Alternative Futures for Digital Governance

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ABSTRACT

Most academic literature on digital governance focuses on longer or short-term historical developments. This research will explore potential future developments in Estonia by using the scenario planning approach. As the future is uncertain, then development of wide range of scenarios carries greater relevance than relying on one vision or forecast. Estonia is particularly crucial case as its developments in digital governance have received considerable attention in scholarly and policy circles around the world. The paper starts by reviewing academic literature on both public sector governance as well on digital governance in order to reveal potential key drivers for the scenario planning exercise. Expert-based workshops consisting scholars and experts in the areas of public sector governance as well as computer science developed five alternative scenarios of digital governance in the spring of 2018. The key drivers of scenarios are the nature of budget constraint, the degree of centralization of decision-making and emphasis on either on calculative and analytical or the expedited decision-making processes. The evaluation of current executive branch public sector reform agenda as well as the draft bill of special parliamentary committee for state reform suggest that the current approach to digital governance matches best with scenario "Ad Hoc Governance" and partially with scenarios of "Night-watchman State" and "Entrepreneurial State". However, there is almost no overlap with scenarios "Caretaker State" and "Networked Governance". This reveals that the trend is towards centralization of digital governance in Estonia while academic literature and evolution of digital governance in Estonia would suggest the primacy of more decentralized networked governance.

CCS CONCEPTS

• Computing in other domains • Computing in government • E-government

KEYWORDS

Digital governance, Scenario planning, Public sector governance, Estonia

1 Introduction

Digital governance has become an encompassing paradigm in public administration literature as well as in governance reforms in various countries. Digitalization is particularly important because its ability to tackle fragmentation in public sector governance caused by so-called silos as well as enhance cooperation between public and private sectors. This paper will explore digital governance and its potential future developments in Estonia, a post-Soviet country which has radically reformed governance and embraced digitalization in public sector since regaining independence in 1991. Indeed, the Estonian digital government has received considerable attention in global policy and research circles. It is worth exploring if and how the evolution of Estonian digital governance and public sector reforms can signal the future for other governments in the world.

The research project developed governance scenarios for Estonia in order to increase awareness of potential future developments and highlight main critical junctures for decision-makers in the Estonian Parliament as well as in the executive branch. In order to do so, the Foresight Centre at the Estonian Parliament created in cooperation with international and Estonian experts alternative scenarios about the future of governance in Estonia by 2030. The scenarios rely on interaction of both institutional

and technological factors affecting potential developments in the future [1].

The aim is to answer to the question: "How to create efficient, equitable and agile governance model in Estonia by combining interaction of institutional and technological factors?" In order to do so, the project identified key drivers for future developments by reviewing literature, empirical analysis on Estonia as well as focus groups with experts. It is obvious from insights by experts and academic literature that governments have to become more productive and efficient, engage more in cooperation with various actors and utilize data in decision-making for evidence-based policy making. They have to increase transparency and accountability as well as respond to the changing relations between governments and citizens by increasing citizens' involvement through co-creation of public services or other means. These implications suggest on abstract level some directions for transformation of public sector governance, which involve digitalization. Nevertheless, many of these ideas and concepts have been around for decades but for various reasons governments have been slow and reluctant to change. Hence, it is crucial to discuss not only "what must change" but how transformation takes place in public sector. Furthermore, digitalization and co-developments are not often shaped by policy-makers. Rather these trends shape policy-making and governance. In the scenario building exercise, it is crucial to highlight both outside factors shaping public sector governance as well as how governments can adopt and transform in an environment characterized by turbulence, uncertainty, novelty and ambiguity [2].

Even though the Estonian governance scenarios tackled wide range of issues, the focus in this paper will be on digitalization. The term "digital governance" is purposefully used throughout the text. The concept includes also digital government but it is wider by encompassing stakeholder involvement and democratic processes in addition to online service delivery. The attention given to digital governance is not surprising. Digitalization has a huge impact on cultural, economic, political and social aspects of our life. Hence, it is natural to see enormous potential of digitalization in public sector governance. Digitalization has a promising appeal for making governance more efficient, equitable, agile and networked.

The paper is structured in the following way. It will start by offering overview of literature. This is followed by discussion of research methods. Then scenario planning process and five governance scenarios will be discussed. This will be followed by highlighting implications for digital governance stemming from scenarios and developments in Estonia.

2 Literature Review

While discussing digital governance a connection between internet as a network technology and transformation of governance into network-based approach is often made. It is assumed that technology has power to change governance and make it more similar to the structure of internet. Often such prescriptions are offered from a perspective of technology optimists, if not technology determinists. They tend to believe that technology itself is sufficient for implementing changes. However, technology is necessary but not sufficient ingredient for digitalization of public sector governance. The diffusion of digital technologies in governance depends on institutions and their change. Institutions are both formal and informal rules of the game [3] [4]. The public sector governance is interdependent on formal institutions such as laws and regulations as well as on informal institutions such as habits, norms, customs and values.

Various studies have found that institutions play a crucial role in digitalization of governance [5] [6] [7]. Given epistemological nature of technology and different institutional logics, it is obvious that digitalization of governance follows different paths in different political, economic, social and cultural context [8] [5]. The importance of institutions is particularly important for inter-agency cooperation or ability of government to work across so-called silos, and cooperation between private and public sector [6] [9]. Furthermore, institutions should not be seen only as constraints but also resources to be utilized by policy entrepreneurs [10]. Obviously, all these contributions from the literature on institutions cannot be elaborated in this review. However, institutional complexity, policy heterogeneity, path-dependence and unintended consequences suggest that choices in digital governance reforms are not binary.

2.1 Governance coordination mechanisms

Institutions as drivers of public sector governance form the foundation for three basic types of coordination mechanisms, which rely on different core processes for achieving coordination in order to overcome collective action dilemmas. These basic types are hierarchy, market and network [11] [16]. For hierarchy, the central pattern of interaction is authority. Coordination is achieved through administrative orders, rules and planning on the one hand, and dominance as the basis of the control system on the other. The market as a coordination mechanism relies on

exchanges between actors, with bargaining and competition as basic processes. The activities of individual actors are coordinated by the price mechanism, incentives and self-interest. Network-type coordination becomes manifest mostly in the form of cooperation between actors who acknowledge their reciprocal interdependence and responsibilities. Networks typically build on common interests, values and trust. The types of the coordination mechanism matches with public sector governance models which are traditional, New Public Management (NPM), New Public Governance (NPG) or networked based governance [11] [13] [14] [15]. Hierarchy corresponds to the traditional public administration, market corresponds to NPM, and network-type corresponds to the NPG. Thus the structure of the institutions, the coordination mechanism and the degree of centralization or decentralization are all indeed connected and driving components of public sector governance.

Obviously, these three models and coordination mechanism are ideal types. Actual governance is always a hybrid consisting different models and reality in the ground is always messier. In addition, many policy-makers have not received the memo that NPM is history and network based governance is a new trend and their public sector reform efforts are still inspired NPM. There is no universal mode how to reform public sector and which approach offers the best solution. Furthermore, there is a considerable debate what these models imply in reality and different interpretations of these models. In addition, for some scholars NPG is simply one form of NPM while some scholars have declared NPM to be dead [14]. However, certain developments have taken place in the last decades as traditional coordination by hierarchy has been supplemented by NPM solutions relying on market and competition as well as by post-NPM initiatives attempting to (re-)integrate fragmented administrative apparatuses [15] [14].

One key difference between NPM and the new coordination mechanism defined as NPG is that NPG is concerned with the 'relational organization', than does the output and intra-organizational focus of the NPM. NPG's focus is very much upon inter-organizational relationships and the governance of processes [20]. However, difficulties involved in defining and implementing networked governance are discussed by Lægreid and Rykkja [15].The study demonstrates that there is not one precise way of performing the coordination mechanisms in public governance. It is likely that there would be cases where an equilibrium between horizontal and vertical coordination; an equilibrium between centralization and decentralization is needed rather than choosing solely one or the other. Similarly, Ostrom has

shown that the existence of alternative governance mechanism to simplistic market versus government dichotomy [16].

2.2 Digital governance

Information and communication technology (ICT) developments and its implementation have been studied to great extent as an essential driver of the public sector governance [12] [17] [18]. Often main driver of e-governance in this literature is efficiency. For instance, Gil-Garcia and Pardo present technology as a source of this efficiency [18]. Technology provides two main opportunities for government: (1) increased operational efficiency by reducing costs and increasing productivity, and (2) better quality of services provided by government agencies. However, already in early 2000s researches started to distinguish between between e-government and e-governance, where the latter reflects the more democratic, representative, and participatory aspects of political life in cyberspace which is not necessarily just about efficiency but also about equity [19] [20] [21] [22] .

The digital-era governance practices go beyond efficiency and have three main characteristics. First, reintegration since the key opportunities for exploiting digital-era technology opportunities lie in putting back together many of the elements that NPM separated out into discrete corporate hierarchies. Second, needs-based-holism, in contrast to the narrow, joined-up-governance changes included in the reintegration theme. Holistic reforms seek to simplify and change the entire relationship between agencies and their clients. Third, realization of productivity gains from IT and related organizational changes, which require a far more fundamental take-up of the opportunities opened up by a transition to digital operations. Thus, there is consistency between the drivers of digitalization and networked public sector governance model presented in previous part.

In this context, a direct trade-off between efficiency and equity does not need to exist in networked digital governance. It can be observed more clearly through the models and stages of e-government and e-governance. Governance need not necessarily be conducted exclusively by governments. Private firms, associations of firms, nongovernmental organizations (NGOs), and associations of NGOs all engage in it, often in association with governmental bodies, to create governance; sometimes without governmental authority [21] [22]. This is an important departure from the e-government literature in the early years where ad hoc conceptualizations led to an initial understanding of e-government in quite narrow, business-oriented, and instrumentalist terms [23]. E-government

meant essentially online delivery of government services reflecting the "services first, democracy later" attitude typically found in e-government initiatives [19].

While this "old school" e-governance literature pointed out the tension between efficiency and equity in different digital governance models, the emphasis on co-creation by the emerging literature on Government as a Platform (GaaP) may reduce these tensions. Obviously, digital platforms as such are not new but the recent literature has emphasized the importance of the rise of platforms in economic, social, cultural and political affairs and interactions. This set of literature refers particularly to systemically important platforms such as Facebook, Amazon, Uber and others with dominant market positions [24]. However, platforms are also crucial in governance as e-government scholars have increasingly started to discuss e-government as a platform and emphasized the importance platform-based governance [25]. The literature is linking various research streams on coproduction and/or co-creation, open government data (OGD) and the rise of platforms in various economic, social and political undertakings [26].

Already in 1972 Ostrom had a simple observation that citizens' cooperation with police in Los Angeles created more value for law enforcement services [27]. The value of a public service was influenced by the interaction between users and providers, not only by the provider – the police. Ostrom's contribution corresponds well with networked digital governance. It has gained new relevance as scholars such as Linders demonstrates how open government data enables coproduction of new public services [27]. Government is able by making data and digital information available to citizens and other actors through digital platforms. As a result of bottom-up processes new services can be created. Co-creation also allows for higher levels of customization, citizen input, and citizen empowerment. However, it is also clear that in order for OGD driven public service co-creation to take place, it must be enabled. Scholars have shown how Ostrom's analytical frameworks can be applied to governance of decentralized open source software development. The key insight is that flat and modular governance of open source by utilizing user driven innovation can offer insights for public sector governance. Furthermore, co-creation of services is highly participatory, then it corresponds to the concept of e-participation used in the literature. E-participation can be characterized as the use of ICT by governments to support information provisioning to citizens and to engage and facilitate citizens to influence the government in their policy-formation and decision-making processes [31]. The participation does not

need to involve only contributions to law-making but can take a variety of forms such as user-driven government innovation and co-creation of services. More, recently Paulin has demonstrated how cities by relying on smart technologies can fuel a more participatory and inclusive urban governance [32]. However, Kitsing has shown how networked technologies do not necessarily to networked governance in the case of Estonia [33].

In summary, networked governance has become more dominant paradigm in public governance literature where scholars have increasingly highlighted shortcomings of other approaches such as NPM and traditional hierarchical model. The literature of digital governance emphasizes increasingly co-creation and use of open data by utilizing government as a platform. These developments are in sync with each other and suggest a development towards networked digital governance.

3   Research Methods

Scenario planning is a tool for taking a long-term view in order to develop alternative versions of future instead of one vision or forecast. The future of digital governance is uncertain. Instead of emphasizing one prediction or forecast on the basis of previous developments and current trends, it would be wise to think about it in terms of alternative scenarios. In order to generate alternative governance scenarios 10 experts from the leading Estonian universities and think-tanks participate in scenario planning workshops in March-May 2018. The names and affiliations of experts are given in the acknowledgement. Literature review of public governance and digital governance as well as analysis of Estonian government reforms and digitalization since the 1990s served as an input to scenario planning. The experts identified on the basis of these sources as well as on the basis of their expertise key drivers which might affect future developments in the first workshop in March 28, 2018. The key drivers – extent of budget constraint, centralization of governance and nature of decision-making processes- were used in different combinations to draft key characteristics of different scenarios in the expert workshops, which were further developed by author and shared by experts. Experts gave feedback to draft scenarios which were discussed in greater detail in the second workshop on May 11, 2018. Scenarios were published in Estonian in June 2018.

The governance scenarios developed in these workshops combine both external and internal factors, which may or may not contribute to the realization of specific scenarios. Fiscal pressures and tough budget constraints limit the range of possible scenarios. However, budget constraint

can be both endogenous and exogenous. It can be outcome of developments in the world economy, reduction in the inflow of structural funds of the European Union, consequences of Brexit and a number of other developments that Estonian policy-makers do not control and influence. At the same time, the budget constraint can be self-imposed and thus endogenous. Policy-makers with certain ideological leanings may become dominant in the policy sphere and hence impose strict limits on public spending and reduce the number of government officials. The bottom line is that scenarios emerge as a result of endogenous and exogenous as well as more and less objective and subjective factors. Furthermore, endogenous and exogenous drivers of change are constantly interacting. Hence, exogenous drivers will impact also endogenously set priorities. Universally best governance models do not exist. The real life developments will quite likely lead to a combination of various scenarios discussed below. However, the use of ideal types in the form of scenarios offers clarity and simplicity, which contribute to the understanding of interaction of key drivers and potential outcomes.

Five scenarios allow understanding the interplay of different approaches to public sector governance and potential routes to the realization of different scenarios. Scenarios are specifically meant for policy-makers in order to broaden their horizons and generate useable, concrete policy solutions for advancing digital governance as well public governance in general. Scenarios serve as risk assessment tool as they identify potential bottlenecks in the implementation of policy. Hence, one of the central question is which conditions facilitate certain breakthroughs in governance reforms. In other words, scenarios are not end in itself but a tool for citizens, politicians, officials, experts, activists and other stakeholders for advancing public governance. The real value of scenarios depends on their use. Will scenarios contribute for a clearer strategy formation in public governance and will they help to generate new ideas for better governance? The fundamental goal is to make governance more agile, equitable and efficient. This implies that scenarios are normative. They are also provocative. However, all scenarios consist costs and benefits. Whether costs exceeds benefits or vice versa in the context of a specific scenarios depends on a perspective.

Certain current trends may also indicate that realization of some scenarios are more probable in the future. Other scenarios are plausible but not probable. Nevertheless, it does not imply that the aim of exercise is to predict the future. First, predicting or forecasting future developments, especially in the long run, has severe limitations. Hence, it is important to consider not only small variations but fundamentally different developments, which are exogenous. We do not know whether scenario A or scenario B will realize in the future. However, we can comprehend to some degree what are implications of scenario A and that of scenario B. Scenario planning as a method is about developing alternative, equal scenarios. Most important is to be prepared for different developments.

In addition, the realization of specific scenario or combination of scenarios depends on exogenous factors. Pre-condition for realization of certain developments depend on priorities of policy makers and mobilization of resources for that purpose. Certainly, this is necessary but not sufficient condition. Unintended consequences stemming from uncertainty may undermine best plans. The road to hell is paved with good intentions. Nevertheless, there are certain benefits for pro-active approach to policy-making rather than reactive or fatalist state of mind. It is about mental models, which are prepared for emergence of new external environments. Having thought about different scenarios should contribute to policy space, which is more adoptive and adaptive to changes.

Two key documents were analyzed in the framework of scenarios - in addition to scenario planning exercise with experts and discussion of scenarios with policy-makers in parliamentary committees and in research project's steering committee. The first document is state reform strategy of executive branch adopted in Spring 2017. The second document is a draft bill of principles for state reform by the Estonian Parliament which was passed in February 2019. All political parties represented in the parliament were involved in drafting the bill in 2018 at the Special Committee for the State Reform at the Estonian Parliament.

Even though the method was primarily expert-based scenario planning, it is important to emphasize that throughout different stages of research project and scenario planning processes policy-makers were involved in constant discussion of scenarios and key findings of the research stream. This part consisted of following focus groups from June 2017 to September 2018: Four 1.5 hour discussion with the members of State Reform Committee at the Estonian Parliament; one 1 hour discussion with members of Special Committee for Control of State Budget at the Estonian Parliament; four research project's steering committee discussions; two discussions with policy-makers from executive and legislative branch and other stakeholders in the framework of special conference on the

research project; other smaller scale discussion with other policy-makers in legislative and executive branch.

4 Five Scenarios for Digital Governance in Estonia

This part will give a brief overview of five scenarios generated with scenario planning approach. This is followed by discussion of digital governance implications by relying on multimethod approach. The scenarios are following.

4.1 Ad hoc governance

This scenario combines strong budget constraint, centralized and fast decision-making processes. The budget constraint implies either need to cut public sector spending because of external or internal developments or dominant ideological position among decision-makers that public sector governance must be managed within limited financial resources. The scenario is characterized by top-down fast decision-making in order to overcome economic crisis and to exploit emerging new opportunities. Budget constraint implies also privatization of public services in some areas which implies that government does not have sufficient leverage to change situation in every area. Citizens may benefit from this scenario as long as government's priorities match their own priorities. However, they are left out of decision-making processes as it would imply significant slow-down. Citizens have also deal with uneven delivery of public services where some services advance rapidly while others do not get enough attention and deteriorate as a result of resource constraints. Dissatisfied number of citizens may grow as a result of suboptimal services and inappropriate government priorities. The scenario may become a self-fulfilling prophecy where dissatisfaction with limited involvement of citizens feeds into need to keep decision-making centralized as policy-makers are afraid of opening up so-called genie's bottle.

4.1.1 Governance. Since budget imposes significant constraints, then ministries and agencies will be consolidated and number of ministers reduced. These processes will simplify decision-making. The cost-cutting also implies that number proportion of public sector employees will be reduced in total workforce. However, as the government will continue supporting some areas on ad hoc basis, then public sector expenditure as a percentage of Gross Domestic Product (GDP) may increase. Furthermore, it can be assumed that the central government will increase public sector debt to GDP ratio. Government budgeting will be made more results driven.

The role of legislative branch in setting agenda in strategic priorities will be modest. The parliament will be an instrument of representative democracy rather than participatory democracy. The role of local governments will be reduced. The central government will try to reduce number of local governments by exploiting fiscal incentives. Fiscal autonomy of local governments will be reduced. Local governments will become basically agents of central government which is their main function – rather than representing interests of local population and getting them involved in decision-making processes. This governance framework implies that in principle it is easier to implement strategic projects in some areas as long as budget constraints allow it. For delivery of public services it implies uneven development where some areas are prioritized while others lack necessary resources. On the one hand, ad hoc governance values experimentation with new services and its delivery methods. However, focus is constantly shifting from one priority are to other which implies challenges in the implementation of new ideas.

4.1.2 Digitalization. Digitalization is valued in this scenario because it allows to cut costs and start new projects. It facilitates improvements in service delivery, collect data for policy-making as well as direct citizens to needed services and react to changing circumstances. Since budget imposes significant constraints and decision-making is centralized, then ad hoc governance scenario implies that most services are standardized and special circumstances are rarely considered. Standardization implies so-called forced digitalization where the use of digital services might be only option. On ad hoc basis some areas will receive special attention and these pet projects will be developed differently.

Government will prioritize the use of big data but as the approach is not systematic many institutional barriers do not allow to exploit the benefits. The use of open data does not get sufficient systemic attention which implies not improvement in comparison with other countries. The combination of data from different public and private sources is possible in some areas but not in some other areas. The government does not see the whole picture in its data policy by focusing in some areas but ignoring others. The government digital identity use in different services will increase but unevenly. Various private and public sector digital identities will emerge and many citizens will rely increasingly on private sector solutions.

4.2 Night-watchman state

This scenario combines strong budget constraint, centralized and analytical decision-making processes. The

underlying aim is to reduce the role of state in many areas and focus on the areas where state intervention and provision of services is absolutely necessary. The government will cut expenditure, reduce number of public sector employees and will privatize services. The scenario implies that systemic framework will be created for governance of public sector where limited role of government intervention in private sector and lives of individuals is the key priority. Citizens will have considerable freedom in directing their lives but their opportunities to get involved in public sector decision-making processes are limited to the elections. Access to public education and health will be limited. The scenario also implies that the government response to substantial changes in external environment such as environmental, geopolitical and economic will be limited because of narrow policy-making perspective and small public administration capacity. At the same time, the dominant fiscal prudence may allow to react properly to some external economic shocks such as global financial crisis.

4.2.1 Governance. Since severe budget constraints mean significant self-imposed fiscal constraints, then ministries and agencies will be substantially consolidated and number of public sector employees significantly cut. The government wants Estonia to have the lowest public sector expenditure as a percentage of GDP and lowest proportion of public sector employees of total workforce. The government will keep budget balanced and will furthermore reduce already low public sector debt-to-GDP ratio.

The role of prime minister will increase in this scenario. Responsibility in managing public sector will be clear and simplified which may imply greater trust. However, decision-making will be efficient in predictable circumstances but may face considerable delays and bottlenecks in unforeseen circumstances. The parliament does not carry substantial role in this scenario. Its budget will be cut and number of members reduced by one third. Furthermore, term limits will be imposed which will reduce professional politicians in parliament but may make decision-making more complicated in areas where political skills are required. The self-imposed budget constraint implies that the role of local governments and their fiscal autonomy will be reduced. Their number and employees will be decreased.

The government in principle will not engage in large public sector projects because risk-taking involved and management of such projects does not fit with the role of minimalist state. Public services are standardized and characterized by universal basic services with no allowance

for special requirements. Every citizen has its own public service account where they can see financial limits and options for service use. The government issues vouchers for education, social and health-care which can be used for both at private and public providers. This implies that service delivery can vary significantly across geographic regions and socio-economic groups resulting from differences in wealth and social capital.

4.2.2 Digitalization. On the one hand, digitalization is valued in this scenario because it allows to cut costs and reduce bureaucracy. On other hand, several barriers will be created for digitalization because of privacy and security concerns. The minimalist government is worried about data collection because it might enhance government intervention in individual lives and private sector.

As cost-cutting is key driver of digitalization, then it would imply high degree of standardization and universal basic solutions. The lack of customized solutions which consider specific needs may lead to dissatisfied users. Both open data and big data use is not advanced sufficiently. Barriers stem from institutional factors as government is concerned about misuse of data. Combination of different public and private sector databases is mired in complexity or impossible. The use of government issued digital identity is limited because of privacy and security concerns. Increasing number of citizens will rely on private solutions, including those provided by global digital platforms from the United States and China.

4.3 Entrepreneurial state

This scenario combines quick centralized decision-making strong with generous budget constraints. The flexibility with resources allows government to invest more in service delivery as well as large projects, often in the form of Public Private Partnerships (PPP). The government will behave as a large enterprise by developing and investing into some key priority areas. The government's mission is to enhance economic development and improve country's position in the international division of labor. The risks involve overinvestment of public funds in failed projects, which will become so-called white elephants. Radical external shocks may impose severe budget constraints which, in turn, may mean activation of "ad hoc governance" scenario instead of entrepreneurial state. This scenario is also sensitive to changes in government as well as quality and strategic agility of government top management.

4.3.1 Governance. Since flexible budget constraints imply more public sector investments and spending, then proportion of public sector employees in the total

workforce and public sector expenditure as a percentage of GDP will increase. The central government will borrow funds for its priority projects which implies increase in public debt to GDP ratio as well as annual budget deficits. The role of prime minister will increase and he will act as chief strategist in the government. Some ministries and agencies will be consolidated while new agencies might be created for developing priority areas such as infrastructure projects. Involvement of different stake-holders and interest groups in the decision-making processes will be reduced because the government values fast processes.

The role of parliament will be secondary to the executive branch as the logical implications of the scenario do not support long-term calculation approach with unlimited discussions. Some parliamentary commissions may be become more important sources of legitimacy than the general assembly. The top-down logic of the scenario also implies that the number of local governments and their fiscal autonomy will be reduced. Exception will be two largest cities Tallinn and Tartu with whom the central government is interested in cooperation involving large-scale projects. This also implies that scenario is very favorable for massive public investment projects such as tunnel between Helsinki and Tallinn, bridge between Muhu island and mainland and four-lane highway between two largest cities. The scenario also allows to increase spending on public service delivery, where priority areas such as education will received most of investment. As the development of services will be still uneven due to priorities, then differences may cause dissatisfaction among citizens.

4.3.2 Digitalization. Digitalization plays fundamental role in this scenario because it allows to collect data, offer better services and enhance anticipatory policy-making. As the government spending is generous and fast decision-making is appreciated, then digitalization can occur rapidly in many areas. However, government priorities imply that some areas receive more funding than others which will lead to uneven outcomes. Overinvestment and misallocation of investment may also lead to failures in large scale projects.

Big data and open data use is highly encouraged by breaking down so-called silos among agencies. Government designs policies for combination of different public and private databases. The government's mission is not only focus on domestic projects but to enhance digital data projects globally in order to understand trends and developments world-wide. This means active cooperation with international organizations, private and public sector actors. One of the key priorities is to develop further

Estonian government issued digital identity by offering solutions globally. Government prioritizes e-residency as a global digital platform as through this platform other Estonian public sector platforms can be diffused to other countries.

4.4 Care-taker state

This scenario combines generous budget constraint, centralized and analytical decision-making processes. Improved living standards and economic development means increased demand for high quality public services. The government aims to meet this demand by increasing social spending and employing more officials. The main mission of government is to improve well-being of its citizens. For these purposes government intervenes in many areas of life, protects people from evils and ills and regulates different economic and social activities. Citizens benefit from a good access to high quality services in education and health-care. At the same time, their ability to shape public governance is limited. Government intervention in private lives may create the feeling that citizens live in a police state. The focus on current issues to citizen's wellbeing may also imply that the government may lack capacity to deal with large-scale strategic challenges, particularly in the external environment.

4.4.1 Governance. Since flexible budget constraints imply more public sector investments and spending, then proportion of public sector employees in the total workforce and public sector expenditure as a percentage of GDP will increase. The central government will borrow funds for improving well-being of citizens. It implies increase in public debt to GDP ratio as well as annual budget deficits.

The governance will be centralized but analytical and focuses on increasing legitimacy. The number of regulations will increase as government tries to solve problems in every aspect. The assessment of impacts of various laws and regulations will increase which keeps government departments busy. Involvement of different stake-holders and interest groups in the decision-making processes will be increase at least formally because the government values legitimacy. The role of parliament will be important source of legitimacy – at least formally - as the logical implications of the scenario do long-term analytical approach with detailed parliamentary discussions. However, key decisions will be made by executive branch in reality.

The top-down logic of the scenario also implies that the number of local governments and their fiscal autonomy will be unchanged. However, their importance will be

emphasized in political rhetoric.This also implies that scenario is unfavorable for massive public investment projects because government is concerned about environmental impact and well-being of citizens affected by these projects. Analytical, calculative decision-making processes and increase in regulations will also reduce likelihood of such projects. The scenario also allows to increase spending on public service delivery, where focus is improving both quality and access to services. As the development of services will be even due to holistic approach, then satisfaction among citizens will grow.

4.4.2 Digitalization. Digitalization plays an important role in this scenario because it allows to collect data, offer better services, direct citizens towards better choices and enhance anticipatory policy-making. As the government spending is generous and analytical decision-making is appreciated, then digitalization will occur evenly in different areas. However, technological lock-in and path-dependence may lead to difficulties in adopting solutions in some areas. Big data use is encouraged by breaking down so-called silos among agencies. Government designs policies for combination of different public databases. However, government is reluctant to cooperate with private sector in this field because of risks and security concerns.

Government does not encourage open data projects for the same reason. Instead of offering public data to private sector government will design incentives and regulations for ensuring access to private sector data. The government's mission is to focus on domestic services and not to enhance digital data projects globally which will carry unknown risks. This implies that one of the key priorities is to develop further Estonian government issued digital identity for domestic users. E-residency as a global digital platform will be closed down because domestic online service delivery may suffer from new risks and overcrowding of platforms.

4.5 Networked governance

This scenario combines generous budget constraint, de-centralized and analytical decision-making processes. The government aims to get citizens involved in decision-making processes and public service delivery through co-creation. For these purposes decisions are made in bottom-up fashion, closest to citizens and without unnecessary bureaucracy. Citizens benefit from opportunities to get involved in policy-making as well as in service delivery if they will. Their ability to shape public governance is visible and actual. At same time, it offers more opportunities for active citizens than passive. Areas with stronger social capital may benefit more than areas with limited ability to

cooperate. Government spending may not be able to reduce the gap.

4.5.1 Governance. Since flexible budget constraints imply more public sector investments and spending, then proportion of public sector employees in the total workforce and public sector expenditure as a percentage of GDP will increase. The growth is unevenly distributed but comes primarily from local governments which will borrow funds. It implies increase in public debt to GDP ratio as well as annual budget deficits.

The governance will be de-centralized but analytical and focuses on increasing legitimacy and satisfaction among citizens. Involvement of different stake-holders and interest groups in the decision-making processes will be increase considerably. The governance is pluralistic and diverse. Local governments and parliament will limit powers of central government considerably. Some areas the power of "silos" is dominant. While other areas are characterized by loose networks which collaborate across different domains. The role of parliament will be important source of legitimacy and its role in strategic decision-making will be enhanced. As long as generous budget constraint prevails, it is possible to use more resources for improving quality of decision-making by hiring experts and encouraging wider public to participate.

The bottom-up logic of the scenario also implies that the number of local governments will not be reduced and their fiscal autonomy will grow. They will take over crucial functions of central governments and will become true local governments. This scenario implies that scenario is unfavorable for massive public investment projects because difficult to reach consensus and different stakeholders have ability to block these projects for various reasons. The scenario also allows to increase spending on public service delivery. However, bottom-up approach suggest different abilities to use these resources well. Some areas will be innovative while others will lag behind. As the development of services will be uneven due to decentralized approach, then satisfaction among citizens in some areas will grow while others it will be reduced.

4.5.2 Digitalization. Digitalization plays an important role in this scenario because it allows to collect data, offer better services and get citizens involved in policy-making. As the government spending is generous but decentralized decision-making is appreciated, then digitalization will occur unevenly in different areas. Different governance models will emerge in digital projects where some rely more on public sectors while others engage private sector and volunteers. Big data use and open data use is highly encouraged as well as combination of different public and private databases. However, many different models will emerge in their use. Digital identity and e-residency will be developed

further by involving numerous stakeholders from public and private sector.

Table 1: Summary of five governance scenarios.

Scenario	Governance	Digitalization
Ad Hoc Governance	Centralized and fast decision-making under strong budget constraints. Executive branch centric, reduced role for parliament and local governments.	Uneven digitalization. Cost-cutting and standardization in most areas.
Night-watchman State	Centralized and calculative decision-making under severe budget constraints. Executive branch dominance, minimal role for parliament and local governments.	Limited digitalization aimed at efficiency gains. Privacy and security concerns.
Entrepreneurial State	Centralized and fast decision-making under generous budget constraints. Executive branch aims at strategic agility and acts as a corporation. Limited role for parliament and local governments.	Strategically important areas are priority. Internationalization of government platforms,
Caretaker State	Centralized and analytical decision-making under generous budget constraints. Government focuses on welfare of all citizens. Parliament and local governments play formally important role but not in reality.	Even, holistic digitalization and quality of services and preventive policies through social analytics.
Networked Governance	Decentralized and analytical decision-making under generous budget constraints. Executive branch has limited role. Parliament, local governments, communities and citizens play important role.	Diverse digitalization with different models. Co-creation of services and many tools for participation.

5 Conclusion and Implications

The academic literature suggested that the current trend is a shift from the efficiency driven digital government to equity driven networked digital governance. A move from

efficiency driven digital government to digital governance suggests that participatory aspects must be kept in mind in the governance of public sector. Even though many experts and scholars emphasize these trends, the potential future development of networked digital governance is uncertain. Nevertheless, the point of scenario planning approach is to think about diverse set of options – including options with lower likelihoods and consider weak signals because they may grow stronger over time.

In the Estonian context, development towards networked digital governance is at best a weak signal. From a current perspective, it is least likely scenario as the trends have been towards centralization of governance in the past decades. The proof in the pudding is the Estonian government's current implementation of „state reform" agenda. By "state" Estonian government means primarily executive branch. The executive branch's action plan from January 2017 to March 2019 concerning public sector reforms states that the core principles are balance (as balanced development between regions, balanced service delivery between local and central government), efficiency and openness [28]. Nevertheless, these reforms are primarily efficiency driven focusing on cost-savings in various tasks of public sector services delivery as well as in key functions. The government has listed about 50 activities in its public sector reform agenda. Of these 50 about 30 are listed under efficiency principle while balance and openness have both 10 activities listed. In addition, some of the activities listed under balance and openness seem to be efficiency driven. For instance, one of the key aims listed under balance is to merge municipalities so that each of them has at least 5000 inhabitants. One goal under openness is to implement efficiency plan in enterprise and innovation policy in order to cut public sector expenditure [29] [31].

The agenda has also limited explicit emphasis on technological developments which may enhance the implementation of public sector reform agenda. Of the 50 activities in the agenda 6 refer explicitly to the use of technology. Other activities may have technological component but they are not mentioned explicitly. Under the principle of balance only one activity "improvement of local government IT capacity" concern explicitly opportunities offered by technology. Under efficiency are listed "Development of public sector universal ICT service description and pricing model", "Automatic technological solution for declaring personnel and financial data", "Cross-use of data between registers of Ministry of Defense, Ministry of Finance and Ministry of Social Affairs", "The use of electronic invoices between private

and public sector" and "Complete transformation of public procurement to the electronic platform". There are not explicitly technology-driven initiatives mentioned under the principles of openness in the reform agenda [28] [31].

Implicitly or explicitly, the public sector reforms affect democratic aspects of governance as well. Efficiency may not always go in-hand with democracy. Considerable trade-offs between efficiency and equity may appear as the efficiency driven reforms will be implemented. The centralization of government services and functions may cause further alienation of government from citizens and obviously means a move further away from networked governance. These are the issues that executive branch's reform agenda does not address as it is primarily focused on efficiency of public sector service delivery and is executive-branch centric. The agenda explicitly points out that "Only parliament can take a lead position on issues of democracy and public involvement".

However, the reality is that parliamentary discussions in the special committee on "state reform" have focused solely on executive branch agenda and reacted to the goals of government. The committee for state reform drafted bill titled "Principles of State Reform and Good Administration" in 2018 which was passed by the Estonian Parliament in February 2019. The bill emphasizes importance of public service delivery, their accessibility and standardization by use of digitalization. It stresses cost-efficiency and need to reduce public sector employees as well as transparency and simplicity of regulations. It also sees increasing role for ministries in policy-making and importance of defining political responsibility clearly.

Most importantly, the bill ignores democracy and equity concerns where executive branch stopped at discussing its reform agenda and specifically highlighted a role for parliament. Therefore, a more pro-active approach by the parliament and asking more fundamental questions about public sector governance and its reforms is crucial for establishing a proper balance rather than articulated balance. For instance, from the perspective of members of parliament, it is crucial to think how the reforms will affect the balance between legislative and executive branch. As members of parliament represent different areas from all over Estonia, then it is fundamental to explore how different governance models accommodate involvement of municipalities, local communities and individuals in decision-making processes of public sector and how digital solutions can be utilized in these processes [31].

Most importantly, it lacks a holistic view of networked digital governance. In this area, developments in Estonia have gone backward in the last years (considering that internet voting is more like a service rather than a tool for enhancing democratic participation). Estonian position in UN e-governance index is 13 but in participatory dimension the country is ranked 22nd [29]. The use of participation portal osale.ee has declined. E-democracy development is not a key priority on parliamentary and local government levels.

This document analysis does not imply that executive and legislative branches' respective reform agendas must see everything through the lenses of technology and take a technologically deterministic worldview. Rather, opportunities offered by technology should be more integrated into the agenda and explicitly pointed out. For instance, under the principle of balance is a goal to establish "state houses", which are essentially public sector service hubs for delivering public services. Potentially, such hubs can be also virtual or semi-virtual [31].

In summary, this bill as well as executive branch action plan combine elements from "Ad Hoc Governance", "Night-watchman State" and "Entrepreneurial State" scenarios. However, it is a move away from "Networked Governance" scenario. This emerged bias of institutional development and mental models in Estonia towards centralized governance models is puzzling. This is particularly so because early governance digitalization seemed to suggest that more decentralized networked digital governance delivers success. Emerging democracies such as Estonia in the 1990s benefited from not having legacy digital systems and this allowed them to start from scratch [30] [31]. Early phases of government digitalization seemed to suggest that more decentralized networked governance delivers success.

6 ACKNOWLEDGMENTS

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