

Digital government as “glue” in multi-level government contexts

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Abstract

Digital government are transforming governmental structures and institutions. The common institutional arrangement of a multi-level government system (MLG) clearly affected by the increased use of digital government systems within public administration. This is a hierarchical structure structuring powers and resources in which digital government has to be embedded. The outcomes of digitalization in such settings can be different. This argument builds on two previous implementation studies that open for this argument. These studies are here used as illustrations for the theoretical embedding of how digitalization can glue levels of government together.

The conclusion is that digital government systems, if used smartly, can function as glue between the levels of government in an MLG system.

1. Introduction

A common arrangement of governments to address both representation of values and local interests is to form a multi-level government system (MLG). An MLG-structure is commonly divided into national, regional and local levels. Such institutional arrangements, becomes in most states the context for how digitalization can be formed, implemented and influencing the government structures.

It has for long been known that implementation of policies in an MLG system is often complex and challenging [1, 2]. There are several risky pitfalls when translating policies and programs from one level to the others. In addition, there are also complex interplay of public, private and voluntary organizations involved in the networked and global structures of governments, formed around the New Public Management (NPM) models [3, 4]. Taken together the digital government are added to a complex structure [5, 6]. However, the advanced modeling on digital government is missing problematization and explanations of such

challenges, Bertot et.al. [7] are arguing in the embracing editorial.

The basic idea of MLG is to bring policies from general statements into local practices and through this process make adjustments to more local conditions [2, 8, 9]. Policy implementation in an MLG-setting is a social process where different meanings and values are re-framed and re-formulated from its original intentions of a message, an artefact or a tool – through a process of translation [10, 11]. The translation processes play a crucial role in multi-level government systems and will here be the lens through which digitalization can be seen as a glue in implementation of policies.

Digital government, is a practice in most states both for internal digital administration and for external digital services to citizens, business and other organization. From a theoretical point of view, it has to be seen as a socio-technical system formed in the interplay of technology, data and processes set in the context, aim and politics of government [12]. Yildiz [13] argues, based on an extensive literature review, that e-government cannot be defined by technology, since technologies develop, but it is rather about a continuing organizational development. The innovative potential of digital government is obvious and Bertot et.al. [7] are in an extensive research overview pointing out innovations in areas as service delivery, organization, policy, governance, and administrative processes. Their overview shows the innovative potential of digital government and that it is embedded in its specific context. The importance of institutional arrangement as a pre-requisite of digital government was also identified by Heeks and Bailur [14]. Thus, this paper aims to add theory building in digital government by relating to models of multi-level government systems.

1.1 Aim of the paper

The aim of this paper is to analyze how digital systems in public administration can be a glue in the public administration in an MLG- system.

In this paper two previous implementation studies [15, 16] are re-analyzed, since the use of digital government had such different effects. The empirical cases are not presented in full here but rather used as illustrations of the argument. Therefore, this paper has a normative standpoint, when focusing on how a well-designed and implemented digital government system can improve policy coherence and outcomes.

2. Research design

This paper builds on a re-analysis of two studies conducted in Swedish local governments during 2015 and 2016 conducted in collaboration with colleagues [15, 16]. In both case studies digital government has been considered one aspect of several when analyzing coherence of policy translation from national to local levels. However, it became obvious when working on these analyses in parallel that the design of digital government tools did matter for successful translation, and it is from this insight that the current paper emerged.

Here has therefor the data from the previous studies been re-analyzed with a focus on the use of digital tools in the public administrations locally. Therefore, the original interview transcripts, policy documents and other field work notes have been re-addressed and categorized in relation to how they can illustrate the use of digital tools [17].

2.1 The field work in previous case studies

The Swedish governmental structure is characterized of MLG, and the two main public welfare policy areas are public education and health care. Both education and health care are public funded and organized even if there are openings for alternative providers locally in line with NPM and the demands for efficiency and customer quality perspectives on public services [18]. Implementation of two specific policy programs are studied here: health promotion and disease prevention [15] and educational quality [16].

In the public health care field, we have conducted a case study of the implementation of health promotion and disease prevention [15]. The outcomes of the national policy were traced in three local governmental organizations. This implementation study was based on analysis of policy documents and interviews with key-actors, as central policy makers and managers in the central management in each local government organization and at a variety of primary care units. All the informants in central administration had a medical professional education and experiences from working in primary care. All

interviews were semi-structured, conducted in Swedish, at a place chosen by the informants. In the previous study four local government organizations were included, but for this re-analysis I have excluded the capital region, since it is severely larger than the others and there was also too much interaction with the national governmental agencies. Thus, the translation did not function in the same way as in other local governments.

The case study of the implementation of quality control systems in education [16] was conducted in six local governments, whereof two are included in this paper illustrating the most different use of digital government systems. In this policy area the local governments have to organize their own quality management in relation to local contextual factors and competences, but there is a national agency – the school inspectorate – controlling how legislation and policies are guiding local practices. This case study was based on text analysis, interviews with key-actors and focus group interviews with teachers and headteachers. Most of the staff at management level, in this sector, have a professional background as teachers the quality manager in one local government had a background as quality manager in a private service company. In total 24 interviews and three focus group interviews were conducted.

Case study:	Health	Education
Specific policy	Health pro-motion and Disease prevention	Educational quality
Local governments included (total)	3 (4)	2 (6)
Interviews included (total)	32 (40)	8 (24) 3 (3) focus groups
Policy documents	National level Some local	National level Reports to the Inspectorate
Motives for selection of cases included for re-analysis	Variation in size, economy and numbers of independent primary care units.	Variation in size, since size was the main explanation in the total study.

Table 1: Included empirical material

This re-analysis is grounded in the understanding that there was a difference in the use of digital government systems. The argument here is argumentative since it was clear that a more well-designed digital system could glue levels of

government together even if they are independently managed. This argument is based in an institutional theoretical framing.

3. Translation in a multi-level institutional setting

Governments are formed by the institutions of the state where they function as a legitimate power. Institutional theory is focusing can explain governmental practices, since it emphasizes the structure of governments and the rule of the game that directs the governmental practice. The multi-level government (MLG) structure, that is in focus here, is an essential part of governmental institutions and forms both the context and content for design and implementation of digital government. Thus, the institutional theory is briefly presented as the frame where translation can take place to glue an MLG-system together and improve legitimacy [19].

3.1 The institutional framing of digital government

Institutional theory has also been used in the field of digital government [20, 21]. Institutional theory is used in most social science disciplines in slightly different ways, but with a common interest on how and why organisations can gain or maintain legitimacy in their institutional environment.

To emphasize the integration of technology as a critical component of the institutional framework the technology enactment framework has been developed [21]. It provides an integrated institutional approach to the study of technology in organizations, particularly government agencies, by showing how objective technologies are shaped by organizational forms and institutional arrangements and thereby become “enacted technologies.” However, this institutional focus on the role of technology in an organization do not focus on how changes can take place and how new ideas are integrated into the setting where technology has been enacted. But in institutional based organizational theory there has been a focus on how new practices and ideas are travelling through structures and among actors and organizations, by being translated [22].

3.2 Translation in organizations

The translation theories have its roots in the Science-Technology-Studies (STS), but it relates to all practices impregnated knowledge-methods-power settings. The translation theories are in particular an

approach to grasp how ideas are travelling between local places but also “up and down” through multi-level systems of governance. All actors contributing to translation get their positions, power and resources by his/her relations in the network [10]. The translation perspective shows how in each and every local context a specific network has to be formed [11].

In this context it means that each level has to adopt to the network and translate policies to make the other levels of governance meaningful in relation to local objectives. As a mirrored practice of the network formation are the local constraints, like the present actors, local resources (or lack of resources) and organizational structures. By this approach implementation is seen as a chain of translations that has to pass some obligatory passage points and is enforced by different mediators in actions. The translation perspective refers to the prioritization of interests and the actors can in several ways modify, appropriate or even betray the meanings of the objective translated [11]. When translation takes place in networks, grasping over multi-level government contexts, actors have to build networks. Hereby, the theories of translation both opens for an analysis covering over multi-levels and also points out the importance to follow the actor – that also can be a digital system – through its network.

3.3 Where and by whom can translation take place?

The links between the levels in a multi-level government system, are the weakest point of the chain of these organizations and thus also for the processes of translation.

In theories of translation the concept *obligatory passage point*, *OPP*, helps to reveal the point that either opens for or constrain a translation process [23]. There are different forms of obligatory passage points and they are always critical for the continuation of the translation and thereby of the process of change as such. The obligatory passage point has to be passed and it does influence how the process of translation continues. An OPP can include and combine more general and even global processes. It is also defining structures and functions in a local setting, like culture, law and regulations. An OPP can be constructed and managed by organizational constraints or by processes enforcing certain practices. But there is a need for key actors actually making the network pass the obligatory passage point, and these actors are the mediators. But who can be the actor making this translation?

The translation literature here point at the importance of the *mediator* as a key-actor. When an actor functions as a mediator, “it” does not produce new knowledge or other resources but are translating and re-framing them to fit into the new context [10]. Hereby, the mediator is similar to what in the policy analysis literature has been seen as a policy entrepreneur [24]. The policy entrepreneurs are knitting the policy networks together [25]. By using the concept of mediators, we can also include digital government systems as mediators in the process of translation [26]. This is in line with Cordella’s [27] argument that the information infrastructures highlight both the dynamic of the system as such and the policies and values it carries.

The concepts OPP and mediator open for an analysis of how translation of policies can be embedded into and structured by digital government systems within the governmental institutions.

4. The MLG structure in Sweden

The Swedish local governments have a high level of autonomy and are funding their assignments by a flat rate tax. They have an extensive responsibility for welfare services and are the main contributors of public services. Most inhabitants see the local governments as providers of public services.

According to national legislation the local governments have to provide and fund high quality and accessible public services as education and health care. These can also be provided by private and alternative organizations in an NPM arrangement.

Both the medical sector and education in Sweden have in recent (last fifteen) years be reformed in line with basic intentions of NPM – New Public Management [28, 29]. There are openings for alternative providers of services, so called independent schools and independent primary care units. All these have to follow the national legislations and they are funded by local governments. Thus, there is a complex interplay of public and private organizations in provision of welfare services at the lowest local level.

The need for evaluations and control has thus increased in the paths of NPM. High quality of public services is also essential for legitimacy of the welfare state in general [30].

The arrangement in the medical sector are similar to the British National Health System (NHS). The local governments have to certified the primary health care provider in line with the regulations provided by the National Board of Health and Welfare. In line with NPM the citizens can sign-up for a primary health care provider of their choice. All

medical practices are regulated by national legislation and recommendations on evidence-based practices structured by the National Board of Health and Welfare (in Swedish: Socialstyrelsen) [31, 32].

A similar reform for the compulsory education for all children has shown that in the educational sector NPM turned local schools into semi-autonomous organizations [28]. They also showed that numbers and levels of manager positions increased, partly due to the increased control and evaluation systems, that gave the managers double localities as they have to: “... serve two entities: the state and subordinated local authorities” [28, p. 436]. By contrasting cases from these two sectors I will here focus on how digital innovations that can “glue” the multi-level system together.

5. The case of Digital tools for Health promotion and Disease prevention

The policy program for health promotion and disease prevention is addressing the wicked problems of public health by focusing on strategic issues like alcohol consumption, smoking, physical activity and eating habits. This policy builds on the UN development goal 3: Good health and well-being, it is based on evidence based medical research and formulated into guidelines by the National Board of Health and Welfare. The implementation assignment for the local governments was to [own translation]:

- diffuse the knowledge of the guidelines in collaboration with medical professions,
- map the need for development of new tools and methods in relation to the guidelines,
- create on-line education regarding the guidelines, and
- develop models and methods to secure the access to digital data for evaluation of the implementation of the guidelines.

This decision, at the national level in the multi-level government system, shows that the government puts an emphasis on the function of digital government solutions for the implementation in the local governments. The digital systems are both supposed to function as a mediator for the education of medical professionals and to secure the possibilities to standardize data, make it accessible and avertible for national evaluations. The system builds on a system of codes already in use for medical diagnoses and treatments – KVA-codes – but additional codes were developed on national level to grasp the health promotion aspects.

5.1 The local case studies in the area of Public health policies

The analysis of the use of digital government in health promotion includes three local governments that vary in size and implementation strategies. They are here called the south (largest), the middle and the north (smallest) region.

The local government in the south region 1.3 million inhabitants. In recent years the immigration of asylum seekers has been massive to the region and it is challenging the public health care system in several ways. There is great diversity in health among the population here and it relates to their differing socio-economic situations. There are 166 primary care units and one third of them are independent ones, managed by private firms with contracts with the local government. This is the highest rate in Sweden. These units also have their independent digital patient record systems. The local governments in the south case as a whole was a late-adopter of digital patient record systems and they selected an existing system developed by a private firm. Therefore, the digital government system used at hospitals and for coordination of patients and medical referrals only reaches two thirds of the primary care units.

The middle region has 450 000 inhabitants and includes both urban and rural areas with two main cities. Ten of the 41 primary care units are independent ones. This local government has developed their own digital patient record system together with a private firm. The system has advanced modules for evaluation and control of activities in health care [33]. The firm is selling the same system to other local governments and independent care providers, and thereby they try to set a standard.

The third case, the north region has 250 000 inhabitants in a very sparsely populated area, where most inhabitants live in the urban areas close to the coastline of the Baltic sea. The inhabitants here rank their health among the lowest in the country and their expected life time is also among the lowest. Thus, the local government council has decided to make several initiatives and programs regarding public health already before this national policy was adopted. This local government was one of the first to develop and implement a digital patient record system in 2006 and in the early days they were seen as a role model for digitalization in health care [34]. Only four of their 34 primary care units are independent ones, and they have to use the same digital patient record system as the public units.

5.2 Translating health promotion into local government

The key tool of the implementation of this policy is to raise questions regarding health promotion in every meeting with patients and to open for coaching and support. There are a two-weeks training course, to become a certified health coach for medical staff. These are managed in each local government based on a program from the National Board of Health and Welfare. In this context the use of digital tools can play a crucial role both by informing and promoting individuals to change activity patterns and by strengthen the implementation in public health care administration. These courses can be seen as mediators in the translation process, but they are not compulsory and cannot be seen as OPPs, since all health care staff can be coaching patients.

But the digital patient record systems are supported by the national agency as a potential mediator for the translation of the policy into practice. In the northern region, where all primary care units are using the same system, one of the persons in charge of the process described the importance of an easy and accessible recording of the activities relating to the policy in the digital patient system:

... it is complicated if there are different digital systems in use, they cannot talk to each other. Then these things are not the first you manually registrar if you have to transfer a patient record. But we in our region have shown that it can be made easy and quick. We also show that it is important to get the right information when the National Board of Health and Welfare is asking about our work.

This interview person showed how the design and implementation of the digital patient record system directly related to the abilities to relate to and record activities in line with the national policies. Hereby the digital system became the mediator making local data available at national level. In this region the use of the digital patient record system is integrated into the work of health promotion and disease prevention in a way that it opens for an easy registration that also encourages the users to ask these questions and make the supportive conversations.

There are similar applications in the digital government system used in the middle region, and it is enhancing the implementation and evaluation of this specific policy. It is an application in the system called "The health chart". The application was added and integrated to the ordinary patient records when it

had been in use for some years. As a specific “chart” the information on the specific policy can also easily be identified and analyzed as a separate part of the recording and separately from other patient data.

The middle local government has developed this specific application to register activities based on KVA-codes related to health promotion and disease prevention. One registered nurse described how these codes are used for the quality management and reporting back to the national level:

The National Board of Health and Welfare will so to say follow up what we are doing. They want to get the numbers out and we can deliver that. We have the KVA codes in use for also meetings with patients ...

It was critical to include this part of the new policy into the existing system with “as few clicks for the doctors as possible” as one of the informants at the central management described it. The local government council also decided to reimburse the primary care units for registrations in the health chart. Thereby both the design and funding promoted the recording of patient data in line with the national policy. To get extra funding it had to register – the digital health chart became an OPP.

One primary care manager said that the Health chart really changed the practice of documentation:

... before we documented it, a little bit where everyone wanted, there were questions about tobacco in all the hundreds of templates located in the patient records and it was not so easy. It was almost impossible to search out the stats on it and we could not report back to the national level. Then we created a uniformed model, based on the national guidelines, they follow exactly the same flow, the same questions. /.../. It does not mean that the work is conducted only for doing that, but since we introduced it here, we pushed them out in the organization and it was promoted by our healthcare director.

This description indicates that the health chart in the digital patient records system became an obligatory passage point for the translation of the policy. This point was enforced by the healthcare director, who became a mediator of the policy in the digital patient record system, by steering this process, getting funding for it and promoting it in the budget as well as rhetoric. The combination of an easily accessible system including economic incentives made the translation a success here.

In the third case in the south region there were no common digital patient record system. Instead several

systems were in use in parallel. Here the medical professionals, in particular the doctors in primary care, seemed to be most hesitant to use these systems in daily practices. Thus, these systems did not have same mediating functions in the process of translation and outreach as in the other local governments. One of the interviewed MD in a primary care unit summarized the situation and said:

Yes, we tried but we are tired, we here in the primary care are so tired of management ideas. One think there is so much, there are increased demands on us all the time. We tell them [the management] that we have had enough. We are not uninterested, it is just too many new and additional things, we just want to take care of people.

It was obvious that the policy was not translated through all levels of government. There can be several reasons for their hesitation, but the lack of a supportive digital systems is a lack of mediation. The policy has to be integrated into daily practice and the care-givers are the key to reach the patients in personal meetings and thus there is a need for supportive systems to encourage and to evaluate the work. Here they lacked such supportive systems and the national policy was not embedded into local practices.

The the comparison among the local governments shows the importance of the digital patient record systems in use. When the systems include obligatory passage points it really promotes the translation process. The successful translation in two of the three cases is promoted by firstly a common digital patient record system, secondly by the integration of the KVA-codes in the digital system and in the middle region also by additional funding. All these aspects were absent in the south region and there was no translation of the policy into practice.

The explicit national governmental decision also included an e-learning platform. However, three years after the national decision only one of the local governments, the north, could show any attempt to develop such a system. The registered nurse in charge of the implementation of the learning platform there described it as:

[we have] ... soon finished the training platform, an e-learning platform, which is about the Guidelines. It concerns both the facts and the guidelines lifestyles and documentation that will provide support for the medical staff. So, it will make it possible to reach many of the staff, since it is tough for

them to get away from their daily work for training in the guidelines.

This shows the ambitions to develop internal use of e-learning approaches. The e-learning platform was developed locally, but fully in line with the national guidelines. However, the e-learning platform are not at all embedded into same system as the digital patient record system. Even if there are potentials to use e-learning tools for patients' own health promotion, no such digital tools were discussed by any of the informants. The potential of the digital system to extend translation further out to the single patient was not mentioned.

5.3 Digital government in Health promotion

In the two successful cases the design of the digital government systems is mediating the ideas behind the national guidelines. Here both systems were formed to support medical professions, downwards in the chain of translation, and to give demanded data up-wards to the national level.

The use of digital patient record systems became an obligatory passage point that enhanced the implementation – and translation – of the policy. Technology was enacted not only to the organization in these regions but also to the national policy. By integrating the policy in the system of the Health chart in the middle region, it became a mediator that is translating the policy from general ideas into practical issues registered with specific codes.

6. Digital tools for Educational Quality

Public education in Sweden are also organized locally and has to be in line with national legislation. High quality in education is a general policy aim for all schools in Sweden in line with the UN sustainable development goal number four. There are national policies declaring the right to equal education in all local governments. This legislation also applies on all independent schools. All schools are under control by the national agency the Schools Inspectorates [35]. This is a new agency has to evaluate quality on regular bases through surveys and reporting on grades in schools and there are evaluations of all schools approximately every fourth year.

All these evaluations are publicly available in an open data-base managed by the national agency. The agency publishes both their reports and data on each school. Also, the schools' self-evaluation reports are published here after their final report. This indicates that the digital government system in this sector is used for information of post-inspection reports and

surveys to pupils, grades, and general information as published on sites like (www.skolinspektionen.se) and (www.grundskolekvalitet.se). Both these systems are public and open sites, where you can compare quality in education.

6.1 The case studies of Educational quality

In this case study the size of the local governments played a crucial role for the translation processes and thus the largest and smallest local government in the study [16] is included in this analysis. The key difference is the number of independent schools that opens for pupils and parents to apply (without additional fees) to schools with what they as customers consider to be the “best” quality.

The large local government has a population of 547 000 people, and its administration is divided into ten city districts with separated areas of responsibilities. There are 139 public primary schools and 42 independent primary schools, funded through a local NPM model of customer choices. Each of the district councils decides upon their organization, budget and evaluation systems. The central management for education are strategically following up and controlling in line with aims formulated by local and national government.

The small local government is one of the smallest local government in Sweden with 3700 inhabitants. It is located in a rural area and there are several villages that the inhabitants consider to be their community center. There are two primary schools. A few years ago two former village schools have been closed down [36]. Both these schools are public and there is still the same national demands on educational management as in the large local government regarding funding and evaluation.

6.2 Translating Education quality

The general impression of all case studies in this sector is that the digital applications are designed to show quality of education by comparing schools. The system is hereby supporting the quasie-market arrangement of NPM. The indicators used are collected by the national school inspectorate and the grades of students. This digital system is designed by “outsiders” and not by the teachers in daily practices, as in the case in the public health sector. The overall conclusion of this case study was that this digital government system is formed nationally and not integrated into the local policy making and practices and thus neither functioning as a glue in MLG.

The principal in one school in the large local government discussed it in an almost wearied mood. He said that it is “almost an unbeatable challenge to grasp, read and understand all the objectives of the national quality systems, and still I have been in the business for 30 years”. He found it even more complicated and challenging to tell this to the teachers he manages. He found it to complicated to as the to make it work in their pedagogical everyday practice, and summarized it as:

The quality systems, management digital reporting is so extensive and, in many respects, so complex that it is hard to grasp.

This and several similar statements indicates that these digital systems were not in the hands of the school staff nor of the management of the schools. They just had to provide data that was not in relation to what they did in daily work. The systems were not designed to meet the needs to support quality management, nor the teachers daily practice or the principals’ management of educational quality. The systems did not support their work are thereby neither functioning as a glue in the implementation.

Similar general concerns were raised in the small local government, where they had basic internal digital systems for planning and organization but not for quality management.

The local government council still had an ambition to make teachers and even pupils aware of local policy aims as well as the national regulations of educational quality. This is a form of translation of what quality can mean in their own practices, but completely without support of the digital government system, as one of the two principals said:

In daily work it is actually about everyone being present and aware of his or her role and take responsibility for it all. That makes quality in education.

Here the small organization for education opened for more and tighter relations and contacts. But still they lacked a system showing aggregation of grades and performance. Here instead personal communication functioned as a mediator for translation of policy ambitions without the support of a digital government system.

The large local government organization, on the other hand, had recruited quality managers at the management level in each city district. These were supposed to function as mediators, supporting as the systems for surveying and evaluating educational qualities. However, they came to manage educational quality as an additional new task, not embedded into daily teaching routines. The schools as well as local

policy makers were struggling with the translation of these ambition.

Even if grades have been part of education for a long time, there are new practices developing when they are aggregated and published in national on-line systems. As one of the quality managers in the large municipality said:

... now I have to analyze all the grades and look for patterns and results of interventions. But it is not what the system gives. We can even follow single pupils, and we do that to see where to make changes to improve the overall results [she shows graphs and analytical spread sheets]. There are single pupils here and we can follow them over the years. But how do we seen patterns and use the data?

So even if there are digital government systems in relation to the policies on educational quality in Sweden, these are not designed to address the management of the schools nor to support the teachers and principals. The technology is not enacted to the organization, nor to the policy aims of the institutional structure of public education. They do not become a part of the translation chain, and the levels in the MLG-structure is not glued together.

6.3 Digital government for Educational quality

Thus, the systems are not supporting the translation of the policies nor gluing the levels of government together. In spite of the bad design of the systems they are obligatory passage points since all schools are controlled and evaluated.

There are also few openings for local mediators to translate the systems into a more practical use or by developing alternative local systems. The national control system, may even be seen as a lock-in of policy and digital government development in this area since it is not at all enhancing translation.

7. Digital government as a glue?

The overall conclusion is that digital government systems, if used smartly, can function as glue between the levels of government in an MLG system. This paper has aimed to add to theory building in digital government by relating digital government to models of multi-level government systems and to discuss how digital systems can support translation of policies.

7.1 Cross-case analyses

These two case studies focused on the relations between national policies with clear aims – improved health and well-being and high quality in education. Both these policy ambitions also relate to the global sustainable development goals set by the UN. This indicates that there is also translation from global goal to national policies and structures, even if not included in this analysis since there are no digital structures nor systems for that translation.

The main conclusion drawn is that digital government systems can be designed to promote translation and implementation of policies. Through the comparative bottom-up case studies it became obvious that the translation through a multi-level system has to follow a track of coherent concepts. The first key for making digital tools into a glue combing the level is the need for a coherent focus on concepts and models of the policy.

The most successful case here the quite simple “one-stop”-template for guidance of the health promotion coaching and registration of these interventions of health promotion and disease prevention in the middle local governments. It had the potential both to combine national policy values and norms and to stretch all the way into the daily practices at the primary care units. The national decision was used as a road map for the design of the health chart in the digital patient record system. The main obstacles in the other two local governments were the lack of a common digital patient record system in the south region and the old digital patient record system in the north region. Digital government systems had a potential to contribute to the translation and implementation in a multi-level government system.

On the other hand, in the educational quality case there were no signs of such translations. The national systems were not translated into local practices. Even if the national system was efficient when used for comparison of education quality in different schools it was not embedded to enhance the quality of education nor to translate national policies into local practice. Instead several local interpretations of quality were used. There is a need for mediators enhancing the processes of translation and thereby gluing together the multi-level government system.

7.2 Digital government and MLG

This analysis has shown that when digital government systems are formed in line with the national policies the policy is translated in several steps and is thereby gluing together the MLG-system. The innovative processes of digital government development have to be seen in relation to the

institutional setting both in the meaning of the governmental structure and of the organizational context. In practice it is also clear that these systems developed as mediators to support or hinder policy translation, by functioning as OPP:s to keep up the strength in the glue over the levels. There is a need to further discuss the contribution to theories on digital government in multi-level government structures, by using the theories on translation.

In a more philosophical way we might even have to open up the discussion on why we have MLG-structures in a digital government. The MLG-system relies on a geographical base of governments, but what is use of such geographical borders if we are all on-line?

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