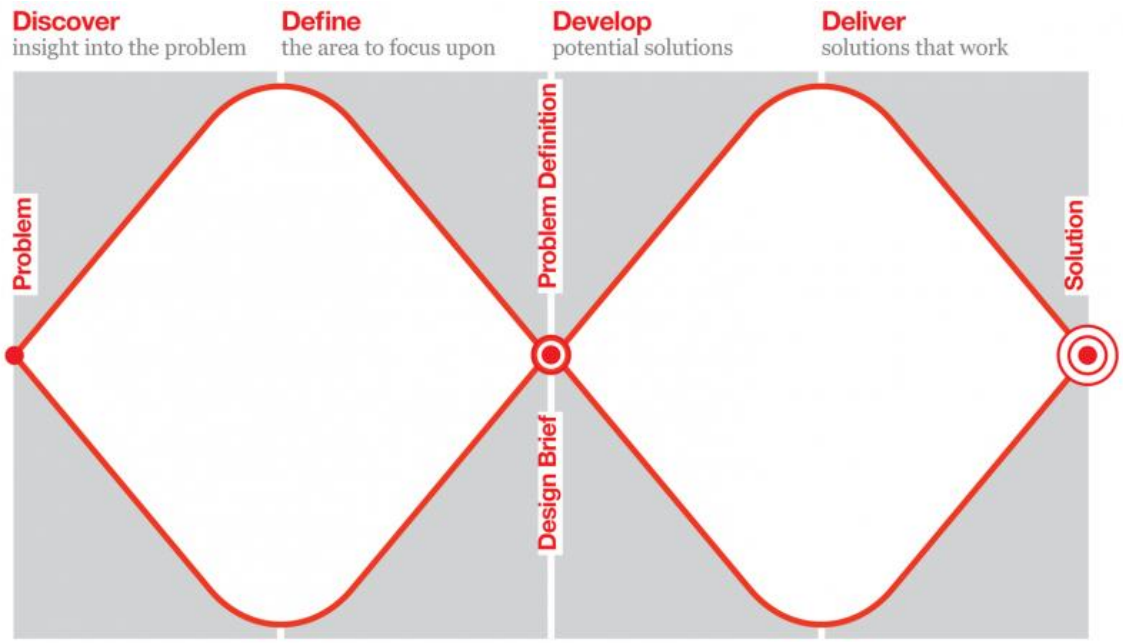

Figure 1. The Double Diamond (Design Council, 2015)

The Discovering phase refers to the start of the project. It is the time to explore the area, gather information and get insight of the problem and the context (Designer across…, 2015). It is the time to explore, observe, interview, examine etc. It is important to look at the problem area from different angles and perspectives and consider many stakeholders in order to understand the current situation and conditions. At this phase divergent-thinking is important, as in the illustrative model the first diamond opens up (Designer across…, 2015). It illustrates opening up to many opportunities and grasping wide scope.

The Defining phase represents the definition stage when all gathered information is analysed and a clear problem to focus in the project is chosen and defined (Designer across…, 2015). At this time it is time to think what matters most, what is feasible with the project, which problem should be solved first etc (*Ibid.*). At this time a vision and strategy for the solution is created (Schneider, 2015). Therefore, the convergent-thinking is needed, to narrow down the scope, define a clear problem to solve and goal to meet (Designer across…, 2015). Now, the first diamond is closing.

When a clear problem to solve is defined and goals are set, then the Development phase is the time to generate ideas of possible solution. This is a divergent activity, exploring wide range of possible options and solutions (Schneider, 2015), which is illustrated with the second diamond opening up. Best ideas are prototyped, tested and iterated (Designer

across…, 2015). This is the time to be creative and experiment with various approaches, because it is the time to fail fast and cheap.

The fourth phase of Delivering is again time to narrow down the scope and choose best solutions out of the wide range of ideas generated in the previous phase. It is the important time of creating and delivering the solution to real market/real clients (Schneider, 2015). Also, real market feedback is gathered which most likely send the design team back to one of the previous phases to explore more background information, define the problem again or generate/test more ideas.

The whole design process is never sequential or ordered. Often jumping back to previous phases is needed, especially in the last two phases of generating ideas and testing. Therefore, a cool head is needed to accept quickly if a solution is not working and drop it to try and experiment again with the next idea.

Another author has explained the design process in five phases: examine, understand, ideate, experiment and distill (Stillman, 2012). The basic idea is the same as the Double Diamond. The first phases of examining and understanding is about exploring the problem, situation and conditions, with the goal on understanding the users and their needs. Then generating as wide range of ideas as possible and choose best ones to experiment with. At this time creating prototypes and testing is needed to try out various solutions and gather valuable feedback. And lastly, the best solution is created and delivered, which again does not guarantee jumping back to one of previous activities.

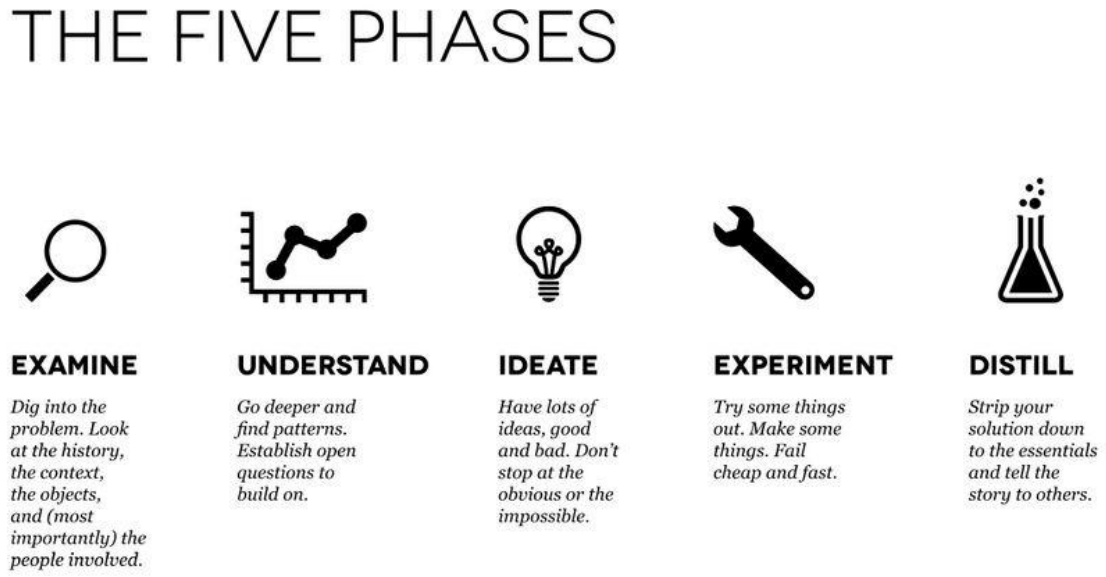

Figure 2. The Five Phases of design process (Stillman, 2012)

2.3 Service Design in public sector

Service Design is more widely used in private sector, but is becoming more and more used also in public sector. Since public sector is the biggest service provider, it is very important to raise the quality of services in order to save people's and government's resources, and Service Design is an effective methodology for achieving it.

Service Design suits very well for public sector, because Service Design methodology is addressing especially complex systems. *"Similarly, public services can be seen to be complex service systems consisting of a series of often iterative interactions between a range of human, organizational, and technical elements and processes"* (Trischler, *et al.*, 2016). Public Sector service systems are very complicated with many stakeholders, departments and entities involving. It is still a big problem that ministries and departments are working in silos, with their own narrow view on a service. Ministries tend to draw a line of a service where the ministry's administrative field ends. From the users' perspective service is usually connected to a life event (child birth, moving to another place, getting married etc.) and an average user has no knowledge nor interest in government's inner complex systems. In the users' eyes there is one service provider – the government. Therefore services should always be based on users' life event, not different ministries' administrative fields. Providing simple, accessible and user-centric services are effective from the user's point of view, yet it requires strong co-operation

between ministries and departments. Designing and providing services cross-departmental and cross-ministries requires much deeper change inside government's culture. In order to successfully implement innovative approaches within public sector, it is often cultural and organizational change that needs to be the starting point (Service Design Impact…, 2016). Organizational and cultural change is the most difficult part of innovating public sector. Breaking silos needs the biggest attention and the change is time consuming. Depending on governmental system, the barriers of breaking silos can also be in legal or financial systems. For example if a service crosses administrative field, several questions arise - who is the owner of the service, who finances it, who develops it, who administrates it etc.

Another reason to use Service Design in public sector is continuously changing world, Public Sector has to respond to the changes as well as private sector. Because of new technologies and possibilities expectations of citizens as rapidly changing. Transparency, speed, choice and customization are becoming expectations also for the service delivery in the public sector (Service Design Impact…, 2016).

When in private sector the main goal is to gain profit (by providing better services and attracting more clients), then in public sector it is needed to save costs. The economic pressure on public services is high worldwide and growing demands lead to need for more delivery without scaling the resources (Service Design Impact…, 2016). Delivering far more for far less to citizens and taxpayers requires bringing together ministries, departments and agencies (*Ibid.*). Cost effectiveness does not only consist in designing services together with other ministries, but also sharing knowledge, code and data. Therefore, again, for developing public services that create value for the user as well as government it is needed to break silos and co-operate with other institutions, stakeholders and the end users.

Engaging citizens more into public decision-making process is slowly becoming more used and experimented practice (e.g. participative budgeting). The customers of the public services are progressively seen as valuable co-creators within the bigger service ecosystem (Sirendi, 2016). Even further, citizen should not be seen as "customers", but as "partners" with empowering them to play greater role in the functioning of their government (Linders, 2012). Trusting citizens with more responsibility will raise complexity and confusion, but ultimately creates greater value (Linders, 2012). Service

Design's co-creative habit of mind helps to engage citizens more in community's actions. Involving citizens (users) into service development process helps:

- firstly, to make sure the service is solving an actually existing problem and meets the users' needs,
- secondly, helps citizens to understand better local governments and public officials' perspective and,
- thirdly, makes them feel more involved, and by that makes them care more about their community.

2.4 Design Thinking

Closely linked with Service Design is Design Thinking. Sometimes they are even seen as one and the same (Andreassen *et al.*, 2016). Or it could be looked at like a next level of Design, thinking bigger than traditional design (Brown, 2016*).* But generally one could say that when Service Design is more of a methodology, then Design Thinking is a mindset. Design Thinking has shifted away from only designers and industrial production field to much wider audience (Kimbell, 2011). Everything can be seen as design problem and approached with Design Thinking point of view. According to Tim Brown, everything from global warming to organizational challenges can be solved with Design Thinking concept, because Design Thinking is just a way of problem solving (Change by design…, 2009). Therefore everyone, especially organizational leaders, should be familiar with Design Thinking effective ways of problem solving.

Design Thinking is a tool for innovation. But what is innovation and why we need it in Public Sector? Paraphrasing Rajiv Arjan in Design Thinking workshop, innovation is just changing perspective. It is seeing thinks from another angle. In private sector it is clearly a competitive advantage, to provide services that are different, new and exciting, but in public sector there is no competition. Still, it is worth investing in innovation also in public services, because service innovation is also about effectiveness, time and money saving for government and service users. Innovation generally refers to the creation of new improved products, services, or technologies that are recognized by individuals, groups, organizations, governments, or society in general. Innovation usually reflects positive change, by making products or services more efficient, effective, more useful, and more usable (Katzan, 2015).

2.5 Proactive services

Emerging technological possibilities like big and open data are making way to citizen-oriented governance, and more precisely, experimenting with personalization and proactiveness. More and more governments are adopting citizen-centered approach, in order to raise government efficiency and reduce administrative costs. Citizen-centricity basically means providing services and resources tailored to the actual service and resource needs of users, including citizens, residents, government employees, and others (Bertot *et al*., 2008). At one point, developing services that actually meet citizens' needs leads to personalization and proactiveness. For some reason personalized services in public sector are much more researched and reflected, than proactive services. However those two are very much connected, and all proactive services must be personal, otherwise proactiveness loses its purpose.

The word "proactive" by definition means "preventive" and "forward-looking" (ÕS), while its antonym "reactive" refers to reacting or responding to something. Proactiveness by definition is an adjective referring to creating a situation rather than just responding to it (Oxford, (01.04.2017) *sub* proactive).

A "Proactive service" as such is not a fixed concept, nor there is univocal definition of a proactive service. It can be commonly agreed that in case of proactive service the service provider makes the first move and reaches out to the client, rather than responding to service receiver's contact. But what the first step is and how far the service provider goes with it, is very different case by case.

In private sector more and more companies are trying to be proactive in order to catch clients as early stage of customer journey as possible. Most common is offering products to customers based on their previous purchases or other's purchases who have bought similar products. It is a proactive move to offer a client products that the client potentially needs before he/she looks or asks for it first.

In public sector, proactiveness by the government is still rather rare occasion but is also slowly spreading, especially among countries with the highest level of e-government maturity. One way to explain a proactive and reactive service is by push and pull concept. In case of reactive service a citizen needs to pull the service from the government, while in case of proactive service the government itself pushes a relevant service at the right time to the citizen (Linders et al., 2015). In should be noted that in principle, a proactive service does not have to be

automated from service providers' side. Meaning, that the government proactively can start a service process without user's initiative, yet the activities from service providers' side can as well be manual. Even if it might not be always rational, it is still a proactive service.

In public sector's service domain the scale of proactiveness is also very wide. The dimension of proactiveness can be illustrated with three phases: offering, informing and acting. In the first phase of proactiveness is taking services closer to citizens and providing access to e-services via various channels and solutions (service portals, kiosks, etc.) In the second phase the government takes the initiative to send notifications to citizens. They could be providing information about some situations (road conditions, threats, etc.), reminders (documents have expired, etc.) and about services (being eligible to some service, how to access the service and proceeding progress, etc.). Notifications should be sent via most preferable channel by the user, it could be e-mail, SMS, social media, etc. The last, third phase of proactiveness is providing full service process to the citizen without any effort from the citizen's side and just keeping the citizen informed. This basically means that the government starts service process, collects all necessary data, conducts all necessary steps of proceeding and notifies the service receiver about the course of the proceeding or about the results.

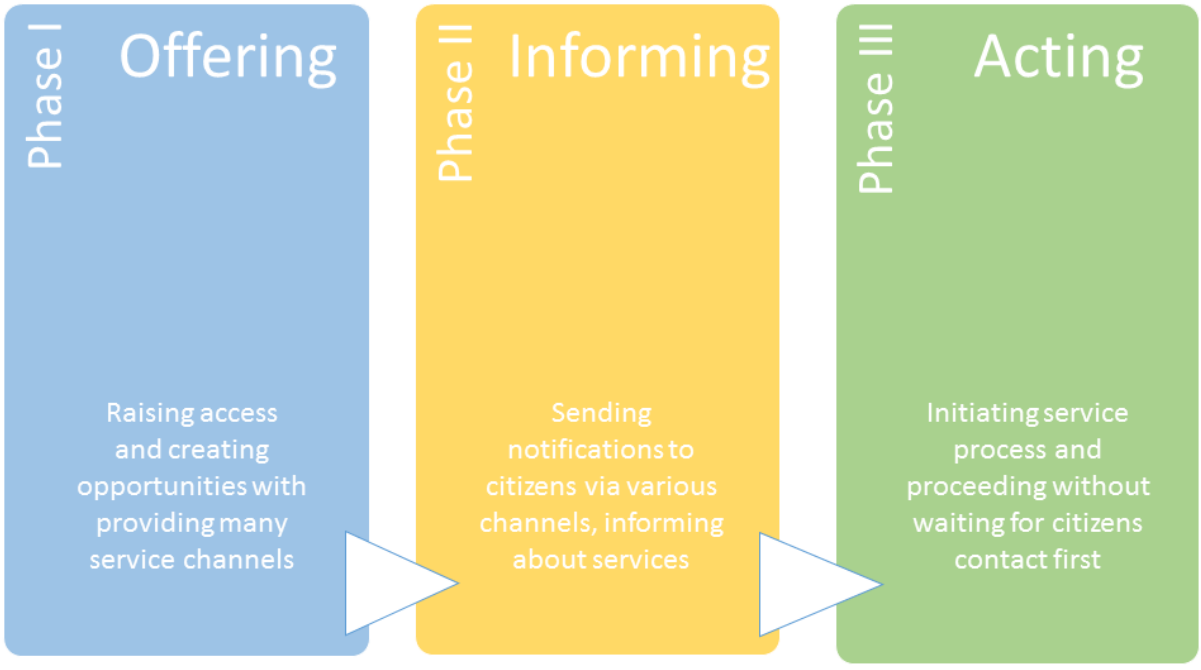

Figure 3. Three phases of proactive governance by the author

From another perspective different approaches of proactiveness in e-governance could be seen as two views - wider view and narrow view. Wider view of proactiveness refers to going as

close to the citizen as possible so that the citizen can use e-government services – more precisely, creating infrastructure and providing relevant information via most convenient channels to the citizen. According to the wider view, the goal for the government is being there in citizens' everyday life and making sure that all citizens know how, when, where and which services they need to use. The narrow view, on the other hand, goes much more deeply into a service with the intention to make one concrete e-service as proactive as possible. Ideally a proactive e-service would be fully automated from the service receivers' side, meaning that the citizen does not have to make any effort in order to receive a service he/she is entitled to. In many cases government already has collected all necessary data, which just might sit in different national databases. In case of a proactive service, from the narrow perspective, the government knows when somebody is entitled to a service, collects bits of necessary data from different registries, carries out necessary procedure and notifies the person about the proceeding process and results. The goal is to bother the citizen as little as possible and only when inevitable. Only, for example when the government does not have data that is inevitable for completing the proceeding, or when there are decision points that the government cannot make for the person.

One example of the wider view of proactive government is Taiwan. They are experimenting with the approach of proactive e-governance with the aim of being in citizens' everyday life and making the usage of e-services as convenient as possible. They are taking advantage of technological opportunities like social media, open data, and big data in order to make government more efficient and even to fundamentally change the way government functions, delivers services, and solves public problems (Linders *et al*., 2015). In their vision: *"Taiwan aims to flip the service delivery model by shifting from the "pull" approach of traditional e-government—whereby the citizen must first know, decide, and seek out government services—towards a "push" model, whereby government proactively and seamlessly delivers just-in-time information and services to citizens based on their needs, circumstance, personal preferences, life events, and location."* (Linders *et al*., 2015). Their intention of being proactive is mostly about pushing information to people's everyday lives via various channels and bridging the digital divides between people and therefore reaching out to those who themselves for some reason cannot ((Linders *et al*., 2015). For providing information to citizens they have launched "e-Houskeeper" initiative, which purpose is to *"push information and services to citizens based on life events, eligibility triggers, personal preferences, and location via whichever channel they prefer"* (Linders *et al*., 2015). Basically, it is a notification platform which all government

service providers can use for sending messages to citizens via various channels like mobile devices, government website, and even non-traditional channels in public sector like social media. Messages that are sent can be simply informative about some situation like environmental threats or when some rode is closed, or could be notifications about services like when, where and how a person can have a service he/she is entitled to. Notifications thereby are personal, meaning that people only get notifications about services they are entitled to and via channels they have chosen. They are personally guiding people through the service process via notifying them about the service progress, next steps and results.

Their view of proactiveness is about being as close to the citizen as possible, and creating all possibilities for citizens to use e-services. They have created infrastructure so that as many people as possible would have opportunities to use e-services. For example, among other thing like WiFi access, computer and internet access points, service points in stores, they have launched digital inclusion initiative called "Door-to-Door", which purpose is to reduce the number of "technological outsiders" to the minimum. With that initiative civil servants are taking mobile devices door-to-door to people whose access to digital services are strongly confined (Linders *et al*., 2015).

Therefore one could say that currently Taiwan is targeting the wider perspective of proactiveness rather than narrow, by aiming maximum level of accessibility, but still asking citizens to initiate a service.

In present research mostly narrow view of proactiveness is targeted. When wider view is creating all convenient possibilities for citizens to use government services and is not waiting for citizen to contact the government, but offers relevant services at right times, then narrow view is not waiting for the citizen to contact the government and also not just offers relevant services, but even start proceedings and possibly carry out whole proceeding without any effort from the citizen. Even though both views are important, current research has taken narrow view into focus, because it is more disruptive and the value in longer run is bigger. Narrow view turns traditional government service delivery completely upside down. It changes citizens' attitude towards government as unreasonably bureaucratic and slow, and it requires cardinal change in officials' mind-set about their role in public service delivery. When wider view is still expecting the initiative from the citizen (via application) in order to start service process, then narrow view brushes aside this in-the-box traditional step in the service process and asks why? As design thinkers always firstly ask "why" about everything, and what value does it bring, then we should ask the same about applications – why we need applications, what

purpose the application performs? Well, it might be necessary for the government to know if a person wants a service and it might be necessary for collecting necessary information about the person. The "application-first" approach has been traditional approach of governments' service delivery for a long time. It used to be necessary when there were no supporting ICT solutions, but it has remained so even now when we have many IT solutions which able us to rethink the reasonability of many old habits.

Nowadays, the service process still starts with an application, even if the government knows the person is eligible for the service and has all necessary data. From the citizen's perspective it requires time and money expense to get the service. Firstly, the citizen has to find information if he/she is eligible for some service, then he/she has to search when, where, how one can apply for the service, then the citizen has to apply and wait for some feedback, after that they receive the service output (benefit, information, service or whatever the goal of the service is). From the officials perspective it is also time and money consuming to handle the applications and do bureaucratic steps that might actually be only formal and create no real value. It is not efficient resource usage to make officials spend time on things that can be avoided, and obviously it is not smart budget using. Since most governments are asking and collecting data about their citizens when they use government services, it would be much more efficient to re-use and make value out of that data, rather than just let it sit there. In summary, narrow view of proactiveness means offering the service without waiting for citizen's application and making all necessary proceeding steps with as little effort from the citizen as possible (ideally no effort at all). The citizen just hast to be informed about the proceeding progress and results, and have to have an opportunity to step in if wanted and needed.

2.5.1 Proactiveness in e-Governance Maturity Models

When studying different e-government maturity models it appears that proactiveness is not mentioned in any of them. This raises hesitation whether proactiveness is even something to strive for? Yet existing maturity models do not provide extensive or sufficient guidance for what is next (Linders *et al*., 2015). Most of them have taken service portals to their focus and reach as far as personalized services within the portal, but they do not reach further from the government service portal and consider many other channels in citizens' everyday lives. Citizen-orientation and personalized services seem to be the limit of existing maturity models. Nevertheless, many maturity models' highest stages provide good foundation for proactiveness. Study of comparison between different e-government maturity models show that the most

important stages of maturity can summarized into the following: presence, interaction, transaction and integration (Fath-Allah *et al*., 2014). When shortly described: presence means providing information online; interaction enables citizens to interact with the government; transaction allows full service process online; and integration refers to connected services and integration between organizations. The study analyzed 25 maturity models and found that "integration" (meaning that government agencies are sharing information) is found in 20 maturity models. And "personalization" (as in offering possibility to the citizen to personalize and customize the e-portal's functionalities according to his/her needs) is covered by 8 maturity models (this includes: Andersen and Henriksen, Almazan and Garcia, Cisco, Gartner, West, Deloitte and Touche, Siau and Long and UK maturity models) (Fath-Allah *et al*., 2014). Some maturity models have considered importance of data sharing and interoperability between government agencies and organizations, but as comparison research concluded *"some maturity models are ignoring some important e-government features"* (Fath-Allah *et al*., 2014). Integration and data sharing could be one of the most important prerequisites of proactive governance, therefore it is positive to see that most maturity models have considered it crucial. When looking at the last stages of all studied maturity models in the research their ceiling seems to be integrated and personalized services, but still not looking beyond the government portal. If the last phase of development is integration and data sharing, then question arises what is the purpose of integrating? What is the value governments are seeking with data integration? That important things seems to be left out of most maturity models. Maybe proactive services should be the next level of personalization (Sirendi, 2016)? Only one maturity model stood out positively with modern features, Lee and Kwak Maturity Model, which focuses on open government and the use of social media and Web 2.0 tools (Fath-Allah *et al*., 2014). It has altogether 5 stages, and last two stages include features like data sharing, data analytics for improving decision-making and usage of mobile devices and tablets (Fath-Allah *et al*., 2014). Still there is no sign of proactiveness as such.

It is hasty conclusion based on existing maturity models that proactive governing is not something to thrive for, rather it seems to be the phase that is not created yet. It is the future that is not defined by maturity models, but it is clear that maturity models need some refreshing and updating according to current technological possibilities. Therefore it would be interesting to see whether and how extensively proactiveness would appear on them.

The "proof" of maturity models being outdated is that knowingly many countries are already using mobile devices, big data analytics, open data, cloud, social media, participatory governing

etc., and in general are looking beyond self-service portal as the center of e-governance development. Technological advancements have indeed opened up new possibilities to raise efficiency, but also changed people's habits and expectations: *"Continued advances in consumer ICT—from mobile phones to social media—and their successful adoption into the way citizens live, work, and play have also significantly shifted the expectations of connected citizens, presenting both a challenge and opportunity for e-government efforts"* (Fath-Allah *et al*., 2014).

Even though, some authors are including citizen-orientation into their e-governance maturity models (Andersen and Henriksen, United Nations, Almazan and Garcia, Deloitte and Touche, Windley and Accenture maturity models), it is time to raise the bar of citizen-orientation. When traditional approach to customer-orientation is putting customers' needs in the focus when designing services, then big data and other technologies able not only keeping customers' needs in mind, but inferring, predicting and even influencing citizens' behaviors and needs (Linders, 2015).

3 Empirical research

3.1 Results of empirical research

To carry out empirical analysis the research topic was divided into three sub-subjects: legal, technical/design, and social. In order to answer research question, whether implementing proactive services is possible in Estonian local governments, all three perspectives are needed to be explored and analysed. Therefore one stakeholder from legal and one from technical/design was chosen to be interviewed and questioned, and two stakeholders from social perspective, since social view includes two important roles - service provider and service receiver.

3.1.1 Legal perspective

As a legal stakeholder Deputy Head of Department in Legal Matters of Ministry of Interior of Estonia was consulted. The goal of the consultation was to find out legal possibilities and potential obstacles of implementing proactive services in Estonia. In addition all concerned legal documents were studied. The main questions under study were:

- Is it possible to initiate a service process without citizens interaction first (is it possible to start a service process without an application)?
- Is it possible to send notifications to citizens about proceeding progress and results via SMS, email etc.?

All social benefits provided by the state and local governments are part of social protection system (Social Code Act, 2015) and therefore regulated by General Part of Social Code Act (SCA). This means childbirth benefit service provided by local governments are also subject to it (*Ibid*., 2015).

General Part of Social Code Act regulates the organization of social protection. It establishes, among other things, organizational bases for providing benefits for social protection, the rights, obligations, and liabilities of a person in applying social protection, social protection procedures (Social Code Act, 2015). The purpose of the Social Code is to establish legal bases in order to

protect a person and a family by preventing, eliminating or reducing social risks also in case of motherhood (Social Code Act, 2015).

As childbirth benefit service is administrative procedure, Social Code should be looked together with Administrative Procedure Act (APA). Social Code Act sets specialties to Administrative Procedure Act, since APA is not very well considering social protection specialty as well as modern society needs and information technology opportunities (Seletuskiri…, 2013). APA sets general rules for all administrative procedures for better protection of the rights of persons (2016).

In addition to that, Personal Data Protection Act must be considered. Like most social benefits so does childbirth benefit require processing of personal data, and in the light of proactive service, data processing is needed without benefit receiver's application. The aim of Personal Data Protection Act is to protect the fundamental rights and freedoms of natural persons upon processing of personal data, above all the right to inviolability of private life (Personal Data Protection Act, 2016).

According to Social Code Act the right to receive childbirth grant benefit arises from the child's birth. As it says in Social Code Act, one is entitled to receive benefit since occurrence of the event, the occurrence of the fact or compliance with other conditions serving as the factual basis for providing benefit provided by law (2015). Therefore the application legally has only formal meaning.

As stated in both SCA and APA benefit provider has obligation to notify the person about the entitlement to receive benefit. Using technological opportunities the benefit provider has to verify the compliance of a person with the conditions for receiving benefit and has to inform the person about the occurrence of the right to receive benefit (Social Code Act, 2015). So if the benefit provider has technological possibilities to collect necessary data and verify the compliance of a person with the conditions for receiving benefit, then the service provider has the right to initiate checking necessary data without waiting for an application. The benefit provider has to notify benefit receiver on the occurrence of the right to receive benefit to the e-mail address of a person, through an information system enabling the electronic identification of a person or at the benefit provider (Social Code Act, 2015; Administrative Procedure Act, 2016). Notifying the person about his/her rights raises effectiveness of administrative proceeding and improves social protection (Seletuskiri…, 2013). Without notifying people may

not be aware of the rights they have and benefits they may receive, that is deplorable especially if the person has difficulties in coping.

Both SCA and APA allow benefit provider to initiate proceeding and provide benefit without an application. According to Social Code Act it is possible to provide the benefit without the submission of an application (2015). In that case benefit provider has the obligation to inform service receiver about providing benefit or refusal to provide benefit at the residential address indicated in the population register or with the consent of the person via e-mail, at the benefit provider, through an information system enabling the electronic identification of a person or other way provided by law (Social Code Act, 2015). Also in Administrative Procedure Act it is stated that administrative body has the right to initiate proceeding process without application (Administrative Procedure Act, 2016).

In conclusion, even though many lawmakers still require application in order to provide a service, general rules of administrative procedure and social protection do not necessitate such formal act. Considering that childbirth benefit has no right of discretion (is only decided based on compliance with the rules) and the right to receive benefit arises from the child's birth, then if the local government has technological possibilities to verify the person's right to receive childbirth benefit, it is justified to initiate the process. It is only required to notify the benefit receiver of occurrence of such right and give the service receiver an opportunity to decline (Social Code Act, 2015). Authors of SCA and APA have foreseen technological improvements and data sharing opportunities in order to raise social protection and effectiveness of procedure processes. Allowing proactive services is a step forward of current logic of public services (Seletuskiri…, 2013). Of course this kind of proactive service requires data processing which must be done according to Personal Data Protection Act. According to Personal Data Protection Act an administrative body has the right to process personal data in the course of performance of public duties in order to perform obligations prescribed by law (Personal Data Protection Act, 2016), but the data which is processed must be minimal amount in order to verify and notify the person about the right to benefit (Personal Data Protection Act, 2016).

3.1.2 Technical/design perspective

As a stakeholder AS Andmevara represents the design team and technical knowledge. The goal of the interview was firstly, to find out objectives and future plans of current KOVTP and KOVMEN, also which obstacles occurred when developing those systems. Secondly, how they

see the future of local governments services and whether they think if proactive services would be feasible.

AS Andmevara is IT services company. They are currently partners for the management and development of information systems for Estonian local governments (Andmevara, (20.03.2017)). AS Andmevara has, among other things, developed widely used service portal KOVTP for local governments, which is a website content management solution, and KOVMEN, which is a system for digital procedures. It helps local government officials to proceed digital applications.

As mentioned above, KOVTP is a service portal for local governments, which purpose is to make service application process more comfortable for the citizen. As stated by the interviewees: *"The main idea was to make service application process more comfortable for the citizen."* If KOVTP is more of a window for the citizen, then KOVMEN is a tool for the local government official for proceeding the electronic applications. KOVTP is available for local governments for 47.5 euros per month and KOVMEN as extension is additional 10 euros per month. According to the interviewees KOVTP is more popular among Estonian local governments than KOVMEN: *"KOVMEN, which helps officials to proceed and coordinate digital applications, is less popular, because some local governments don't consider it necessary and they prefer to continue to proceed applications manually"* Basically both KOVMEN and KOVTP are very much focused on applications, making application process more comfortable for citizens and for officials. It is a step forward from paper based procurement and definitely helpful for local governments. Next step, using Service Design and Design Thinking approach, should be shifting the focus away from the goal of submitting an application as comfortable as possible, to getting the service as comfortable as possible. And even further, analyzing deeply individual goal of each service - weather it is reducing difficulties in coping or guarantee each child essential school supplies etc.

When developing KOVTP and KOVMEN the motivation of local governments to start using it was not very high. Local government representatives' effort in development process was small: *"Local governments just sent application forms they wanted to be transformed into electronic forms, therefore their effort was rather minimal in developing those systems. They [local governments] just needed readiness to adopt the new system."* One motivation killer mentioned by interviewees was the cost of the service: *"One obstacle was that KOVMEN and KOVTP is not for free. Before that local governments could use free electronic forms in Eesti.ee portal,*

but this alternative was closed." Knowingly local governments' budget is very limited, therefore investing in e-service development might not be their first priority, especially for smaller communities. They seem not to be very enthusiastic about adopting change in their service system: *"Considering how much we hear about e-Estonia, local governments representatives were not in line at the door to start using the new system. They seem to be enough satisfied with physical appointments and sending PDF's via email."* Coping with change and adopting technological tools by users is definitely one of the most difficult and time consuming things when dealing with IT projects. Especially in smaller local governments the officials might have common fears like they are being replaced by automated services, or they are afraid of technology just because it seems difficult to handle because they are not familiar with it.

The level of involvement of users, local government officials and citizens, into development process was moderate. Local governments' representatives' interests were listened, but they are not involved as largely as Service Design approach would suggest: *"Money comes from Ministry of Finance. Local governments are not willing to pay for developments. But when talking about involving in sense of listening their interests and needs, then Ministry of Finance is in contact with local governments and we as well. Currently there is a long list of indispensable work in developing KOVMEN and KOVTP. If those essential things are done, then local governments can be more involved in generating ideas."*

Development of KOVTP and KOVMEN is far from finished. There are still much to be improved and functionalities to be added. Ministry of Finance, as the project contractor, is still planning further developments. When asked about future plans of KOVMEN and KOVTP, the interviewees said: *"There are big plans. KOVMEN could offer more opportunities for local governments' officials. Ministry of Finance is targeting money and is ordering further developments".*

In general, in interviewees' vision, public services in local governments are moving towards bigger involvement of citizens in decision-making and more alternatives of service channels: *"Our one product is VOLIS, which is a system for municipal governments for involving members of the public in the decision-making process. Involving citizens in decision-making, as this product, is becoming more and more popular among local governments. As after administrative reform local governments regions are getting bigger and city or commune administrations are moving further from many people, therefore there should be interest in developing alternative channels for services, so that people do not have to go to city or*

commune administration physically." Also there is still lack of good technological tools in local government service delivery system: *"Also there is a need for good tool for city/commune social workers to handle social services."*

When asking about the feasibility of proactive services in local governments, then according to interviewees, proactive services could have a role in future public service system. In one hand the function of KOVTP and KOVMEN would diminish, but in the other hand the role of current systems could just be reconsidered: *"In one hand, in case of proactive services, the purpose of KOVMEN electronic applications is lost. In the other hand, even in case of proactiveness, there is still a need for information system to collect and handle the data to provide the service. You still need a procedural system for the service."* Yet, even in case of proactive service, the service and service system still exists. The service process is invisible for the citizen, but the back-stage process still has to run in some information system.
Another important thing to keep in mind from the design point of view is that there are always exceptional cases: *"But still, there are always exceptional cases and for those cases there needs to remain possibility to submit an application as well."* Therefore the possibility to submit an application cannot be completely cut off and, at least in the near future, there has to be an opportunity to submit a paper based as well as electronic application. From Service Design perspective, there is a saying that never punish 99% of your customers because of 1% of you customers. It would be a major improvement in administrative procedure if 90% of childbirth grant would be paid out proactively with automated procedure. Or even, if other similar benefits would be automated with same level.

When asking about possibility of proactive services in KOVMEN, then considering reasons above interviewees thought it would be conceivable: *"Therefore, in the future, there might be some role of KOVMEN in proactive services."*

From design and technical perspective there are several obstacles that might occur when designing proactive services. Some pain points that interviewees highlighted are following:

- The exceptional cases – among the main process flow, there are always cases that divagate the main flow. The biggest factor of creating exceptions is the quality of data (or lack of it). In case of childbirth benefit majority of data comes from Estonian Population Registry. Due to technical and human factors there might occur some inconsistencies of data in the registry: *"The exceptional cases have to be thought through – if data is not qualitative in Population Registry (e.g. there is no start date of*

residence address, residence address data is not correct, etc). But it is not a big obstacle, because if those mistakes occur, it can be fixed. Many exceptional cases are matter of agreement how to act in certain situations."

- A fear of local governments that they have to pay out more benefits than before – *"One objection that local government representatives might have against proactive services is that when people have to submit an application, then there is a change that not all of them will apply for the benefit and in that case the money remains to the local governments. In case of proactive services it is sure that the local government pays the benefit to 100% of people eligible for the service. Local governments' representatives might want to keep the change that they don't have to pay out 100% of the benefit and some money will remain."* Yet, this argument is presumption and should be discussed with local government representatives.
- A fear of automatization – Like mentioned before, people by nature are reluctant to change. Therefore it is probable that the officials who are handling applications today might have questions about their position: "*Another thing might be that local governments' officials are afraid if their position is no longer needed when services are automated."*
- Some services cannot be proactive – Childbirth benefit has no right of discretion, which means that the decision depends only on fact weather the person complies with the rules or not. But there are social services which have the right of discretion, meaning that the local government has the right to deliberate over the reasoning to give out benefit. "*There are services that depend on variables like personal income or need-based grants - in that case proactive services would probably not work. But other services like childbirth grant, benefit for children going to first grade etc. - services that don't depend on such variables and state has all the data – then why not."* On the other hand, local government can still initiate service process and proactively collect all available data and notify the person about the course of the proceeding. If necessary the service receiver could be asked to provide more information/documents or whatever is missing from making the decision. Proactive service does not have to be 100% automated, the goal of it is to put as much effort as possible from the state's side first and notifying the person about his/hers rights, and if necessary and asking the citizen to involve only if really needed.

- Juridical restrictions that affect technical solution – there still might occur some juridical nuances when starting to think about technical solution. For example in case there is no application nor citizen's active involvement in the service process, but the local government needs citizens' bank account number in order to pay out the benefit. In the population registry there are no bank account numbers, but Social Security Administration or Tax and Customs Board might have. Can they share the data with a local government? Also local regulations might have some procurement rules written in that have to be checked over. "*There are some juridical nuances – whether Social Security Administration can share bank account number, or whether according to legislation the premise of the service is an application or signature, in that case there is a need to change the legislation."*

Interviewees were also asked about technical possibilities to share data between different registries and weather there might occur some obstacles, but according to the interviewees, main Estonian registries are already connected: *"Do not thinks so, because they are already sharing much data. Main registries are already interfacing with one-another"* and "*childbirth grant service mostly relies of data from the Estonian Population Registry. If you have qualitative data in the population registry, then there are no problems."*

Interviewees were asked about Estonian people readiness for proactive services and whether they would be intimidated to get notifications from their local government or by the fact that the state knows all the facts about them in order to provide full service. But in the interviewees' opinion that would probably not be an issue: *"Younger people probably would not. But actually people might have feeling that it is fine if state collects data but better not use it. For example people know that state collects data in population registry, but they are surprised to hear that this data is actually being used by many others. Maybe in case of childbirth grant there is no problem for people to know that state knows the facts about the person (that child is born, residence data, contact info etc.), but for example in case of difficulties in coping it might be frightening to know how state knows I am having troubles"* and "*In general, most people would be happy and satisfied about such services*." Especially when it comes to receiving money, people probably would react positively: *"If the citizen gets money from the state then of course. Most people would welcome such services."* Yet, this is something that has to be explored and observed with the citizens' themselves.

Some questions emerged during the interview that remained open:

- Whose interest it should be to raise local government's service quality in order to reduce costs? Local governments' or state's?
- Who should be the main initiator in developing e-services for local governments?

But these are questions for further studies.

3.1.3 Social perspective

As a social stakeholder the most important are users themselves. In current case there are two types of users: 1) service providers – they are local governments who are in the back-stage of the service using the proceeding system; 2) service receivers – they are citizens who are receiving the benefit.

Estonian local governments

Questionnaire was sent out to 11 local governments in Estonia. The selection was based on probable location, size and number of habitants after Administrative Reform. Selection is based on the map launched by Ministry of Finance of Estonia which shows merging local governments with the number of habitants after merging (Kohaliku omavalitsuse…, (09.04.2017)). Since after reform the number of local government decreases and areas of local governments are going bigger, the question of service accessibility raises into focus. And because of the pain point of service accessibility in dispersed settlement areas local governments that are rather large by area, but small and medium by number of habitants were chosen. Mostly parishes were chosen and cities were left out, again because of having areas with dispersed settlement in focus. Besides, usually bigger cities have larger budget, therefore they have more opportunities to develop and modernize their services.

8 out of 11 local governments answered the questionnaire, therefore respondents' rate was 73%. There were 10 questions, mainly open questions, sent via e-mail and the goal of the questionnaire was to get insight how important they consider offering services via e-channels and what is their first opinion about proactive services and would they implement them. Therefore rather general and diffuse questions were asked in order to grasp the bigger picture first and map focus areas that need deeper research in further studies.

From the results appear that most local governments (6 out of 8) claim to be satisfied with their direct public services. Direct public services are services that are provided by local government and consumer can receive the service based on application or other appeal, e.g. childbirth

benefit, first grade benefit, applying for a kindergarten etc. Interestingly, satisfied claimed to be even a local government who does not have e-services in place and only electronic way to apply for a service is via e-mail. Half of the respondents have e-services in use, 2 are currently developing or migrating, and 1 only electronic way is e-mail. 100% everybody said that their services could be better and more modern in smaller or larger extent. Many pointed out that services need constant improvement and modernization. 100% of respondents consider e-services necessary and important and rather in uptrend. Some pointed out that it reduces cost of time, money and paper. Interestingly, one local government admitted that they have used but closed some e-solutions because of lack of interest and usage. For example a forum for local people to give feedback to local government and talk about concerns in the area, but they closed it because of low utility. But they also mentioned that similar discussions have moved to local government's Facebook page. This is extremely useful insight that people nowadays do not want a special environment for such services, they want more convenient channels that they are using everyday anyway. Therefore, governments should not expect people to change their habits, but try to derive profit from them and experiment more with channels that people are used to.

When asking about the necessity to raise service accessibility after the Administrative Reform, then 6 respondents said that accessibility definitely has to raise, 2 said it should rather raise. Main reason for the need to raise accessibility after Administrative Reform was that the local government areas are going bigger and distances are going longer. Therefore, there is a need for more e-solutions and reduce the times that the citizen must go physically to commune administration.

One concern that came out of a technical stakeholder interview was the price for an e-service platform. Knowingly, Estonian local governments' budget is very limited, and especially in smaller local governments, therefore it can be expected that they are not motivated to develop their services and especially to adopt solutions that cost regular fee. But as the results of the questionnaire show, all local governments who responded admitted they would pay for an e-solution, if it is for reasonable price and the e-solution is really efficient. They seem to take it as an inevitable necessity, even though, like one local government's representative mentioned: *"kindergarten's roof is more important than some e-system"*. Some pointed out that even if it costs a little, it would reduce administrative burden, therefore would be useful. And one respondent mentioned that help from the central government would be expected.

Whose competence or authority it should be to develop local governments' direct services? Should it be under each local government's own responsibility or should it be coordinated state level? According to the questionnaire opinions differ significantly. Yet, 5 out of 8 support the opinion that local government service development should be coordinated at state level by ministries. Still, all 5 also mentioned that each local government has its own peculiarities, therefore tight cooperation with local governments by ministries is important and also, each local government should have possibility to modify according to specific needs. 1 local government mentioned that some services should be coordinated state level and some should be local government's own responsibility. And two respondents think that state level ordinance is not needed and every local government should analyze their own needs and develop their own services. It is clear that in that matter opinions differ and for making that decision separate research is needed.

Even though Service Design methodology states that people often say one thing and do another, therefore it is never trustworthy to ask whether people would use some new product or not, it was still asked from the selected local governments whether they would implement proactive services. The purpose of that question was to assess their reluctance towards such disruptive thought about proactive services. Surprisingly, 6 respondents said they would, one said they already have and one said cardinally no. It is very positive and a good start to see that the mere thought of proactive services is not objectionable for them. They justified their support towards proactive services with the reason that it is not reasonable to make people come to the commune administration just for the application, and that it would reduce administrative burden, and reduce time of proceeding etc. What is even more surprising is that one local government from the research already has implemented a proactive service – benefit for first-graders. This benefit is meant for parents whose child is going to the first grade, everybody is eligible, and it does not depend on income. Instead of requiring applications from each parent, this local government has asked first grade class teachers to collect parents' bank account numbers and submit them to commune administration (Aabitsatoetus, (17.04.2017)). From the parents' point of view, the service really is proactive, since they do not have to make extra effort for finding information and requiring the service, school offers them the service and just asks bank account number. It would be even more convenient if the parents aren't asked anything and just receive money, but in current case it is understandable that the local government cannot make the decision which parent receives the benefit (since both parents are eligible, and they have to choose who receives it). It is very positive to see that there are examples where officials have changed their

mind-set about traditional public service delivery and accepted approach that there is not always an application needed, just because that is the way we have always managed.

When asking about local governments' opinion about obstacles or threats when implementing proactive services then different things were pointed out. For example they mentioned that benefit eligibility conditions are sometimes complex and it is difficult to check those automatically; or that it is difficult to change both officials and citizens old habits and lack of willingness and knowledge to adopt disruptive things; as well as juridical constraints were pointed out; or lack of access to data and bad data quality; or that people cannot be fully replaced with automation and that citizens have to have possibility to make choices; and few said they don't see any obstacles to implement proactive services; etc. All of the pointed out aspects are valuable insight of local government officials' thoughts, concerns and needs, which need to be addressed. Some of the assertions could be disproved quickly and probably are caused by lack of design/technical knowledge – for example many eligibility conditions mentioned, like if the parent has lived in certain area for x amount of time, is very easily checked from the Population Registry. They also mentioned some service process steps they claimed that human factor cannot be replaced in, but from service design perspective they haven't asked what value this certain step in the process creates and maybe this step is not needed at all, with human factor nor automated. As well as juridical constraints, which current research legal analysis already disproved. And so forth, but it is most certainly sure that in the next phase of research and project towards implementing proactive services, all those mentioned concerns must be addressed, explained and discussed with the most important stakeholder - local governments - in order to make them feel involved and break the ice. Secondly, many things are more easily disproved with illustrative demo, prototype, for showing them what is possible, rather than explaining. Even though this brief study has shown that local governments are more open to disruptive things than assumed, it is still very important to deal with the change management and service design methodology have proved to be effective when dealing with change.

When talking about childbirth benefit, which will be redesigned in current research, 2 local government mentioned that in case of childbirth benefit, proactiveness would be doable, since most people who are eligible for the service apply for it anyway and the eligibility is rather based on simple facts. But 2 local governments oppositely, said it would not be possible in case of childbirth grant, because firstly, both parents are eligible and local government cannot decide which parent receives the benefit, and secondly, local government does not know parents' bank

account numbers. Yet again, it is true that these are aspects that need to be addressed and possibly overcome during ideation and re-design phase in current research.

Citizens

As service receivers 10 young women were questioned through online interview. Concrete target group were mothers who had applied for childbirth benefit in their local government in past 6 months. The goal of the interviews was to explore how they feel about current childbirth benefit application process and how they would feel when local government services would be proactive.

Unlike other stakeholders, results of the interviews were very similar. 9 out of 10 women went to the Department of Social Services in city administration to apply for the childbirth benefit. They had to fill in an application with their personal identification number, bank account number and child's personal identification number. None of them used the opportunity to send the application via e-mail, because they did not know this possibility exists. 1 interviewee had not yet applied for childbirth grant from the local government, because: *"it is too much hassle to go there physically, I have completed all other things which I could via e-services, but I haven't taken the effort to go to the city administration yet".* All of them agreed that it is bothersome with a newborn to go to physically to submit applications to different public offices. In some local governments it is fixed that the mother of the child is eligible for childbirth benefit, in others parents can choose whether they want mother or father to receive it. 9 interviewees out of 10 had the possibility to choose, but all of them chose the mother.

In most local governments the childbirth benefit is divided into two parts. First part is received when the child is born and second part usually when the child is 6 months, or 1 year or 1,5 years old. In most local governments, when you apply for the benefit after the child is born, you will receive the second part automatically, but 3 out 10 interviewees have to submit another application to receive the second part of the benefit. Therefore they have to submit 2 applications with the same information in quite short period of time for the same benefit.
When asked how and where they got their information about how to receive the benefit, then majority of them got the information from their relatives, friends and from maternity hospital. 4 of them had their second child, so they remembered it from the first time. Interestingly, none of them mentioned local government website, but in the other hand, when searching information about childbirth grant from various local government websites, it is very difficult to find

information and at some cases even impossible. One interviewee was asked, as a user testing case, to search information about how to apply for childbirth benefit from her local government website, the result was bad, she could not find it and after 15 minutes of trying she gave up.

When asked how they would feel when after their child is born and registered, they would get a notification that they are eligible for childbirth benefit x amount and it will be automatically transferred to their bank account, all interviewees felt positive about it. They said it would be great, if they didn't have to go the public office to submit an application, especially at such busy times with a newborn baby. None of them had any hesitations about the idea, only one interviewee after saying it would be nice, asked: *"how would that work, where would the local government get information?"* In addition they were asked which channel they would prefer to get notifications from local government, half of respondents preferred e-mail and half SMS.

Since none of them had any hesitations about the service being proactive, they were also asked how they feel about the fact that government knows information about them without asking. Only 1 respondent had a bit negative emotions about it: *"after you mentioned it, I think it would be a bit disturbing, but only on the first time applying for the benefit, second part of the benefit could still be automatically transferred".* Other 9 interviewees said that the government already knows the information anyway.

It is clear that people take the services they are offered as a necessity, just something they have to do anyway, and they do not realize it could be done differently before it is mentioned to them. Also if services would be proactive and automated they would probably be very satisfied with such services, and they do not think where the government gets the data, before you specifically point to the fact and ask.

About childbirth benefit, it is also clear that it is quite bothersome for fresh parents to submit applications in different public offices, and that they are not asked any specific information that could not be get via other channels.

3.2 Conclusion of empirical study

As an empirical study the research topic was divided into sub-topics in order to involve all important aspects of research subject. For answering the main research question – whether it is realistic to implement proactive services in Estonian local governments – key stakeholders from three areas were involved.

The goal of exploring legal perspective was to get understating of legal ground, its possibilities and restrictions when implementing proactive services in Estonian local governments. As a legal stakeholder Deputy Head of Department in Legal Matters of Ministry of Interior of Estonia was consulted. In addition all concerned legal documents were studied.
As a conclusion one could say that legally proactive services are possible and even favoured. The main questions under study were:

- Is it possible to initiate a service process without citizens interaction first (is it possible to start a service process without an application)?

- Is it possible to send notifications to citizens about proceeding progress and results via SMS, e-mail etc.?

All social benefits provided by the state and local governments are part of social protection system (Social Code Act, 2015) and therefore regulated by General Part of Social Code Act. As childbirth grant service is administrative procedure, Social Code should be looked together with Administrative Procedure Act. In addition to that, Personal Data Protection Act must be considered.

According to Social Code the right to receive childbirth grant benefit arises from the child's birth, therefore the application itself has legally only formal meaning, and a person is eligible for a service also without an application. According to relevant laws, if the benefit provider has technological possibilities to collect necessary data and verify the compliance of a person with the conditions for receiving benefit, then the service provider has the right to initiate checking necessary data without waiting for an application. Answering the first question, whether a local government can initiate a service without waiting for citizen's application, the answer is yes, legally it is allowed and even favored to bother the citizen as little as possible if the service provider has access to necessary data via other channels.

As stated in both Social Code and Administrative Procedure Act benefit provider has obligation to notify the person about the entitlement to receive benefit. It is also stated that if the service provider starts proceeding process without citizen's application, then the service provider has an obligation to notify the service receiver about proceeding progress. Answering the second question, whether it is possible to send notifications to citizens via SMS, e-mail and other channels, the answer is yes, it is not only allowed but even obligation to send notifications about the right to receive a benefit and about proceeding progress.

The only legal acts that may not be in compliance or may cause some trouble are local government regulations of conditions and procedures for granting social security benefits. In many local government regulations it is stated that benefit will be provided based on written application, as well as they let people choose whether the benefit receiver could be mother or father. This statement that "service is provided based on written application" is very outdated, and since the law above does not require it, it can be easily changed and renewed according to modern opportunities and needs. As well as letting people choose whether the service receiver is mother or father of the child, since almost always the service receiver is mother (if the mother is legally able to cope), therefore the simple change to by default designate the benefit to the mother would be reasonable. All though, there always remains the possibility to change benefit receiver, bank account number or even to opt out.

The goal of investigating technical/design perspective was to get insight of technical limitations and to gain knowledge from previous important IT-projects for Estonian local governments, therefore AS Andmevara was chosen as a key stakeholder to be interviewed. They are currently partners for the management and development of information systems for Estonian local governments, and AS Andmevara has, among other things, developed widely used service portal KOVTP for local governments, which is a website content management solution, and KOVMEN, which is a system for digital proceedings.

Interview revealed that current KOVMEN was developed with the goal of making application process as easy as possible, but with no attention to provide proactive and without application services. Local government representatives' motivation was not very high when developing KOVMEN, but at the same time they, as the most important users, were not highly involved in the design process either. An opinion pointed out in the interview that one motivation killer could be the fact that the service is not for free, was refuted by local governments themselves, who claimed that they are willing to pay if they get a useful service for that cost. Another thing highlighted was local governments' willingness to cope with change and new technologies, this was also mentioned by local governments themselves, yet local government representatives seemed to be more open to innovation than expected. Still, it is clear that local governments' motivation and coping with change is something that needs high attention. Believably, service design methodology, with its focus of involving users in very early stage of design, helps to overcome the problem. That may be the biggest lesson from previous project.

There were also some potential drawbacks mentioned, which many of them already were refuted by other stakeholders and research in previous and further chapters, e.g. legal implications, but some remained relevant:

- The exceptional cases – there are always exceptional cases and deflections from positive process flow. This is something that needs to be considered in every service design project. For example, there needs to remain possibility for the citizen to interrupt proceeding progress whenever necessary (change some data, opt out etc.), as well as cases when there is not enough data about the person in order to carry out proceeding.

- Data quality – data quality is one of the biggest concerns that occurred during the whole research. Even though childbirth benefit relies mostly on data from Population Registry, data there is not always qualitative. Some data might be missing or incorrect. Those cases must be seriously taken into consideration when designing proactive service process.

- Some services cannot be proactive – this factor was also mentioned by local governments and is obviously true. Not all services can be provided without citizen's involvement, because for some services additional information is needed that is not stored in state registries. As well as, benefits with the right of discretion, are more complicated cases. Most easy services to provide proactively, as in narrow view (explained in chapter 3), are services that have no right of discretion and base on simple facts. But when talking about more complex services, then the local government can be proactive as in wider view, meaning that the person can be informed that he/she might be eligible for some service, and all possible conditions can proactively be created for the person to use the service (and submit an application if needed) with as little effort and trouble as possible.

Citizens' readiness to receive proactive services was proved by both AS Andmevara as well as citizens themselves. Target group of childbirth benefit is rather young people 20-40, which is believed to be most receptive to innovative solutions.

What regards technical obstacles of data sharing between registries and institutions, since proactive services require intense data interchange, there are no obstacles, since most Estonian registries are already interfacing and sharing data, and if there is not yet some concrete inquiry, then it can be rather easily created. Estonian data sharing platform X-Road (Infosüsteemide…,

(25.04.2017)), has created good foundation for sharing data fast and secure between government institutions.

As a result from technical/design perspective proactive services in Estonian local governments are feasible. Even though there are some technical nuances that need to be taken into consideration, there are no insurmountable obstacles.

From social perspective two types of stakeholders were involved to the research: local governments as service providers and citizens (fresh parents) as service receivers. The most important goal of the questionnaire to local governments was to assess their reluctance towards the idea of proactive services and to assess their motivation to develop e-services. From the questionnaire to local governments' representatives the most important fact that occurred was that local governments are not aware of opportunities that technology and service design might offer. And they can't be blamed for that, because in most cases users do not know what they want or could get. It is designers' task to show users what they need. And that only half of respondents claimed they have e-services in place in their local government. Yet, having e-services is not necessarily a prerequisite for proactive services, it still shows that they are not very far with the development of modern e-community. This might be the place to think whether focusing on proactive services, instead of many fancy e-services, could reduce the cost of developing e-services? Since if some services are proactive and consolidated, the number of services in general reduces.

All local governments involved in the research agreed that after Administrative Reform the need to raise accessibility of services will raise, therefore in the light of Administrative Reform proactive services are even more valuable.

More than half of involved local governments claimed they would implement proactive services, since it would reduce administrative burden, and reduce time of proceeding. They noticed that it is not reasonable to make citizens visit government offices when there is no valuable reason for that. When asked about potential obstacles when implementing proactive services, then mainly juridical restrictions and lack of access to registries and data were pointed out. Juridical nuances were already disproved and lack of access to registries is not technically difficult issue and can be solved easily.

Another very important notice from local governments' answers were that they want to be more involved in service design process if those platform are developed at state level and initiated by

ministries. They admitted they all have their own peculiarities which they want to be considered, and they also want possibility to modify service platforms according to their specific needs and interests.

Therefore in general, local governments are more open to innovative solutions as well as proactive services than expected. They are willing cooperate if they are involved and listened. There is definitely some change management needed to be organized, but overall majority of them see the need to raise service effectiveness especially after Administrative Reform and usefulness of proactive services, even if they some hesitation due to their lack of knowledge about technical opportunities.

Last stakeholders involved in empirical research were mothers of young babies. The goal of online interviews were to explore what they think about current childbirth service process and how they would feel if the service was proactive. The results were very similar, they all agreed that is quite big trouble to go physically to hand in applications for benefits in different offices with a newborn baby. It also occurred that it is very difficult if not impossible to find information about how to apply for childbirth benefit. They all claimed to be satisfied if the service was proactive and most of them had no negative emotions about the fact that local governments knows information about them without asking. As usual users, they were not aware of any other possible way of applying for government services than with an application. But as being service receivers, who in case of proactive services, have minimal effort compared to current situation, it is understandable that they would be satisfied with the solution.

In conclusion, none of the four stakeholders in three perspectives – legal, technical nor social – pointed out any insurmountable obstacles that stand in the way of implementing proactive services. All key stakeholders found proactive services to be useful and feasible. Probably the most challenging stakeholders will be local governments, as well as they are the most important since they are direct users and probably most affected by the new approach.

3.3 Discussion

Overall, it is important to keep in mind that IT is never end in itself. IT is a tool that one might or may not use in designing good services. Sometimes IT helps to provide better services, but the biggest value is created with a change in perspective, rather than adopting new technology. Innovation is just shifting perspective of things. It is the same with proactive services, it all

starts with a change in mind-set. People in general are not very receptive to changes, especially when it comes to public services. People are stuck with traditional approaches and it is hard for them to change already formed picture in their heads of the world and how things should work. Proactiveness is a matter of mind-set, rather than an IT issue. It requires this simple, yet cardinal, adjustment in people's heads that public services do not have to start with an application, instead the government can initiate services. The "application-first" approach is in people's blood, and this shift of perspective of public service delivery is not easy to come, but in the end creates major value.

According to three phases of proactiveness (explained in chapter 2.5) Estonia is not fulfilling any of those. There are not many service channels in use, only physical appointment and service portal Eesti.ee (which future is currently uncertain). There are few notifications sent via e-mail, but at minimum rate. And as it occurred there are barely any proactive services initiated by the local or central government.

However, Estonia stands on good foundation for implementing proactive services, it has technological infrastructure in place to support the development. Estonia has electronic identity to authenticate people, national databases full of data, x-road for sharing the data fast and secure, etc. As well as supportive legislation for using modern technologies, and political will to implement innovative solutions. According to Estonian legislation and national strategies, handbooks and guidelines, which all are forward-looking and supportive for innovation in public sector, there is a strong political will from the top to implement innovative public services. Yet from the bottom, the actual practitioners seems to be slow to go along and to be creative. In case of Estonia, innovation is rather pushed from top to bottom. For example, Estonia has adopted Once Only Principle, which forbids asking the same data twice from the citizen. The Once Only principle is strongly controversial to the "application-first" approach. Estonian governmental institutions are collecting data about citizens with every service the citizen uses. There is huge potential, in theory, to seriously follow and practice this principle and make value out of that data, yet many service providers are again slow to adopt the idea that they do not have to ask *everything* from the citizen *just in case*. The Once Only Principle by itself does not solve the problem that service providers might still ask too much information from the citizen or that the collected data is used with full potential (Liiv, 2017). In many cases the government (including local governments) has all necessary data to provide a service and knows a person is eligible to it, therefore there is no other reason, than formal, to ask the person to submit an application. Some services, like childbirth benefit, could be initiated and provided

with no other interaction with the citizen than sending notifications about the proceeding progress. For local governments to access and ask data from national databases is not technically nor legally a problem, it is a matter of willingness and creativeness of local government officials, ministries' officials and service designer and developers (IT partners). The only technical topic that comes up when designing proactive solutions is the quality of data in national databases. This is something that today needs improvements.

New technological solutions and opportunities are in one hand changing people's behavior and expectations to public services, but in the other hand give public institutions opportunity to raise efficiency of public service delivery. Big data, open data, social media etc. are just few examples that create possibilities to re-consider the way government should operate and interact with its citizens. It is understandable that using those technologies require resources, especially human resource, with the skills to create value out of those technologies, but there are also bits and pieces that local governments can take up today without major technological expenses. For example using social media for being proactive and perhaps sending notifications to people. Taiwan has a goal to sink in people's everyday lives. Perhaps Estonia has some good insight and ideas to take from them, to change the vision of government as being something bureaucratic and difficult, to being easily accessible and proactive when possible.

Creating proactive services requires large cooperation between governmental institutions. The citizen does not have to know under which institution's jurisdiction some service is, it is the matter of the institutions to share information between each other, so that the citizen does not even notice the service required involvement of more than one institution. For creating proactive services sometimes the data might be distributed in many different governmental institutions and their databases. As well as in the phase of developing proactive services there might be a need for some software development in parties of the process, like creating new inquiries or modifications in existing software systems. There might be involved several governmental institutions, who all have different priorities and work lists ahead, therefore the progress of extensively implement proactive services might be slow as usual IT development in public sector.

In conclusion, Estonia has necessary technical and legal prerequisites in place for starting to implement proactive services in local governments, the hardest to follow is the shift in mind-set. The biggest challenge is letting go of the "application-first" approach and shifting the perspective of public service delivery to be more proactive. It requires convincing all possible

stakeholders, like project financial contributors, designers, developers, as well as users. Local governments' representatives are slowly starting to realize that improving their services is important, especially it the light of Administrative Reform. In theory, they see the benefits of investing in improving the service quality, it just is often not their first priority nor have they right knowledge and skills to notice the opportunities they really have in hand. It is clear that proactive services are more cost-effective for the local government, more convenient for the citizen and conducive to innovation, Estonian local governments and other stakeholders just need a little additional boost of Design Thinking, creativity and a change in perspective.

4 Case study

The goal of this chapter is to illustrate and make it more practicable how a service could be re-designed with proactive approach. This chapter consists of two parts: first part called AS-IS explains what childbirth grant is, what the process of the service is today and what are its shortcomings, second part called TO-BE offers three potential proactive solutions. In the second part, when designing solutions, results of empirical research are taken into account. All important notes from stakeholders are considered and solutions are designed with best intentions to meet all stakeholders' needs.

From service design perspective it is "ideation phase", conducting first best solutions. Also several service design methods and tools are used. Usually after ideation phase rapid prototyping and user testing is conducted for getting feedback and possibly going back to exploration and new ideation phases, but this is the matter of further research.

Mapping current process and re-designing the service is based on principles and framework of process mapping by Ministry of Economic Affairs and Communications of Estonia (Protsessianalüüsi käsiraamat, (02.04.2017); Protsesside kaardistaja meelespea, (02.04.2017)).

4.1 AS-IS

4.1.1 Business background

For mapping current service process one Estonian rural municipality, Väätsa Parish, is used as a test case. All local governments are a bit different and their service processes are a bit different, but the purpose of the current process mapping is to get insight and knowledge how childbirth benefit is usually applied, what is the information that a local government needs before providing the service, what channels they use to get this information, what are necessary steps of proceeding etc. The choice of Väätsa Parish was rather not purposeful, since my objective with this research is not focused on the Local Government but the service. Every Local Government with its resources is different, but the outcome of the childbirth grant service is always the same and all local governments are managing social services under same general law. The goal is that the re-designed childbirth grant service will later be applicable in many Local Government and even be a sample or framework how to design other services similarly.

Väätsa is a small parish in the middle of Estonia. Väätsa Parish covers one borough and 10 villages. In Väätsa parish there are 1288 inhabitants and 8 inhabitants per km^2 (Väätsa valla arengukava, (04.04.2017))
After Administrative Reform most probably Väätsa will be merged with Türi Parish and Käru Parish having approximately 11 099 habitants all together.

4.1.2 Service background

Childbirth benefit is a social benefit provided by local governments is a benefit for fresh parents for helping to cover first essential expenses associated with birth of a child to a family.
The general conditions for being eligible to the benefit are the same in every local government – time period of being resident of the local government area, you have to be the parent or legal guardian of the child. The eligibility is based on those two facts and there is no right for discretion.
Concrete rules of those two conditions – time of residence, being the parent – vary among local governments. In some local governments you have to have been registered to the local government before the child is born for 6 months, in others 1 year etc. Some local governments say only mothers are eligible, some say it could be either mother or father.
Additional information needed to provide the service is service receiver's bank account number.
Therefore, there are three service conditions currently checked by local government officials:

- If the birth is registered (birth registration service where parents will register a name for the child)
- If the person is registered to local government for x period of time
- If the person is mother/father or legal guardian of the child
- Additionally is needed bank account number where to transfer the benefit

4.1.3 Business process

Currently Väätsa is not using any IT solution in childbirth service process, except accounting software. People have two options to apply for the service: physical appointment or e-mail. 99% on people use physical appointment, rather than e-mail.

Included officials and their roles in the process:

Included official	Role description
Citizen	Submits an application and receives the service

Township secretary	Accepts applications, checks the applicant's place of residence in Population Registry
Commune administration	Decides whether to approve the application and make's a decree to township accountant
Township accountant	Transfers money to applicant's account

Table 1. AS-IS business process roles of childbirth benefit service by the author

Business process inputs and outputs:

Inputs	Application including information: applicants first name, family name, personal identification number, residence, phone number, bank account number
Outputs	Benefit money

Table 2. Business process inputs and outputs of childbirth benefit service by the author

Supportive information systems:

Population registry – to check how long the person has lived in the district

Accounting software – for accounting procedure

Eesti.ee – for registering the birth (only if parents are legally married)

Legal acts:

- Determination and payment procedures of additional social benefits
- Administrative Procedure Act
- General Part of the Social Code Act
- Personal Data Protection Act Population Register Act

Business process model AS-IS:

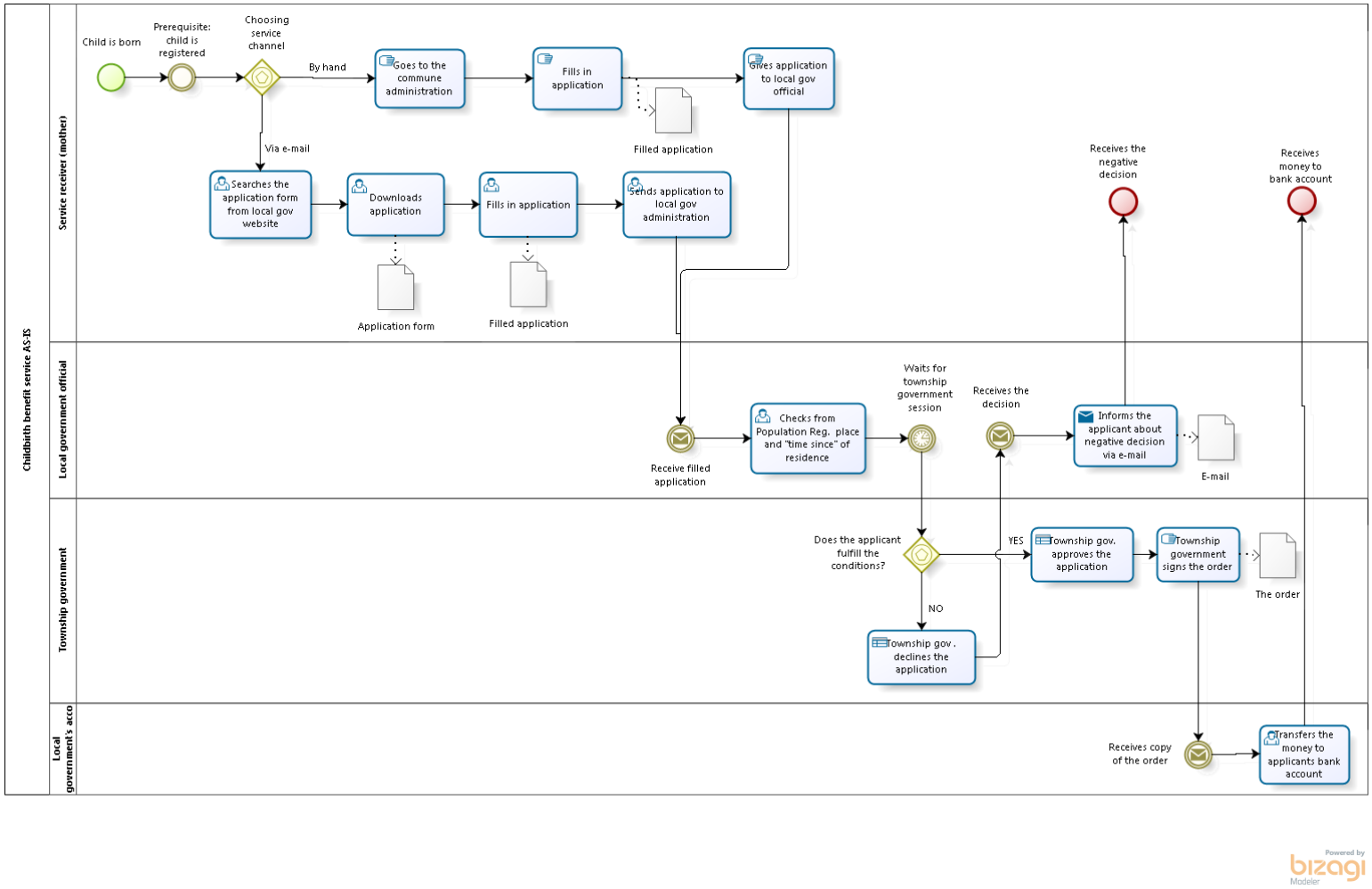

Figure 4. AS-IS Business process model of childbirth benefit service by the author

Stakeholder map:

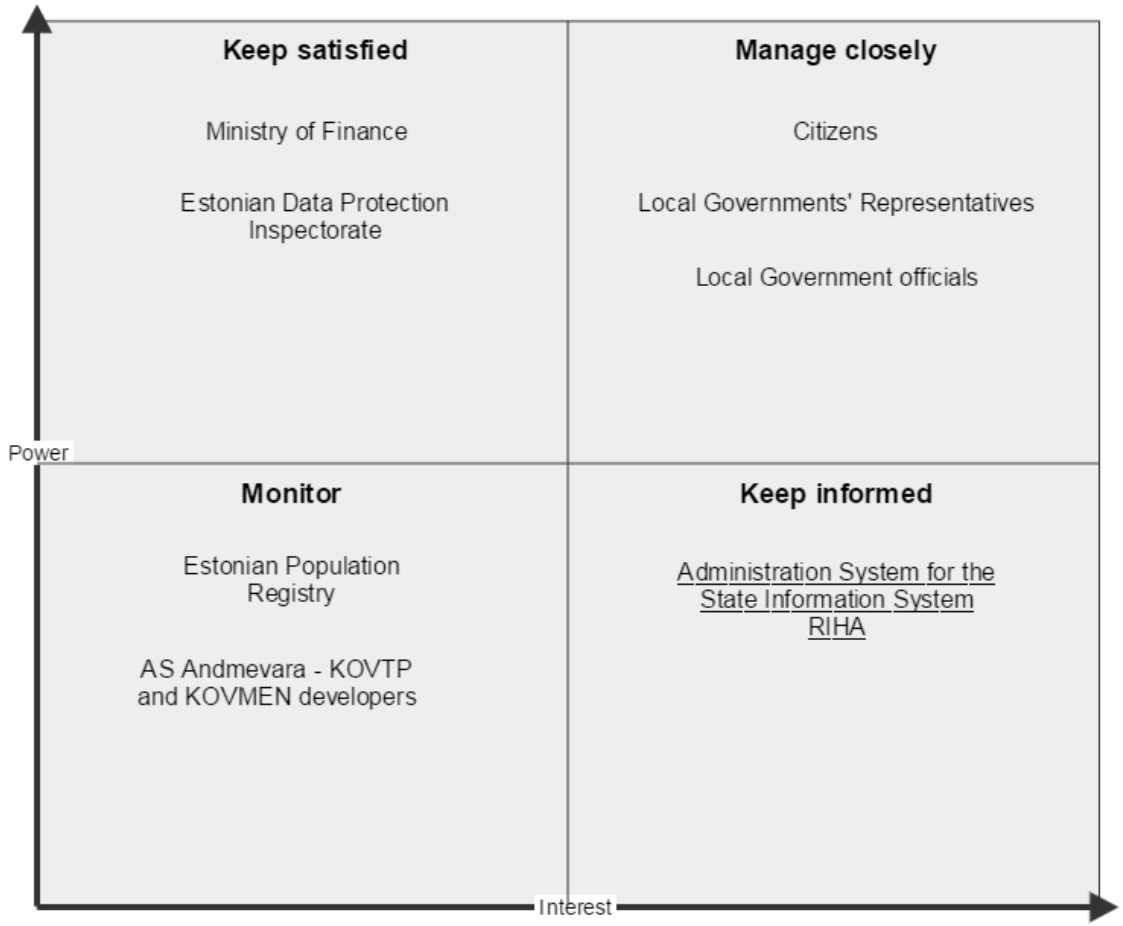

Figure 5. Stakeholder map of childbirth benefit service by the author

4.1.4 Shortcomings of current process

Existing process of childbirth benefit service is outdated, it requires several un-necessary steps which cost time and money to both citizen and official. For fresh parents it is quite a hassle to deal with bureaucracy, and for local government officials it is un-reasonable administrative cost to deal with numbers of applications that could be avoided.

Child birth benefit eligibility is based only on simple facts and those facts are checked from Estonian Population Registry, the only meaning of the application in that matter is to let local government know that I want the service. But everybody who meets the requirements is eligible for the benefit, and most people apply for it anyway, then why we need to bother 99% of people who apply for it anyway, rather than by default assign the benefit to everybody who is eligible and bother those 1%, who may want to opt out, instead?

Usually the application forms of childbirth benefit ask from people their personal identification number, bank account number, place of residence, child's name, personal identification number and time of birth. Estonia has accepted Once Only principle (Study on e-Government…, 2014), which means that the government may not ask from the citizen the same data twice. On this application there is mostly data that the government knows already anyway. Only bank account number is questionable if it could be asked from another governmental institution (e.g. Social Security Office, Tax and Customs Board) or it should be asked from the person directly.

In general, the step of submitting an application in current service process does not create any extra value, rather it is time and money consuming to both, the citizen and the local government. As it appeared in empirical part of present research the "application" has only formal and traditional meaning and is not reasoned with collecting important data.

4.2 TO-BE

Currently Estonian overall approach of public services is the "application-first" approach - when citizen does not submit an application, then government does not provide the service. Goal of the re-engineering is flipping this approach around and create a service that is initiated by the local government rather than the citizen.

The childbirth benefit (as well as many other social services) is largely dependent on information in Estonian Population Registry, therefore in most solutions intense data interchange with Population Registry is needed.

In this part three different solutions are offered, which all are based on three principals:

- local government initiates the service process
- citizen is bothered as little as possible
- no application

4.2.1 Quick win

The first possible solution is the *quick win* which local governments can implement more easily and fast, and gain much value with little changes. Usually in IT-projects *quick wins* are doable with no or minimal IT involved, that is why they are called "quick". Any IT-project is never done because of IT itself, meaning that the goal is offering best solutions for the business or organisation and design best services. IT is just a tool that in many cases helps and supports the business/organisation, but it is absolutely welcoming

(unfortunately too rare cases) when an IT-project ends up with no IT interruption, but rather change of mind-set, behaviour or service process.

According to this, *quick win* solution does not involve much IT interruption and is inspired by one local government, Kuusalu vald, who has already implemented a proactive service (explained in chapter 3.4.3) without large IT development involved.

Since childbirth benefit is not only service that parents of a newborn baby have to or can use, it should be looked at with wider scope. For example there is another childbirth benefit provided by the state, there is also parental benefit that should be applied for and all parents must register their child in Population Registry etc. When in case of state benefits it is possible to apply them with one joint e-service, then child registration service can be done online only if parents are legally married, otherwise they have to go physically to vital statistics office. Also, applying for benefits is optional, but birth registration (via eesti.ee or at vital statistics official) is compulsory.

For childbirth benefit, currently local government officials, after they have received an application, check three things:

1) If the birth is registered (birth registration service where parents will register a name for the child)
2) If the person is registered to local government for x period of time
3) If the person is mother/father or legal guardian of the child

All those three things can be checked manually from Estonian Population registry by local government officials. Therefore we do not have to ask this again from the citizen. The only question is where to get valid bank account number? Since all parents of newborn babies have to register child's birth, a quick win would be informing parents about their eligibility for childbirth benefit and asking bank account number during child registration service by vital statistics officials. It would basically be combining two services. Considering the fact that parents must register their child's birth anyway, it would be possible to take advantage of the compulsory contact point with the parent and, inter alia, ask for valid bank account number.
When for example in 2015 (latest statistics available according to Statistics Estonia) there were almost 14 000 live births, from which 5841 were children of legally married parents and 8050 were extramarital births (parents were not married), then it means that more

than half (approx. 60%) of applications were submitted physically to vital statistics official. Which in turn means that local governments can reduce the number of applications submitted by 60% with no IT development needed when asking vital statistics official to ask parent's bank account number during child registration service. And the parent does not have to visit another department, and submit no extra application. In cities where there are County Government currently childbirth registration is provided by County Government by vital statistics official, but in places where there is no County Government in the area vital statistics officials are located in local government offices. In 2018 all County Governments are being closed because of administrative reform and vital statistics officials will most probably move to local governments. Therefore since 2018 there is no reason to ask two different applications by two different departments and officials (in some cases the departments are located in different places not in the same house).

The next step would be creating the order, signing it in township government session and forwarding it to accountant who transfers the money (Figure 5. TO-BE business process model "Quick win" by the author).

The quick win solution is good for 60% of the parents because they don't have to separately apply for childbirth benefit, and they are informed about their right to receive the benefit when using birth registration service, while they can also give a valid bank account number. It is beneficial for local governments because they reduce administrative burden with eliminating one contact point with the parents. It is especially suitable for those local governments who are today not using any IT system to manage their services and proceedings and it could be implementable in single local government without depending on development of common system for many local governments.

Negative about the solution is, firstly, that 40% of people who are using an e-service in Eesti.ee to register their child's birth still have to apply for childbirth benefit separately. Secondly, it is not very sustainable and should rather be considered are temporary quick solution, yet this is what *quick win* solutions are for.

Business process model „Quick win“:

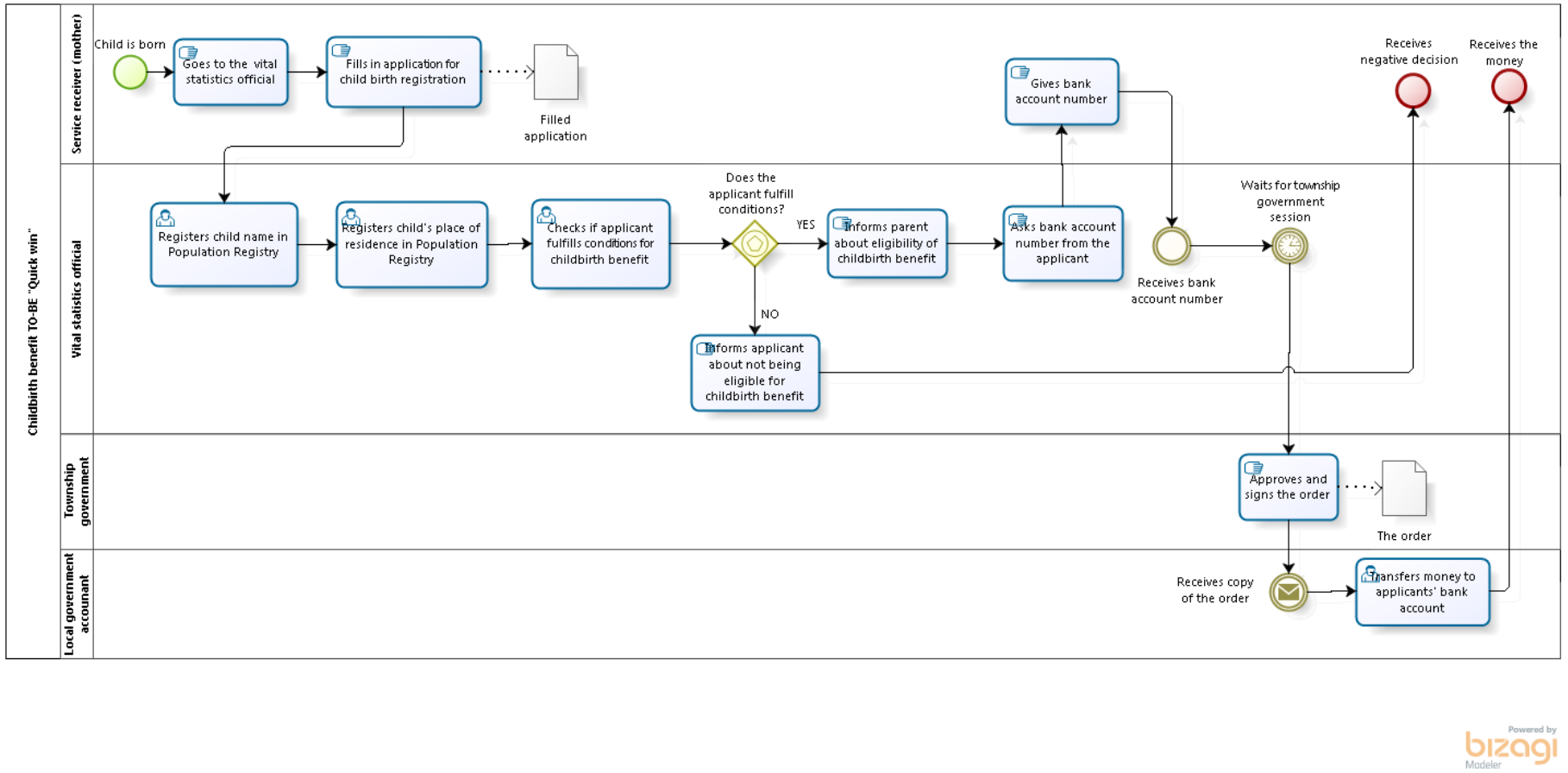

Figure 6. TO-BE business process model "Quick win" by the author

4.2.2 Software for proactive services

Much larger project would be developing a software for proactive services, which local governments can take into use. In case of a positive flow of the process, it would be a service that checks in fixed time intervals from Population Registry if there are new born babies registered to certain local government, automatically checks also eligibility conditions for the benefit (mother has been registered for x period of time in the local government) also from Population Registry, then checks availability of bank account number from Social Security Information System (RIHA, (20.04.2017)) (Figure 7. Dataflow of software for proactive services by the author). Then, sends a notification to the mother of the child about the eligibility of the benefit and service progress, and finally generates order to township government and the accountant can transfer the money to benefit receiver (Figure 8. Archimate business diagram of proactive childbirth benefit service).

Even though it would be universal system for all local governments, each local government can set their own service conditions via a user interface (e.g. for how long has to be registered in the local government area, etc.)

From the positive side, by this solution childbirth benefit service would be more automated also from the service providers' side. It takes full advantage of technological opportunities to automatically share data between governmental institutions. It would be more suitable for bigger local governments where there are greater number of children born every year. In that case it would significantly reduce administrative burden of local government's officials and it would be 100% proactive from the citizens' point of view. In addition, it would be easily scalable and by the vision include several proactive services and automated proceedings.

From the negative side, it requires larger resources. It is not reasonable to develop it in one local government, but as a universal system for all local governments that are interested in using it. Also there are several exceptional cases and possible errors that have to be thought through (for example if there is no bank account number in Social Security Information System, or data in Population Registry is not correct, etc.).

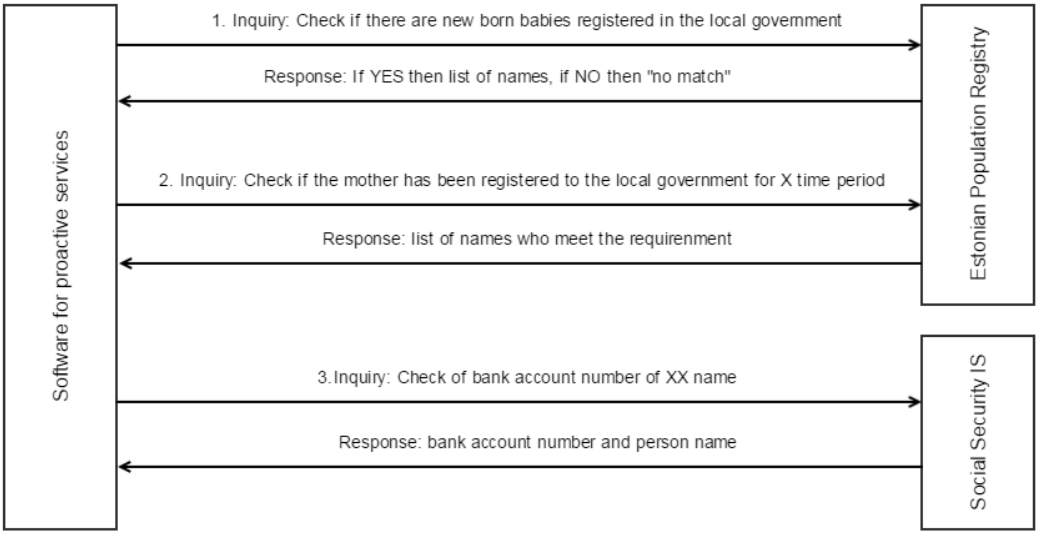

Figure 7. Dataflow of software for proactive services by the author

Archimate business diagram of proactive childbirth benefit service:

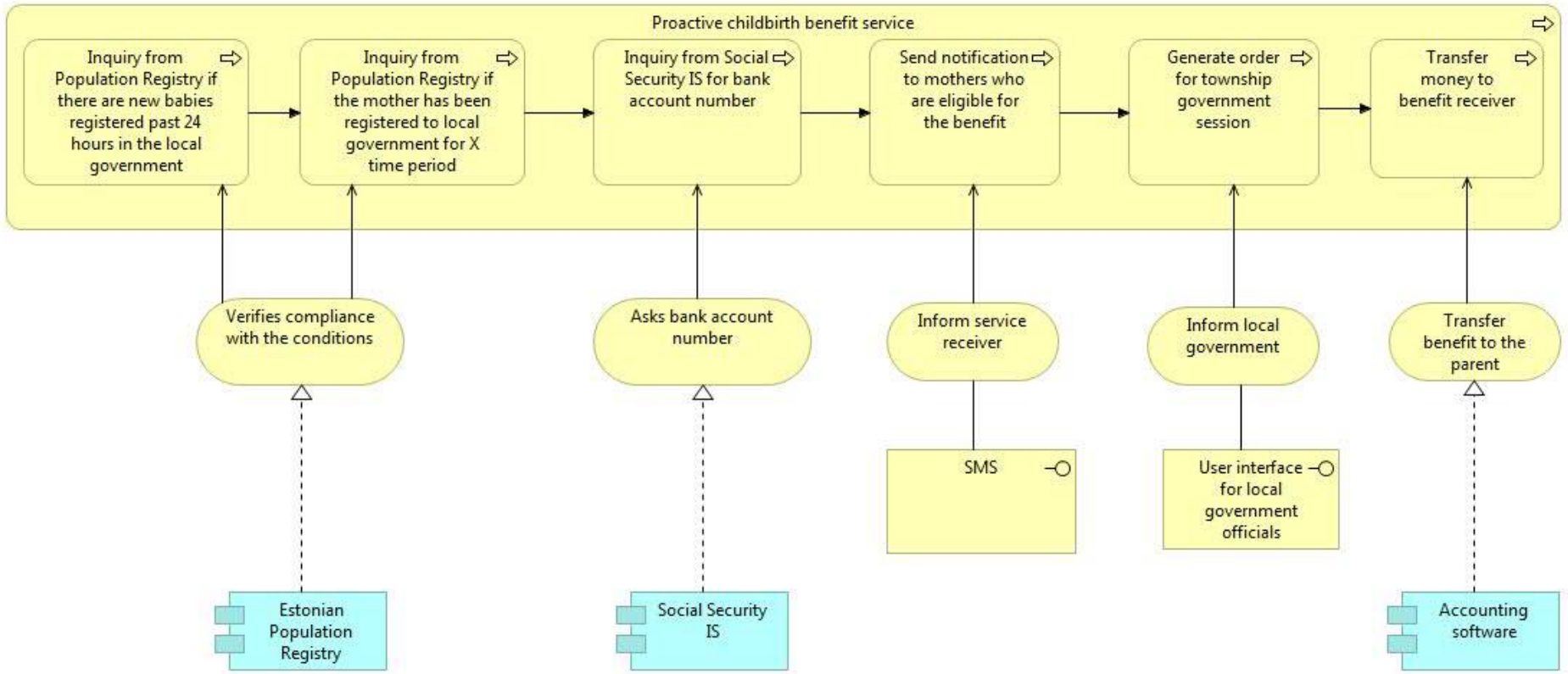

Figure 8. Archimate business diagram of proactive childbirth benefit service

4.2.3 Extension of KOVMEN

Since, like it occurred also from stakeholder interviews, there is still a need to store proceeding information whether the proceeding is automated or not. KOVMEN is already existing tool for local governments to handle their proceedings. If KOVMEN development team would change the perspective of future services or create micro-service for proactive services, then it would be quite logical place for the piece of software for proactive services.

Yet again, the piece of software would act similarly as in previous solution. There is a need to check in fixed time interval from Population Registry if there are any new babies registered in local government, then if the mother has lived x period of time in local government, availability of bank account number and send out notifications to the mother about service progress and results.

An alternative solution for getting valid bank account number from the benefit receiver would be using SMS messages. When the local government notifies the service receiver about eligibility of childbirth benefit, then the parent can answer directly to that SMS the bank account number they would like to receive the benefit to. The only thing that needs exploring is how secure that solution would be.

Positive side of this solution is possibility to re-use existing software parts of KOVMEN and the fact that KOVMEN needs constant development anyway. Therefore, it might be reasonable to use the potential of KOVMEN, rather than develop completely standalone software.

5 Summary

The aim of the thesis was to research whether proactive services are implementable in Estonian local governments.

Firstly, Service Design was chosen as theoretical background for the research, because Service Design suits especially well for designing complex service systems and public sector services are usually complex with several institutions and stakeholders involved. Main objectives of Service Design, and Design Thinking, methods are to think outside of the box, create services that create real value and actually meet users' needs. Therefore, it gives fruitful foundation for present research of creating services that disrupt current way of thinking.

Secondly, the concept of "proactive services" in public sector was studied. It appeared that there is no academic concept nor definition for proactive services. And proactive services in public sector are not widely academically researched area, it rather is something that countries with more developed e-governance are experimenting with. The study also showed that proactiveness can be seen from different angles. Therefore, the author created two concepts of proactiveness in public sector: wider view and narrow view.

According to wider view the government creates all possible opportunities for citizens to use e-services (including infrastructure, various service channels and notifications when, where and how one can use necessary e-service). The main goal is to take services as close to citizens as possible. Yet, still expecting citizens to initiate service process with an application.

Narrow view takes proactiveness even further and disrupts current understanding of public service delivery. According to narrow view, the government does not wait for a citizen to submit an application in order to start the service process, but instead the government initiates the service process and starts the proceeding itself. The main goal of proactive services, according to narrow view, is to bother the citizen as little as possible and ideally just send notifications about eligibility of a service and service progress.

Current thesis focused on narrow view of proactive services in Estonian local governments, since it is more disruptive and creates bigger value in the longer perspective.

Thirdly, for answering the research question, an empirical study was carried out. For this, research topic was divided into three perspectives: legal, technical/design and social. The objective of empirical study was to find out:

- how supportive or hindering is Estonian legislation towards proactive social services in Estonian local governments,
- what issues may potentially occur from technical and design perspective when designing proactive services for Estonian local governments,
- and how receptive are users, both service providers and service receivers, to proactive social services.

Empirical study showed that Estonian legislation is supportive towards disruptive solutions, including proactive social services in the public sector. According to various relevant laws (e.g. General Part of Social Code Act, Administrative Procedure Act etc.) it is possible for a local government to initiate service processes, if the local government has technological opportunities to access the data necessary to provide the service. It is also possible to start proceeding without waiting for an application, since legally the application has only formal meaning and is not obligatory. And finally, local governments are not only allowed but even bound to send notifications to service receivers via SMS, e-mail etc. about eligibility to the service and service progress. Of course, there has to remain possibility for the service receiver to interrupt proceeding, change information or opt out.

From technical/design perspective there are no insurmountable obstacles to implement proactive services in public sector. In regards of infrastructure, Estonia has a good foundation. Proactive services require having national registries in place with qualitative data and extensive data sharing between those registries. Estonia has national registries full of valuable data and most registries are already sharing data between one another. The only more problematic issue is the quality of the data. In some registries the data

might not always be with best quality and that may cause some troubles when designing and implementing proactive services for local governments.

From social point of view, it appeared that Estonian local governments are more open to implement proactive services than expected. There are some hesitations mainly due to lack of knowledge - local government representatives are not aware of the technical possibilities they could have. It was commonly agreed that after Administrative Reform in Estonia, raising accessibility of services becomes even more important, and majority of them claimed to be open to implement proactive services. Yet, it was clear that there is a need for bigger engagement of local governments to service design process, they want to be involved and their interests and needs to be taken heard. What regards citizens, they would welcome proactive services in their local governments. It would ease their hassle to receive services, and great majority of them have no hesitations about the fact that government knows and uses information about them without asking.

Fourth, for illustrating and making the empirical study more practicable an example case was carried out. As a case study, one social service provided by most Estonian local governments – childbirth benefit – was re-designed into a proactive service. The objective of the case study was to see what kind of obstacles may occur when designing a proactive service for Estonian local governments and to offer real solutions how a social service, like childbirth benefit, can be proactive. Firstly, current situation and business process was mapped, secondly, three different alternative solutions were created: a quick win solution of proactiveness without any IT development, a software for proactive services and an proactive services extension to KOVMEN.

In conclusion, “proactive governance” and “proactive services” are not a technical issue. It is not a matter of IT, but rather a shift in mind-set. Innovation is just changing perspective, it is the same with proactiveness. The hardest is to change all stakeholders’ current understanding of how public services should be delivered. Overall, proactive services are realistic in Estonian local governments. Estonia has good foundation in regards of infrastructure, legislation and political will. If service providers, financial contributors and designers think wider, change perspectives and involve users in service design process then innovation in public service delivery is easy to follow.

Current Master thesis' main contributions are an overview of conditions and potential obstacles when designing proactive services for Estonian local governments, an example case of a service designed to be proactive (for local government representatives, designers etc.), and all together a pre-analysis paper for local government representatives, service designers, IT analysts and project managers to start developing a system for proactive childbirth benefit service.

5.1 Recommendations and further studies

As current thesis represented a discovering and defining phase and briefly, for illustration, the development phase of Service Design cycle, next steps would be involving stakeholders to generate more ideas and possible solutions, then prototyping and testing. Usually after the first testing going back to more exploration and new brainstorming is needed. Current research gives a strong foundation to carry on the project, yet additionally an observation might be needed for truly understanding how local governments are delivering their services. It happens a lot that users are saying one thing, but acting differently, therefore observing, prototyping and testing as follow up actions would take the research to next level and help to find out the best solution to create and deliver. In that case, further actions would give answer not *if* but *how* to design proactive services for Estonian local governments.

One issue that emerged in several phases of the research was the question who should be initiating and leading the development of proactive services (and e-services in general) for Estonian local governments. Should each local government be responsible of their own services or should it be somehow coordinated at state level? That question definitely needs further research.

Another thing that resulted from current research (as well as previous studies in the field) was the problem that service providers in Estonia are not using the potential of technological infrastructure they could, mainly because lack of knowledge and skills. Many service providers, including local governments, are not aware of the possibilities they have. It would need a detached research of how to tackle that problem.

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Appendix 1 – List of sample questions from interview with AS Andmevara

1. What was the objective of KOVMEN and KOVTP? How was it supposed to raise the service quality of local governments? What was the problem you tackled?
2. What other obstacles appeared when developing KOVMEN and KOVTP? How was local governments' motivation to raise the quality of their services?
3. What are next plans for KOVTP and KOVMEN? Are they being developed further?
4. Are you mainly communicating with Ministry of Finance? How much are you involving local governments into development process?
5. In your opinion, what are future trends of state and local governments' services?
6. Do you think in the future proactive services could be potentially part of KOVMEN?
7. What obstacles might occur when implementing proactive services?
8. In your opinion, are Estonian citizens ready for proactive services?
9. Don't you think it would frighten people if they see that state knows so much data about them?
10. In general proactive services require more cooperation between state institutions and sharing of data between registries, do you think this would be one obstacle when developing proactive services?

Appendix 2 – List of selected local governments

Name	Geographical location	Estimated number of inhabitants after Administrative Reform
Hiiu Vallavalitsus	Island (North-West)	9550
Lääne-Nigula Vallavalitsus	North-West	7271
Tori Vallavalitsus	South-West	11716
Saarde Vallavalitsus	South-West	9855
Viljandi Vallavalitsus	South	14046
Rõuge Vallavalitsus	South-East	5819
Põlva Vallavalitsus	South-East	14405
Avinurme Vallavalitsus	North-East	9889
Kuusalu Vallavalitsus	North	9328
Harku Vallavalitsus	North	13966
Rapla Vallavalitsus	Centre	12018

Appendix 3 – List of sample questions to local government representatives

1. Kui rahul olete oma valla otseste teenuste kättesaadavuse ja kvaliteediga? (olen rahul, pigem rahul, pigem ei ole rahul, ei ole rahul)
2. Kas te arvate, et nimetatud teenused vajaksid teie omavalitsuses parendamist/kaasajastamist?
3. Kas teie vallas on võimalik teenuseid saada e-kanalite kaudu (näiteks kodulehel e-taotlusvorm, e-mail vms.)?
4. Kui vajalikuks peate teie omavalitsuses teenuste osutamist e-kanalite kaudu?
5. Kas ning mis osas kasvab peale haldusreformi vajadus tõsta teenuste kättesaadavust?
6. Kas te kasutate teenuste haldamiseks mõnda infosüsteemi? Näiteks mõni enda arendatud infosüsteem või KOVTP, KOVMEN'i?
7. Kuidas suhtute tasulisse IT süsteemi? Kas te oleksite valmis oma valla eelarvest maksma regulaarset tasu infosüsteemi kasutamise eest? (Nagu KOVTP kasutamise eest tuleb maksta iga kuu teatud summa)
8. Kelle pädevuses teie arvates peaks olema kohalike omavalitsuste teenuste arendus? Iga linn/vald ise, maakondlik omavalitsuste liit, üleriigiline omavalitsuste liit, ministeerium vms?
9. Kas te võtaksite oma vallas kasutusele proaktiivsed teenused? Palun põhjendage.
10. Kas teie arvates on takistusi või ohte seoses proaktiivsete teenuste kasutusele võtmisega? Millised?

Appendix 4 – List of sample interview questions to service receivers (citizens)

1. Kas sa taotlesid oma kohalikult omavalitsuselt sünnitoetust?
2. Kuidas toimus taotlemise protsess? Mida selleks tegema pidid? (vabas vormis)
3. Kui vana oli su laps, kui taotlesid sünnitoetust?
4. Kui kaugel sinu kodust asub kohaliku omavalitsuse asutus, kuhu peab sünnitoetuse taotluse esitama?
5. Kuidas ja kust leidsid infot sünnitoetuse taotlemise tingimuste kohta?
6. Mis sa arvad sellest, kui peale lapse registreerimist saadaks kohalik omavalitsus sulle teate, et sulle on määratud sünnitoetus X summas ja raha kantakse sinu kontole automaatselt?
7. Mis kanalit eelistaksid teate saamiseks kohalikult omavalitsuselt? (E-mail, sõnum, sotsiaalmeedia vms.)
8. Kuidas suhtud sellesse, et riik/KOV teab su kohta andmeid ilma küsimata?