Public E-services and Electronic Identification –

A Comparative Implementation Study of Swedish Public Authorities

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Author: Linus Johansson Krafve.
Supervisor: Elin Wihlborg.

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Introduction

The political, economic and social lives of citizens all over the world are increasingly integrated and intertwined with information- and communication technology (ICT) of different kinds. Certainly, this challenges borders of the welfare state, both literally and organizationally. Nevertheless, even though the state is challenged, the communicative capacities rendered possible from ICT create expectation on governmental bodies of becoming e-governments and increase service accessibility through e-services.¹

The Swedish Government has extensive ambitions in achieving a rapid, yet strong development of e-government. In 2008, The Swedish Government for the first time launched a comprehensive and gathered policy for e-government and the year after started The eGovernment Delegation for operating on e-government in the public administration.² In the fall of 2009, under the Swedish presidency of the EU, a ministerial declaration of the ambitions of e-government in the EU was presented.³ E-government has clearly become an important issue for public policy in recent years, on all managerial levels.

Within the broader context of e-government, this study has a specific focus on the issues of electronic identification, so called digital Identity Management (IDM).⁴ In public e-services, public administrations must be able to identify the users. For public administrations, e-services have become a crucial activity in fulfilling their duties in society. Electronic identification processes is a key component in e-service delivery, and in the face of individual citizens, identification processes is an important aspect of the general impression of efficiency, safety and even legitimacy of public e-services, and in the long run for the public administrations themselves. For e-service development and policy on e-service, electronic identification is dynamite: one representative of The eGovernment Delegation witness that electronic identification is considered to be the most important aspect of e-government development in Sweden right now.⁵ As such, it could be expected to become one of the cornerstones in government policymaking; much is actually happening in policy processes electronic identification as this is written. Electronic identification is both a fundamental part of e-government policy and a critical component in public administration e-service practice. This makes it important to study as a policy process; both in its own right and as part of a general administrative development towards ‘e’.

There has not been much research done on IDM in public administrations from a policy analyst perspective. There is a lack of empirical as well as theoretical understanding of it. E-government in general is in many ways a complex policy domain difficult to fully comprehend. It is a domain largely run by technological imperatives, a strong belief in rationality/instrumentality and rapid technological development.⁶ Yet, to analyze a policy processes on e-government are to analyze far-reaching political, social, organizational and economical elements of public administrations. The same applies to electronic identification more specifically and raises important questions: What are the

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¹ Everard (2000).
³ EU (2009).
⁴ Birch (2007); Lips, Taylor, Organ (2010).
⁵ Interview 7.
relevant policy and implementation mechanisms in policy processes of electronic identification? What are the technological, organizational and policy imperatives for development of electronic identification in public administrations? What are the ultimate political, social, organizational and economical consequences of increased use of electronic identification methods for public administrations? The character of e-government in general and electronic identification in particular makes it especially imperative to study from a policy analytical perspective that addresses these critical issues. As electronic identification is being presented as the most important aspect of e-government in Sweden, it is one of the big issues for public administrations to address; and as such, it is a big issue for policy analysts to address.

Thus, this is a comparative implementation study of electronic identification in three national public authorities in Sweden, namely The Swedish Transport Agency, The Swedish Tax Agency, and The Swedish Migration Board. The Swedish Transport Agency is a newly established public authority, started on the 1st of January 2009. The responsibilities of this new authority mainly consist of merging responsibilities of other public authorities. Its core activities are regularization, supervision and authorization within the four modes of transportation; road traffic, railway traffic, shipping and air. The Swedish Migration Board is the public authority responsible for ensuring a sustainable migration practice which protects the right to asylum and needs-based labor immigration, as well as facilitating movement across borders and expanding European and international cooperation in migration. The role of the Swedish Tax Agency is to ensure the financing of the public sector, facilitate the financial and economic activities of citizens and corporations, while preventing and counteracting economic crime. On the surface, these three authorities seem to have similar and comparable organizational resources for implementation of electronic identification. How is their handling of electronic identification looking today? In what way are these handlings comparable with respect to their different organizations? As electronic identification is more and more considered to be an important public policy issue, how could electronic identification be expected to develop in these authorities?

**The Aim of the Thesis**

The aim of this thesis is thus to analyze how three Swedish public authorities handle and develop electronic identification in public e-services. Firstly, this calls for describing and mapping out what policies are steering, regulating and managing the Swedish public authorities when it comes to e-government in general and electronic identification in particular, and what policy ambitions are expressed there. The next step is to investigate the actual process of implementation and action within the authorities, that is, what is really done there on electronic identification. The final step, which is the main research activity, is to analyze and theoretically explain the efforts and action of each of the authorities in working with electronic identification. Institutional theory, drawn from political science in general and the research field of public policy analysis in particular, will be employed in the analysis. Thus, the research questions guiding this study has been:

- How is the work with electronic identification organized and implemented within the three authorities, when it comes to strategies and action?
- What is the theoretical explanation for the organization and implementation of electronic identification in the public authorities?
The first question is a 'how'-question, and the second is a 'why'-question. This thesis both has a descriptive and explanatory ambition. Descriptive theories will guide the analysis of the first question, and institutional theories will be applied in analyzing the second question.

**Outline of the presentation**

This presentation starts with a mapping of the policy context of e-government and electronic identification. It serves the purpose of positioning the study empirically, and paints a background picture to the empirical data gathering and analysis. The second section presents the theoretical setting. It is positioning my study within a broader framework of public policy theory and research and highlights the theoretical knowledge this study is using for analysis. The third section is on methodology, applied methods and questions on validity. The last section presents the gathered data.

This thesis is presented in two documents. This one aims at presenting the study's general framework and methodological aspects. The empirical material is here presented and fully referenced. The other document is written as an article to be submitted to the journal *Public Administration*. The article has a traditional article outline, more focused on analysis. Thus, this text lays down the background, and is not meant to be read in its own right, but in reference to the analysis presented in the article.
What is E-government?

What is e-government, and why has it become such an important issue for governments all around the world? Castells (2000, 2001) contrast the modernist age with the information age. The modernist age was a time in which rationality and engineering were the political imperatives, and the state was the main political subject, through democratically elected policymakers and policy implementation in public administrations. It was a time of standardization and a general belief in scientific policymaking. Norms of work, economy and peoples lives were predictable, which made public policy planning easier. The service of the public sector could easier be standardized and supplied in a certain form and on certain times, and that suited most people.\(^7\)

On the contrary, the cornerstone of the information age seem to be risk and speed. The capitalistic system breaks the borders of the national state. The instability of the dynamic financial system has sometimes lead to chaos and panic, but it has also led to increased productivity made possible by developments in ICT. This technological development has been so profound that the function of and the ideological base of the economy have been altered. The Internet is the most important innovation of them all. Network is the new organizational principle, both for individuals and business. Networking business require fast and safe ICT for communication in real-time. Big and small businesses are interwoven in a complex web of cooperation and competition. Outsourcing is a natural organizational principle. For individuals old, rigid ways of organizing life becomes much more diversified.\(^8\) Paralleling this development, administrative reform in many Western countries has displaced much state policy capacity upwards to supra-state arrangements such as the European Union, downwards to local government, and outwards to corporations and NGOs.\(^9\) Contemporary states aren't alone in their exercise of politically sanctioned power, neither in policy-making, nor in implementation.

When it becomes difficult to distinguish between work and leisure-time, between business that operate domestically and abroad, and between public and private, new needs and demands develop. The public infrastructure must acknowledges this and act to deliver service thereafter. The state could no longer decide when and in what form service will be provided. Despite this, expectations on the state to provide service have increased. After all, in Sweden most governmental services are still performed by public agencies, and people don’t have the choice to go somewhere else for this service. Contemporary citizens require easier, more rapid, and more integrated and responsive service delivery from their government. This puts pressure on the public sector to adapt to a more business-like way of organization, to improve customer-friendliness and efficiency. New forms of organizations calls for new forms of responsibility and accountability. Often this has been expressed within the discourse of New Public Management (NPM). However, E-government is not another NPM project.\(^10\) NPM is in

\(^7\) Castells (2000, 2001).
\(^8\) Castells (2000, 2001).
\(^10\) Homburg and Beckers (2005).
fact on rollback in many states, whereas e-government in moving forward in an ever increasing speed.\textsuperscript{11}

What should be considered e-government then? Heeks (2006) defines e-government as the use of digital technology and web-based applications by governmental bodies.\textsuperscript{12} From such a broad definition, it is obvious that ICT is reaching far into and across an increasing range of contemporary governmental activities. In its simplest form, e-government is sometimes referred to as ‘Government-as-usual + ICT’.\textsuperscript{13} However, e-government is much more. It reaches beyond mere efficiency, or doing things more rapidly and less costly with ICT, or other easily quantifiable effects on administration. E-government actually reaches far into the functions, legitimacy and political nature of public institutions. And because it does, it alters the very nature of the existing governmental institutional frameworks.\textsuperscript{14}

Yet, despite its complex character, oversimplifications on the instrumentality of ICT in public administrations could be seen in much comment on e-government. The expectations on e-government from policy-makers around the world are enormous. E-government is becoming an integral component in all public sector reform, and has moved from a place in the political margins, to a place where it is the norm of reform, or ‘the way to “do” modern government’.\textsuperscript{15} There is a universally accepted expectation on ICT to support efficiency and transformational public sector change, despite the fact that little knowledge exists.\textsuperscript{16} At the same time as e-government is important in policymaking rhetoric, it is an important principle for organizing public administrations to use ICT and become e-administrations.

\textit{Framing the Policy Discourse of E-government}

E-government has become a political answer to most problems of governance and governability in Western society. Supra-national authorities view e-government as mainly a tool, towards achieving given ends. The European Commission states that:

\begin{quote}
\textit{eGovernment is about using the tools and systems made possible by Information and Communication Technologies (ICTs) to provide better public services to citizens and businesses... Effective eGovernment also involves rethinking organizations and processes, and changing behavior so that public services are delivered more efficiently to the people who need to use them. Implemented well, eGovernment enables all citizens, enterprises and organizations to carry out their business with government more easily, more quickly and at lower cost.}\textsuperscript{17}
\end{quote}

The virtues of the information society - speed, accessibility and efficiency - echoes in contemporary policymaking. Furthermore, The European Commission frames the issues of e-government within the broader notion of economic growth in the EU. The drivers of growth are said to be knowledge and innovation, based on the widespread usage of ICT. The European Commission acknowledges that the technological development is what forces policy response:

\begin{itemize}
\item \textsuperscript{11} Dunleavy, Margetts, Bostow, Tinkler (2006).
\item \textsuperscript{12} Heeks (2006).
\item \textsuperscript{13} Bryant (2007), p. 3.
\item \textsuperscript{14} Contini and Lanzara (2009).
\item \textsuperscript{15} Rawal, Koutrakou, Nixon (2010), p. xxiii.
\item \textsuperscript{16} Foley & Alfonso (2009).
\item \textsuperscript{17} [www]: ec.europa.eu.
\end{itemize}
Proactive policies are needed to respond to the fundamental changes in technology. Digital convergence requires policy convergence and a willingness to adapt regulatory frameworks where needed so they are consistent with the emerging digital economy.\textsuperscript{18}

Policy making must be made more responsive to the demands from ICT development. One of the demands from this development is a growing expectation from citizens and business for their governments to be more open, flexible, and collaborative in their service delivery.\textsuperscript{19} Better service has to be delivered with fewer resources.\textsuperscript{20}

In Sweden, technological development in ICT has attracted attention from policy-makers since the 1960s. This attention has mainly been manifest through a technological imperative, by which governmental bodies were expected to increase their use of ICT to make more effective their inner deeds and duties. In the 1960s and 1970s, a rapid development of computing within the public sector coincided with the expansion of the welfare state. The major incentive for developing usage of ICT in the public sector in the 1960s and 1970s was thus to improve and expand the scope and capacities of the welfare state. From the 1980s onward, the Swedish policy making discourse on e-government has shifted to public savings.\textsuperscript{21}

However, the Swedish Government has for some time not had a united policy for usage of ICT-solutions in the public administration, and has on several occasions attention has been called to the need for a coordinated management of e-government.\textsuperscript{22} In the beginning of the 21\textsuperscript{st} century this began to change, mostly due to the establishment of the notion of the 24x7 Agency, under the responsibility of the 24x7 Delegation.\textsuperscript{23} In 2007, The Swedish Government took further action. A group of State Secretaries was formed with the mission to investigate how the management of the Swedish e-government could be improved. One of the results from the workings of this group was the National Plan of Action for the E-government from 2008. This was the first time all the e-government policies were presented in a single, unified document. The main objective of the action plan is to make it ‘as simple as possible for as many as possible’. This ambition is framed in economic competitive terms. Sweden has to have a modern, effective and simple public administration to be able to compete on a global market for work and welfare. Another explicit objective of the action plan is to ‘slim’ the administration in order to economize limited resources. The aim of the plan itself is to coordinate the management of e-government across organizational borders of ministries and authorities.\textsuperscript{24} However, the action plan presents a simplistic and ‘airy-fairy’ technological imperative that does not take into account the complex interaction of technology and organization.\textsuperscript{25} The step from policy aspirations in the document and administrative practice was perceived too big by public administrations themselves.\textsuperscript{26}

From 2009, the responsibility for e-government is be taken over by The eGovernment Delegation. The delegation is to continue the establishment of a centralized control of

\begin{itemize}
\item \textsuperscript{18} The European Commission (2005).
\item \textsuperscript{19} OECD (2003).
\item \textsuperscript{20} EU (2009).
\item \textsuperscript{21} Ilshammar, Bjurström, Grönlund (2005).
\item \textsuperscript{22} Riksrevisionen (2004:19).
\item \textsuperscript{23} Dir (2003:81).
\item \textsuperscript{24} Finansdepartementet (2008).
\item \textsuperscript{25} Melin (2009).
\item \textsuperscript{26} Interview 7.
\end{itemize
the progress of e-government, explore the impact on the citizens by this development, and to have a stimulating effect on standardization of ICT-solutions. The aim of the delegation is to unite the national management of e-government in one administrative unit. Problems with duplication and overlap should be solved by improved coordination. One important coordinating component in this is the 15 member authorities that take consensus decisions in the delegation on a managerial level between the authorities and The Government Offices.

In 2009, The eGovernment Delegation published its first report. This report takes as its starting point the ‘as simple as possible for as many as possible’-vision of e-government development. The report presents a ‘third generation’ e-government strategy focused on productivity, efficiency, adaptive ability and innovative capacity of the Swedish society in its entirety, governed by citizen and business needs. The next report, published in March 2010, aims at operationalizing the suggested vision. The final report from The eGovernment Delegation is presented in 2014. In the meantime, most Swedish public agencies are continuing to turn their attention to increased usage of ICT. According to many experts, this might call for a thorough revising of the basic law that is regulating the public administration in Sweden.

The lowest common denominator in both e-government practice and theorizing is the emphasis on the connection between ICT and public administrations. In Sweden, the service needs of citizens and business have come to be equally important in e-government development. There is much ‘fuzz’ about e-government; most of what is said is filled with high expectations and little systematic knowledge. It calls for in-depth studies of its parts, one of which is presented here.

**Electronic Identification**

Traditional modes of identification are, for example, through face recognition, identity cards or a personal signature on paper. It is usually referred to as identity management (IDM). Electronic identification is identification of someone through ICT and is referred to as digital IDM. It is in essence and function the digital equivalent to an identity card. Authentication refers to confirmation of identity, as well as a confirmation that data is unaltered. An electronic signature serves to identify and authenticate data. Electronic identification is used in public e-services.

The European Commission has published a directive (Directive 1999/93/EC) on a community framework for electronic signatures. Within the Directive, the issue of electronic identification is framed in terms of economic growth in the internal market:

> Electronic communication and commerce necessitate 'electronic signatures' and related services allowing data authentication; divergent rules with respect to legal recognition of electronic signatures... in the Member States may create a significant barrier to the use of electronic

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28 Interview 7.
30 SOU (2010:20).
33 Lips, Taylor, Organ (2010).
34 E-nämnden (04:02).
communications and electronic commerce... [L]egislation in the Member States should not hinder the free movement of goods and services in the internal market...

In the directive it is stated that an electronic signature refers to many forms of signatures communicated electronically; from signing an e-mail message with one’s name or using a PIN-code to log in to public e-services, to more advanced and sophisticated forms of signing. For an electronic signature to be ‘advanced’ it has to meet the tougher requirements defined in Article 2.2 of the Directive. This definition refers to electronic signatures based on a so-called Public Key Infrastructure (PKI). In this system a trusted third party issues a certificate. The certificate is tied to specific user. Each time an e-service is used, the authority checks the identity through the certificate. Lastly, there is a form of electronic signature, without a name of its own in the Directive, but usually called 'qualified electronic signature'. This signature is based on a qualified certificate and needs to comply with comprehensive requirements, stated in Annex I, II and III.

In 2006, The European Commission concluded that all member states had adapted to the directive. However, the intended effect of the directive - a widespread usage of inter-state solutions for electronic identification - had not yet been realized. The Commission views this failure in terms of economic disincentives for service providers. The commercial market for providing solutions for electronic identification has to be developed, mainly by guaranteeing the political will to promote electronic signatures. To further enhance the development of electronic identification, The European Commission in 2008 presented an action plan on e-signatures and e-identification to supplement the existing legal framework.

Within the EU, electronic identification, authentication and electronic signatures are obviously considered important, and have been given much attention recently. An important initiative is Secure Identity Across Borders Linked (STORK), a network-based, partly EU financed project of governance-character that aims at establishing a European interoperability platform for electronic identification. STork has presented a classification on electronic identification in four classes, according to the power in authentication. Potentially, this is very useful for public administrations to use as guidance in everyday work, but it is very unknown to most administrators in Sweden today.

Policy Context on Electronic Identification in Sweden

The Swedish response to EU Directive 1999/93/EC is The Qualified Electronic Signatures Act (SFS 2000:832). The same year, The Swedish Agency for Public Management promoted a uniform format for certificates to be used for public e-services. From here on PKI technology gained importance in Swedish policy-making and overall discourse on electronic identification. The dominant mode for electronic identification in Sweden is now a particular PKI certificate issued by either Telia or

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38 [www]: www.eid-stork.eu.
39 Conversation 3.
40 Statskontoret (2000:40).
some of the authorized Swedish banks. It thus corresponds to the advanced electronic identification method in EU Directive 1999/93/EC.\textsuperscript{41}

The Swedish Tax Agency in 2000 got the mission to investigate and coordinate electronic identification in Sweden in the interagency collaboration of SAMSET. SAMSET was decisive in establishing eID as the dominant mode of electronic identification in Sweden.\textsuperscript{42} The SAMSET project itself was run by a ‘combination of supply and demand’ of electronic identification solutions, where policy called for a solution and banks had one to offer.\textsuperscript{43} SAMSET’s work was eventually taken up by E-nämnden, and since then everything on electronic identification and eID has followed the path initially set out by SAMSET.\textsuperscript{44} SAMSET was also decisive in that it was dependant on a few key individuals with unique knowledge on electronic identification in public administrations. These people more or less ran the development, otherwise ‘it wouldn’t have gone anywhere’.\textsuperscript{45}

In 2006, the Swedish Administrative Development Agency (Verva) took on the mission to promote electronic identification and eID in a three years program.\textsuperscript{46} The program was mainly about financial support for public administrations willing to start up electronic identification in their e-services. In the final report for this program it was stated that these three years had indeed promoted usage in many organizations, but was not substantial in getting electronic identification to be the ‘normal’ choice for identification in e-services. The report also pointed to the fact that few governmental resources has been put in development of electronic identification in Sweden, but had instead been a domain largely run by commercial interest, mainly from banks.\textsuperscript{47}

In Sweden, the bank run electronic identification has been manifest since 2001 in public procurement frameworks. Swedish public agencies have the choice to use these frameworks for electronic identification, in which mainly banks are the contractors. Today, the two most used procurement framework agreements on electronic identification are Infratjänst 2003 and Elektronisk Identifiering (eID) 2008. In procurement from Elektronisk Identifiering (eID) 2008, all contractors must be used, which means that regardless of market share between the bank contractors, their service must be made available if a public agency chooses to take on these modes of electronic identification in their e-service. This framework will run until 2011 and will most probably be extended.\textsuperscript{48} For identification methods other than eID, the procurement framework of Infratjänst 2003 has been used by most public administrations in Sweden. Infratjänst 2003 is however out of date now, and will not be renewed in its current form. The new procurement framework agreement aims at embedding all modes of electronic identification within a complete software package for e-administration.\textsuperscript{49} The same agency is also searching for a procurement solution on eID for organizational representatives. However, there is a risk that the current

\textsuperscript{41} I refer to the principle itself as ‘electronic identification’, and the particular Swedish form as eID.
\textsuperscript{42} Riksskatteverket (2003).
\textsuperscript{43} Interview 7.
\textsuperscript{44} E-nämnden (2005).
\textsuperscript{45} Interview 7.
\textsuperscript{46} Finansdepartementet (2006).
\textsuperscript{47} Verva (2008:16).
\textsuperscript{48} Conversation 1.
\textsuperscript{49} Kammarkollegiet (2010).
procurement procedures will not be entirely coordinated with what is suggested from The eGovernment Delegation, which might cause problems ahead.50

The model of procurement from banking contractors has not been without opposition. In a 2008 report it was stated that the framework procurement model had serious issues of technical nature and suffered from lack of transparency and sustainability. The report suggests that electronic identification gets statute status, a national ID-card with electronic identification gets attached to it, and that a coordinating public authority on electronic identification is established. Sustainability will not be secured unless electronic identification gets regulated in statutes.51 The Swedish national Audit Office criticizes the Government’s weak steering of e-government for not leading to more e-services and increased use of eID.52

The most recent and important development in electronic identification is that The eGovernment Delegation has taken it up. The delegation has identified many problems with the contemporary model of eID, mainly of user-friendliness and implementation difficulties for e-service designers.53 Instead, the delegation suggests a new infrastructure for electronic identification, with the goal to make it simpler and more accessible to organizational representatives, foreign citizens and under-age citizens. The proposed strategy is to establish a board within The Swedish Tax Agency, with the mission to coordinate Swedish public authorities handling of electronic identification, electronic signatures, and even some joint e-services within the government. The affairs of this board should be regulated in law. It will issue statutes, make centralized procurements and agreements with contractors and set norms and standards for electronic identification. The ambition is to homogenize the handling of electronic identification in both the public and private sector. One representative of the delegation explains:

The problem today is that there is no clear leader running electronic identification. Everybody in working in their corner with the procurement agreements made by The Legal, Financial and Administrative Services Agency and the market... I believe it would be better to have a public authority with the right to issue agency statutes. It will be a stronger steering, policy-wise.54

When it comes to legal regulation of electronic identification, the Delegation wish not to interfere with and change the Signature Act, but instead let the board issue more specific statutes. This is mainly because the rapid development in the domain of electronic identification calls for flexibility in detailed regulation, in which case statutes are more suitable than law. However, most laws on public records, about 200 of them, will eventually have to be revised in light of eID.55

Technically and functionally, the Delegation proposes a federal stance on electronic identification. This way of handling electronic identification is getting more common internationally (for example promoted in STORK), in which case a Swedish harmonization to international trends calls for an adaption to federations. As opposed to PKI, in a federal solution the authority behind an e-service never checks the identity of

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50 Interview 7; Conversation 2.
51 Verva (2008:12).
53 Interview 7.
54 Interview 7.
the user. Instead, a centralized federal coordinator does the check through identity certificate providers. Through this check, the federal coordinator verifies in each case the identity of the user. The e-service authority only has to decide if it trusts the federal coordinator. The delegation believes that the best would be to tie the federal administrator closely to the proposed board in The Swedish Tax Agency. Initially, the committee might have to take on the role as identity certificate provider too, but only as long as there are no viable commercial alternatives. In time, every individual user of e-services will be offered to choose which among many identity certificate providers to use, in accordance with SFS 2008:962. In time, the procurement framework agreements will be cancelled and the market more open for actors others than the banks. Probably will SFS 2000:832 also be altered, despite the delegations reluctance to do so.

To decide upon which method for electronic identification that is suitable for different types of information, Swedish public authorities use Ledningssystem för informationssäkerhet (LIS). LIS is mandatory for public authorities since January 1st 2008. The Swedish Civil Contingencies Agency (MSB) has made recommendation and a model on how to classify information, as a step towards deciding upon which electronic identification method to use. The model itself does not prescribe which technical solution to use. According to one delegation representative, the disparity and lack or coordination between classification of information and electronic identification might potentially cause problems for agencies that handle information in records and e-services. This will have to be taken care of in the future, but for now remains unsolved.

The Swedish Data Inspection Board protects the individual’s privacy in the contemporary information society. They state that methods for electronic identification and authentication should emanate in an assessment of the sensitivity of the personal data handled, the amount and kind of information, and the risks of handling the data. The more sensitive data, the stronger the need of strong authentication. The most sensitive data, of the kind stated in 13 § of The Personal Data Act (SFS 1998:204) and classified information, require very strong methods of authentication. However, nothing is said on which technology to use.

To sum up, electronic identification has been a policy area in its own right in the EU and Sweden. However, it has not had the characteristics of a traditional policy domain, in which there is a clear hierarchy of decisions. There have been a multitude of complicated policy instruments and organizational arrangements involved. Policymaking has been made on several levels, with differing emphasis and formal authority. The nature of policy processes of electronic identification must be seen and understood in the light of its overall complex character.

57 Conversation 2.
59 MSB (2009).
60 Interview 7.
61 Datainspektionen (2008a, 2008b).
Positioning the Study - Theory

This section of the thesis serves two purposes. One, it is positioning my study within a broader framework of public policy theory and research. The general position of this study is within the domain of policy studies, implementation studies and public administration. As such, it operates in a broad research field, in which policy is analyzed from different perspectives and with different emphasis. Two, the section also outlines the theoretical framework with which I will conduct the analysis. As the analysis is intended to say something on the implementation processes on electronic identification in three public administrations, the theories are aimed at that. The analysis is thus not aimed at explaining the entire policy process of electronic identification, but is focused on the implementing organizations. As has been hinted, the argument is that traditional policy analysis and top-down implementation analysis are theoretically inadequate to understand implementation processes on electronic identification. That is why I here expand the policy analytical scope with institutional theory and theory on action in public administrations.

The Essence of Public Policy Analysis

Within the academic domain of public policy analysis the notion of public policy is looked upon and considered as a rightful point of departure for analysis. Many attempts have been made to concisely and briefly present a dictionary definition of policy, most of who has been difficult to come to terms with. Many definitions resolve around policy as decisions, either in singular or as groups or webs of decisions. Others claim that it is a course of action (or even inaction), an orientation, or a stance. One important feature is usually to consider policy instrumentally, in the sense that policy is often deliberately designed to reach a certain end. Hill (2005) makes some amendments to these definitions by emphasizing the dynamic quality of policy. Policy changes over time. Often patterns of action and implementation lead to policy change without deliberate and explicit decisions. This calls for caution in the instrumentality and rationality in policy, since ‘policy needs to be seen as what happens, rather than what politicians say will happen’. Policy couldn’t be seen as something isolated in time and space, since it is constantly subject to re-articulation and re-interpretation. This calls for a process perspective on policy. This view is very much taken up in this thesis. As will be shown in this study, to study policy on electronic identification is essentially to study processes.

Some analysts argue that the policy process could be said to consist of ‘stages’. A stage model of the policy process distinguishes between analytically and conceptually different stages. Each stage has its place in a chronological hierarchy. For example, the policy process is said to start with an identification of problems, then decisions are made by policymakers, and finally implementation is carried out and evaluated. The policy cycle starts all over again. A stage model has its pro’s and con’s. For the sake of analytical clarity, it is often fruitful to approach the policy process by dividing it in stages. In essence, it allows the policy analyst to distinguish between the policy formation stages and the implementation stage, hence analytically establishing a politics-administration dichotomy. In this type of conceptualizations the purposive and instrumentality of public polices are often emphasized. Implementation is always

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63 Hogwood and Gunn (1989).
connected to public policy as a rational response to a predefined problem and its solution; policies aren’t self-executive, but implementation is not expected to alter the intention and content of policy. The ‘public’ in public policy refers to the state as being in ‘top’ of the policy process. In a liberal democracy, policymaking is justified through parliamentary democracy. Implementing public administrations are legitimated through principles of legality and equality, and protection of civil, political and social citizen rights. In this so-called ‘top-down’ approach to public policy, implementation is considered to be legitimate if it translates policy as straightforward as possible.64

Top-down public policy analysis refers to policy-making of a sovereign polity (the state) and implementation by a public administration (the bureaucracy). However, contemporary states aren’t alone in their exercise of politically sanctioned power; neither in policy-making, nor in implementation. Some refer to this development of ‘blurring’ of government and state administrative borders as a process of ‘governance’. To study public policy today is to study the diffusion of the notion of the public itself. If ‘government’ policy processes are characterized as by the traditional, top-down policy-administration dichotomy, then ‘governance’ characterize policy processes that falls outside of the this framework. Governance policy analysis is wary on the basis of political power in society. Governance is a general framework to conceptualize policy processes. A policy process might be described in terms of government or governance, or different degrees thereof.65 There are good reasons for conceptualizing the policy formulation processes of electronic identification as one of governance, to help shed light on its non-conventional character.

**From Policy to Action**

From the governance description electronic identification as a top-down policy process is questioned. What is gained in clarity through a top-down explanation of electronic identification is sacrificed in descriptive accuracy and explanatory stringency. Implementation of policy could instead be seen from the ‘bottom’. The strongest advocates of a bottom-up approach argue that the formal, top-down analysis actually obscures a proper understanding of what is happening in implementation of public policy. Bottom-up analysis often pays much more attention to the non-formal elements of the policy process, and tends to problematize the taken for granted and open up the ‘black box’ of implementation within the top-down approach.66 When the black box is opened its content shows that the neat distinction between the policy formation and the implementation often is nothing but fiction. Implementation is often even a determinant of public policy, and its relation to the other parts of the policy process is more complex than what is often acknowledged. Aspects of administrators and implementing organizations are very important in the overall policy process as well as in public sector performance. Implementation is an activity of translation, redesign, redefinition of policy objectives. There is nothing purely technical about that. Implementation mustn’t be seen as simply something technical – it is an adaptive, iterative and political activity. What a ‘policy’ essentially is will not unfold unless implementation is analyzed.67

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64 Hill and Hupe (2009)
66 Palumbo and Calista (1990a).
67 Palumbo and Calista (1990b).
Barrett and Fudge (1981a) argue that policy and implementation are not constants and analytically distinct. Rather, these concepts as constituting ideal types on each side of a continuum. Policy is never fixed, and action is what implementation is all about. When decisions, legislations and the like, come from the policy formulators to the implementers the policy process continues in both politics and action. The policy-action relationship is a process of interaction and negotiation between those seeking to put policy into effect and those upon whom action depends. Implementation is a process of successive refinement and translation of policy into administrative procedures, but more importantly, it is about ‘getting something done’. Both policy and action are ongoing and intertwined processes. The conventional policy-implementation hierarchy is sometimes an accurate description of the policy process, but very often policy is a response to action. And not all action follows from policy. It is more empirically accurate to refer to implementation analysis, as the examination of how action relates to policy rather than assuming that action always follows policy.

Then, is electronic identification a policy or an administrative question? What if electronic identification is considered to be legitimate to handle in public administrations, without involvement from policymakers? It is possible to detect both high policy aspirations and action imperatives in the policy processes of electronic identification. Analytically, the important question is to question whether action always follows policy or in what way they are intertwined, and how such a policy process could be understood.

**Institutional Analysis of Public Administrations**

Citizens and business meet policies in different ways, often in public service delivery. In all public administrations, street-level bureaucrats actions are the implementation of public policy in everyday life. The street-level bureaucrats exercise discretion in their work, which is needed to handle complex public matters and goal ambiguity. In this sense, implementation is public policy. Public administrations as organizations of discrete power tend to build up their own norms and institutionalized patterns of action, through ongoing negotiation and response in interactive and recursive processes. Thus the focus of policy analysis should be as much about the public administrations as organizations as the policies themselves. In this sense, implementation analysis is about studying the politics of policy. The way actors and agencies perceive and make sense of policy and their own role could help explain organizational action. This calls for a linking of levels of analysis and of synthesizing different theoretical positions on institutions.

Institutional analysis is nothing new in political science, and there are even calls for considering the study of political institutions as the core subject of political science. However, there are good reasons for acknowledging that there is a new way of approaching institutional analysis within policy analysis. This ‘new institutionalism’ is not a single, unified body of theorizing on institutions, but reflects the multi-disciplinary history of institutions. They share the acknowledgement that many components order

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69 Barrett and Fudge (1981b).
70 Lipsky (1980).
71 Barrett and Fudge (1981c); Friedman (2008).
social life have the possibility of becoming institutionalized. This leads Scott (1995) to the following definition of institutions:

Institutions consist of cognitive, normative, and regulative structures that provide stability and meaning to social behavior. Institutions are transported by various carriers – cultures, structures, and routines – and they operate at multiple levels of jurisdiction.74

Organizations are thus not the same as institutions; in fact organizations consist of many different institutions. Institutional analysis could be said to rest on three pillars, called the regulative, normative and cognitive pillars. Each of them tends to emphasize different sets of assumptions of institutions. The regular pillar focuses on formal rules, legal sanction and instrumentality in developing institutional rules. This pillar is perhaps the most familiar to political scientists. Proponents of a new institutionalism within political science have moved towards a more sociologically inclined view on institutions, that is, the second and third pillar. The emphasis is on the second pillar, and thus, for example, March and Olsen could be referred to as normative institutionalists.75

Table 1.1 The Three Pillars of Institutions.76

<table>
<thead>
<tr>
<th>Basis of compliance</th>
<th>Regulative</th>
<th>Normative</th>
<th>Cognitive</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mechanisms</td>
<td>Expedience</td>
<td>Social Obligation</td>
<td>Taken for Granted</td>
</tr>
<tr>
<td>Logic</td>
<td>Coercive</td>
<td>Normative</td>
<td>Mimetic</td>
</tr>
<tr>
<td>Indicators</td>
<td>Instrumentality</td>
<td>Appropriateness</td>
<td>Orthodoxy</td>
</tr>
<tr>
<td>Basis of Legitimacy</td>
<td>Rules, laws, sanctions</td>
<td>Certification, accreditation</td>
<td>Prevalence, isomorphism</td>
</tr>
<tr>
<td></td>
<td>Legally sanctioned</td>
<td>Morally governed</td>
<td>Culturally supported, conceptually correct</td>
</tr>
</tbody>
</table>

For March and Olsen, the argument is that the organization in political life makes a difference. Their theoretical approach should be seen as a response to the behavioral paradigm in political science and policy analysis. Empirically, the outcome of political processes shouldn’t be seen as stemming only from aggregated individual preferences, or from societal factors outside public administrations. Instead, public administrations should themselves be the unit of analysis, since they define the framework in which policy takes place.77

The basic assumption in institutional analysis is that organizations follow rules. ‘Rules’ in this sense means a whole array of elements affecting human behavior, including ‘routines, procedures, conventions, roles, strategies, organizational forms, and

75 Lowndes (2002).
technologies... beliefs, paradigms, codes, cultures, and knowledge’. Some rules are codified, but most aren't. Many are internalized through socialization. Human action is thus governed, or at least guided by, a logic of appropriateness. Political and social institutions define what is normatively appropriate for different people in different situations. Efficiency and effectiveness in organizations come from being able to establish routines, standard operating procedures and division of labor that guide action. However, as is often evident in organizations, not everything could be made a standard operating procedure. Rules are often ambiguous and sometimes contradictory. Rules must be selected and interpreted. But this doesn’t undermine the logic of appropriateness, since this is exactly the mechanism for choosing among different choices. This is particularly important in challenges of novelty in policy. In each moment in time, there is a repertoire of routines within a public administration. The standard organizational response to policy novelty is to apply the old routines to it, a search for a match to the policy within the standardized framework already effective in the organization.

In this analysis, there are good reasons for applying elements from all three institutional pillars to understand the logic of appropriateness in the three authorities. Although each of them rests on quite different assumptions, they each bear with them descriptive and explanatory power to organizational behavior. All three pillars are important in investigation of implementation of electronic identification in public authorities. To answer the second research question, mapping and analysis of which institutions are active in implementation of electronic identification are required.

**Decision processes in Public Administrations**

Organizations, such as public administrations, are expected to take decisions in an instrumentalist manner, in which means are selected to fit to the problems at hand. However, as anyone familiar with the real world of organizations knows, this rational-instrumentalist way of problem solving is not always employed. Public organizations are complex. They are assigned to perform complex tasks and implement complex policies. Many public organizations operate on a variety of preferences and logics of appropriateness, many of which are hard to resolve. Furthermore, because of governance and administrative reform, the boundaries of public administrations are becoming uncertain and changing. Decisions are often growing incrementally, and much decision-making is path dependant. Many critical decisions are seldom or never questioned. These form a root of decisions, to which newer decisions, branches, are related. This organizational process of incremental decision-making could be called a ‘muddling through’ process.

In many public administrations garbage can decision-making is common. This refers to decision-making in which certain choices are looking for problems and solutions are looking for issues to which they could be an answer. It is a very pragmatic activity, and the metaphor of the garbage can illustrates the flows of solutions, problems and people searching for something to do in the organizational process of coming to decisions. There is an uncoupling of problems and choices. However, it is important to remember

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80 Lindblom (1959).
81 Cohen, March, Olsen (1972).
that ‘the drift of decisions within a garbage can situation is not random but occurs in a context of beliefs and norms that produce a systematic bias’.\textsuperscript{82} The logic of appropriateness in a certain organizations and situations affects the flows. From an action perspective, garbage can processes or processes of ‘muddling through’ are not necessary violations of public administrative principles, even through they sound random. They are ways of coping with difficulties and are themselves important administrative principles in fulfilling complex tasks.\textsuperscript{83} Political capabilities are very important for governance in the modern polity. Instead of ‘power over’, as in government perspectives, state power in governance is the same as ‘power to’. The state is becoming a facilitator for development. In such a view the state has a key role to play through building political capacity in public administrations.\textsuperscript{84}

E-government and technologies for electronic identification are answers. They are looking for problems to solve. In this thesis it is argued that garbage can and muddling processes are integral to implementation of electronic identification in public authorities.

**From Public Administration to E-administration**

Public administration discretion is thus needed to handle complex cases and gain administrative capacity for action. Bureaucracies have their legitimate basis in application of universal principles of legality and equal treatment for all citizens. But what is a street-level bureaucrat in the digital age? In e-government development computerization has rendered much traditional street-level bureaucrat discretion obsolete. If computers and different solutions of ICT make handling of cases and even decisions automatically, there is no room for discretion. Instead, street-level bureaucracies are transforming into screen-level, and even system-level bureaucracies. Technology doesn’t leave room for discretion. Instead, technology is the new implementers of policy. Hence, the designers of technology gain a key role in exercise of politically sanctioned power. The new implementers of policy in public administrations, and thus policy makers, are system designers, legislative specialists and technical managers. They are the ones exercising discretion, and the technical choices these people make are decisive for policy output. This turn is highlighted in Table 2, showing the differences between the bureaucracies:

<table>
<thead>
<tr>
<th>Role of ICT</th>
<th>Street-level</th>
<th>Screen-level</th>
<th>System-level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Functions of ICT</td>
<td>Supportive</td>
<td>Leading</td>
<td>Decisive</td>
</tr>
<tr>
<td></td>
<td>Data Registration</td>
<td>Case assessment and virtual assembly line</td>
<td>Execution, control, and external communication</td>
</tr>
<tr>
<td>Human interference with individual</td>
<td>Full</td>
<td>Partial</td>
<td>None</td>
</tr>
</tbody>
</table>

\textsuperscript{82} March and Olsen (1989), p. 29.
\textsuperscript{83} Hood (2002).
\textsuperscript{84} Pierre and Peters (2000).
cases

<table>
<thead>
<tr>
<th>Organizational backbone</th>
<th>Case managers</th>
<th>Production managers</th>
<th>System designers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Organizational boundaries</td>
<td>Strict, with regard to other organizations</td>
<td>Strict, both within and between organizations</td>
<td>Fluid, both within and between organizations</td>
</tr>
<tr>
<td>Legal regime</td>
<td>Open, ample discretion, single legal framework</td>
<td>Detailed, little discretion, single legal framework</td>
<td>Detailed, no executive discretion, exchange between legal domains</td>
</tr>
</tbody>
</table>

The effect of the increasingly ‘virtual bureaucracy’ are characterized by centralization and reduced discretion for individuals. The logic of appropriateness of traditional public administrations is thus shifting. Since technology is very decisive, it is important to study the role of technology in administration. This study should address the institutions and logics of appropriateness that are inscribed in the technology. Institutions and institutionalized patterns of action are carried and inscribed in technology and technical norms. Technical artifacts are the material basis for institutionalized social, political and administrative processes. Technology is seldom thought of as carriers of norms, and as the technology becomes ever more complicated, the inscribed institutions becomes hard to notice. Technology becomes seemingly neutral and taken for granted, but in fact embodies certain values, norms and institutions. New inscriptions blend with old ones and shape possible future directions of technology design. The institutions carried in technology are more comprehensive than what meets the eyes of the designers. This means that the intentionally inscribed institutions by the designers are never deterministic, since users’ perceptions of technology usage tend to exceed that of the designers. In reality, the institutionalized patterns of actions that belong to a certain technology are related to actions in completely different institutions too. Becoming a system-level bureaucracy or an e-administration will not automatically alter the organization in intended direction, since the collision of the technologically inscribed norms meets the norms of public administration in usage perception. Another way to put it is that technology itself is embedded in cognitive, cultural, social, and institutional structures. There is of course a material, objective side of technology, but this is of no practical value until interpreted by knowledgeable agents. This is done in a process of technology enactment. Different individuals and organizations enact technology in different ways, most often in a manner that will fit the already existing institutional structure.

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86 Fountain (2001).
88 Czarniawska (2009).
89 Fountain (2001).
**Analytical Framework – Logic of Argument**

The analysis of electronic identification in the authorities and thus the fulfillment of the aim of the thesis are centered around the following reasoning:

<table>
<thead>
<tr>
<th>Governance</th>
<th>Describes why it is insufficient to view electronic identification as a top-down policy process, and thus not run by a central policymaker.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Action</td>
<td>Describes and explains why policy processes on electronic identification are driven by action and not policy.</td>
</tr>
<tr>
<td>System-level and virtual bureaucracy</td>
<td>Explains why technicians run electronic identification and why their logic of appropriateness is inscribed in technical solutions, and thus affects the patterns on action in the authorities.</td>
</tr>
<tr>
<td>Logic of appropriateness</td>
<td>Explains the actions on electronic identification within the authorities by institutional logic.</td>
</tr>
<tr>
<td>Garbage can and ‘muddling’</td>
<td>Explains why certain solutions for electronic identification get activated in the authorities, and how it ultimately affects policy.</td>
</tr>
</tbody>
</table>
Methodology
This section explains and discusses the methodology of the study, and describes the methods used. It explains what sort of questions the study asks and what kind of answers it may give. This study is founded in an ambition to describe and explain the characteristics and consequences of electronic identification in public administrations. However, it is not possible to express these answers in pure and unambiguous causal terms. This discussion outlines why.

Philosophical and Scientific Foundation
Public administrations are not uniform or consistent units of analysis for scientific study. On an ontological level, public administrations could on one hand be considered to be ‘real’, in the sense that they exist independently of individuals attaining them meaning. They are ‘real’ as their status is manifest in constitutions and their power is embodied in staff and physical resources. Inter-subjectivity on behalf of politicians, administrators and citizens could enhance or undermine the status of public administrations, but it does not alter their nature as being real. Hypothetically, a public administration could be inter-subjectively contested up to a point were it seizes to have power, and therefore dissolve and loses its legitimacy; but if it is not totally ignored, even opposition is an acknowledgement of its existence. On the other hand, there are important interpretative processes going on inside and at the borders of public administrations, which are not meaningful to refer to as ‘real’. These aspects are also being researched in this study. Public administrations are both ‘real’ and dependant on interpretation. On examining public administrations one must be aware of the contested nature of the unit of study. In the case of electronic identification, this means to be responsive to the meaning that is attained to it within the administrations.

Epistemologically, the multifaceted character of public administrations does not provide simple answers as to what could be known of them, or how to know it. An objective aspect of a public administration might be the fact that the Government has presented a new policy on electronic identification that the administration is set to respond to; a subjective aspect is the interpretation and process of making sense of the policy in everyday work. Interpretation in research is usually referred to as hermeneutics. It is the fate of the social science researcher to manage interpretation, with different actors and on different levels. To reach scientific knowledge, questions must be asked. Often the answers to these questions are dependent on informants. Informants make interpretations on their own work, the questions the researcher is asking and on the situations in which the researcher is gathering the data, for example in an interview. The researcher is interpreting a reality that has already been interpreted by actors in it.90 For the researcher in this study it means to take part of the interpretations made by people involved in implementation of electronic identification in public administrations. This affects the possibilities to draw conclusions and analyze the data.

Within implementation research, the top-down and the bottom-up approaches could be said to rest on different assumptions of ontology and epistemology. The top-down approach is usually associated with logical positivism-empiricism in which there is one truth of implementation, waiting to be discovered by systematic research guided by

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analytic and methodological norms from science. This study does not set out to do that. The bottom-up approach is more diverse, but is usually associated with an interpretive perspective on implementation. The line of reasoning is that implementation should not, and indeed could not, be interpreted objectively. Everything we could learn from studying implementation must be seen through some sort of ideological, intentional, and ultimately political, glasses.\textsuperscript{91} So, when studying policy and implementation, what you see is dependant on ‘where you are standing and which way you are looking’.\textsuperscript{92} In this study, this is acknowledged as unavoidable and must thus be embraced and handled.\textsuperscript{93}

**Methodological Approach**

Research should in some sense try to be cumulative.\textsuperscript{94} To be able to give a contribution the researcher needs to get familiar with what is known, and what is not, in the field of study. This study started off with an investigation of the research field on public policy, implementation and e-government. There is a vast literature on public policy and implementation in general, and many case studies are available. There are many lessons to be learned from these studies on the functioning of public administrations. There are quite a few policy or implementation studies done on e-government in general, but hardly any on electronic identification.\textsuperscript{95} Of course, that is strong case for doing such a study. Though, that much is unexplored and unknown of electronic identification in public administrations has importance for the chosen research questions and methodologies.

After getting more acquainted with the research field on public policy, implementation and e-government, an explorative empirical collection of data was started. The next step towards getting any systematic knowledge of electronic identification in public administrations ought to be to pose questions and gain more awareness into the realities at hand of the implementing agencies. The first research question of the study is run by an interest in empirical data. Interviews have been conducted to help to further create a path into deeper understanding of the issues at hand. But the empirical question is not decoupled from the theoretical second research question. They are mutually dependant. What is running this study is an interest in the empirical facts, *in order to* enhance our theoretical understanding of implementation in public administrations.

There has been a continuous and mutual dependence on the theories applied and the empirical data collected, in the sense that they have tentatively guided each other. It is an open methodological approach, in which theories ‘come and go’. The selection criterion has been the appropriateness of the theories in explaining the issues at hand. Therefore, this thesis could be said to employ an abductive approach to theory and empirical data. It has elements of both deduction and induction.\textsuperscript{96} The approach is deductive in the sense that theories not constructed primarily for electronic identification have been applied and tested. However, it is not a testing of theories in the strict sense. It has been more a work of trying to find a matching of available theories with the discovered data. Many theories have been tried and rejected along the way, and been replaced by new ones. In this sense the approach is also inductive, since the

\textsuperscript{91} Fox (1990).
\textsuperscript{92} Barrett and Fudge (1981b), p. 11.
\textsuperscript{93} Fox (1990).
\textsuperscript{94} Esaiasson, Gilljam, Orcarsson, Wångnerud (2004).
\textsuperscript{95} Lips, Taylor, Organ (2010).
\textsuperscript{96} Bryman (2001).
ultimate aim of the study is to enhance the theoretical understanding of electronic identification in public administrations. I call this approach a continual ‘theory search’. The systematic approach of this ‘theory search’ has been to scan the available literature on policy analysis, implementation studies and literature on public administration and e-government in search for plausible explanations of the empirical data at hand. Indeed, a subjective task on the behalf of the researcher. Nevertheless, as electronic identification is an unexplored aspect of public administrations, there are no specific ‘conventional wisdom’ to hang the analysis on. Instead it is a tentative ‘theory search’ within available knowledge that might fit the aim of this thesis.

Research Design

In this study, policy is understood as a process. It doesn’t take for granted the stage typology. The analytical perspective is to study both local implementation praxis and the guiding documents for the authorities. On one hand, the framework and scope that legitimizes this study is quite traditional. Just the simple fact that this study is distinguished as an implementation study and legitimized by its reference to a policy domain points to that. After all, a policy domain of electronic identification is what is under consideration in this analysis; it is not an investigation of the authorities per se. On the other hand, more contemporary problematizations of the implementation of public policy are used to explain the issues of electronic identification at hand. In a sense, my study highlights a clash, and a possible synthesis, between top-down and bottom-up, and between positivist and interpretative approaches within policy analysis.

It may not be possible to resolve the tension between different standpoints on ontology and epistemology in philosophy, but the individual researcher nevertheless has to tackle this ambiguity in practice. One approach is to try to eliminate all subjectivity and ambiguity from the research questions. However, if this were to be done in this study, the study would not be possible to conduct at all. The ambiguities could also be hidden by not mentioning them; that would of course be poor research practice. Instead, a study that embraces and tackles ambiguity has much more prospect for contributing to the cumulated knowledge on the research field at hand. The ambition should be to present an answer, not the answer to the research questions. It is here acknowledged that the analysis being made and the answers provided are but one interpretation among many other possible. Questions such as these should be made visible to inform a better assessment of the research being done.97

This is a case study of implementation of electronic identification in three different organizations. One of the most critical choices in case studies is defining what constitutes the actual ‘case’, what drives the study and what is the unit of analysis. It is also crucial to keep the study within feasible limits. It needs limitations in both empirical scope and theoretical propositions. In this study, the limitations are related to the scope of the policy process to be studied, that is, the guiding principle for limiting the scope is empirical. The study is about electronic identification in Swedish public administrations. Empirically, the interest for a such narrow scope might be limited. However, the cumulative value of this study lies in generalizing the results theoretically.98 By showing that the theories used here are applicable in the situation depicted in this study, the

97 Marsh and Furlong (2002); Marsh and Stoker (2002).
98 Yin (2009).
theories are enhanced and the cumulative understanding of implementation processes and public administrations are improved.

What is the ‘case’? What comes first and act as a point of departure, and what is the problem that needs to be explained? Does electronic identification explain some organizational variable(s) in public administrations? Or, does some organizational variable(s) in public administrations explain variations in implementation of electronic identification? In this study, it is argued that these questions are related and cannot be answered in terms on causality. Yin (2009) has presented a guiding principle for researchers wrestling questions of variables and unit of analysis:

As a general guide, your tentative definition of the unit of analysis (which is the same as the definition of the ‘case’) is related to the way you have defined your initial research questions ...

Selection of the appropriate unit of analysis will start to occur when you accurately specify your primary research questions.99

My research questions are two. The first is a 'how'-question, the second is 'why'. The questions are related to how and why implementation has been organized within the authorities. Thus, the units of analysis are the three public administrations as organizations. Therefore, this is a multiple-case study. It is important to distinguish between what are the actual cases, and what should be considered to be external data, or the context. In this study the borders of the units of analysis are the organizational borders of the authorities. As such, it is a multi-case implementation analysis on organizational basis.

This type of implementation study on organizational basis could be approached with four different 'lenses', each focused on different institutional levels. The lens functions as a theoretical meta-guide, and largely determines what questions are being asked. The lenses are:

1. The human relations lens, focused on individual actors and interpersonal behavior;
2. The political lens, which examines dynamics within and between groups;
3. The structural lens, focused on the organization itself;
4. The system lens, aimed at examining how organizations relate to their surroundings.100

Conventionally, organizational analysis activates the third lens, focused on the organization itself as unit of analysis. This is also the primarily focus for this study, and the employed theories are made to fit that level. However, there is a problem with this design choice. Despite the relative lack of centralized guiding lines of electronic identification in Sweden, public authorities have for a long time been working with it in different ways.101 Furthermore, electronic identification is developing all the time, in a pace hard to keep up with both for analysts and practioneers. Empirically, there are several processes going on simultaneously, which the analyst is able to see through several lenses. It’s the irony of much political science that the units of analysis never

100 Yanow (1990), p. 214.
101 Ilshammar, Bjurström, Grönlund (2005).
come to a halt; the target is always moving. The applied methods and modes of analysis have to be responsive to this. The lenses are distinct only in an analytical sense, and the skilled researcher moves between them when called upon. They should not be competing frames of references, but should rather be parts of a larger picture. In analysis of implementation studies such as this it is important to think of four things, recommended by Fox (1990):

1. Focus on a policy area rather than specific legislations or decisions.
2. Cultivate an awareness of historicity. Implementation never occurs in a political, ideological or institutional vacuum.
3. Try to incorporate longer time spans.
4. Try to incorporate multiple standpoints to triangulate on a policy implementation problematic.102

These recommendations have guided the methodological approach. As has been evident during the data collection and continuing analysis, there are complicated interrelationships between factors inside and outside of the organizations that have consequences for the methodological design choice. The border of the unit of analysis must sometimes be kept open. This discovery is both motivated by empirical findings and theoretical propositions. Empirically, the implementation of electronic identification is multi-faceted, and is not worth exploring within strict organizational borders. At the least, it is not possible to answer the second research question without moving the focus of analysis outside of the organizations, taking into consideration policy history. The politics-administration dichotomy is empirically false in electronic identification. Theoretically, the institutional approach in the study calls for an understanding of what is happening at the borders of the organization and beyond, at least in reference to the second research question. This is not uncommon in case study analysis, and a revisit to unit of analysis is not out of the question when called for;103

Theories need certain kind of input to be able to apply to a body of data. The collected data must fit the unit of analysis that the theory is constructed so say something about. Institutional theories are complicated, in the sense that it calls for an understanding of several analytical levels. Basically, data needs to be seen through all four lenses, albeit with emphasis on the political. Knowledge of this has guided the data collecting to avoid getting too focused on either one of the lenses.

The research design is a reflection on the ambition to combine a forward and a backward mapping of implementation structures of electronic identification.104 Forward mapping of policy corresponds to the top-down model. An investigation into implementation of electronic identification requires such a mapping to achieve a fuller understanding of the policy process at hand. But even more crucial here is to understand the forces of implementation stemming from a bottom-up perspective. A backward mapping of electronic identification pays attention to how the problems and solutions are conceived within the implementing agencies. In addition, the researcher shouldn’t settle only with analyzing the formal structure of implementing agencies. Instead of

102 Fox (1990).
103 Yin (2009).
104 Elmore (1979-1980).
focusing on formal implementation strategies and canals, focus should be on what actually happens. The unit of analysis should be the 'implementation structure'. This structure isn’t necessary either formal or informal. Its importance is decided by its role in implementation. To locate the structure the researcher must ‘snow-ball’ the relevant sample of respondents inside, or outside, the implementing agency. To focus on implementation structures as unit of analysis is to look beyond formal organization and instead pay attention to informal structures within organizations. Methodologically, the researcher has to reconstruct what actors are involved, and with what objectives, strategies and resources. In the case of electronic identification in public administrations, this means being responsive both to how the interviewees themselves define the implementation structure, but also be able to look analytically beyond that. The interviewees tend to focus on and emphasize formal organization. The role of the researcher is to assess the implementation structure from its role in getting something done. It is a discreet research activity, which is sometimes constrained and obstructed by gatekeepers and interviewees.

The Three Agencies as Cases

The Swedish Transport Agency is a newly established public authority with headquarters in Norrköping, Sweden. It’s activity started on the 1st of January 2009. The responsibilities of new authority mainly consist of merging responsibilities of other public authorities. Its core activities are regularization, supervision and authorization within the four modes of transportation road traffic, railway traffic, shipping and air.

The Swedish Migration Board has its headquarter located in Norrköping, Sweden. It is the public authority responsible for ensuring a sustainable migration practice which protects the right to asylum and needs-based labor immigration, as well as facilitating movement across borders and expanding European and international cooperation in migration. The authority will ensure that there is a sufficient and adequate readiness to protect and house all people with a residence permit.

The role of the Swedish Tax Agency is to ensure the financing of the public sector and to facilitate the financial and economic activities of citizens and corporations under the rule of law and with care for the rights of the individual, while preventing and counteracting economic crime. This work is to be efficient and cost-effective to ensure trust and legitimacy for the agency.

Why these specific cases, and why three of them? Why not settle with one authority, that is one case? To start with, when time and resources allow, Yin’s (2009) recommendation is to conduct a multiple-case study. Everything else the same, several cases makes the analysis of the findings more compelling. Besides, choosing multiple cases allows comparisons to be made. Comparison within political science and policy studies has a special status; some even refer to comparative politics as ‘the principal method’ within

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106 Hjern and Hull (1982).
110 Finansdepartementet (2009).
111 Yin (2009).


political science.¹¹² At the least, comparison is useful for advancing theory. Usually nations and national policy regimes are compared, but the same methodology is useful in comparing agencies within one nation. Design of a multiple-case study calls for certain selective principles in choosing which cases to study. Moreover, when the ambition is to make comparisons, the selective principles become even more important.¹¹³ Therefore, for this study, I have made a strategic and purposive selection of three authorities to analyze.

On the surface, and from a traditional top-down perspective, the three authorities seem to have similar and comparable organizational resources for implementation of e-government. That is essentially why all three have been chosen to participate in the recent establishment of The eGovernment Delegation, as examples of authorities that are ‘the biggest and most ICT-intense public authorities’, at the same time that they have the most contact with citizens and business of all public authorities in Sweden.¹¹⁴ From a top-down implementation perspective, their translation of e-government policy should be very similar. From a superficial organizational perspective, much actually seem to be very similar in these authorities. On basis of this, the strategic selection of the authorities in this study has been made on what is usually referred to as a ‘method of difference’.¹¹⁵ This method calls for the cases to be selected because they are very similar, except for the variables that are being analyzed. That is, the three selected authorities have similar status and resources in some important variables, but not in the variables that are analyzed. What are important in this analysis are organizations and organizational capacities for electronic identification. For example, The Swedish Transport Agency is especially interesting from an implementation perspective since it is a newly established authority, formed by merging older authorities with responsibility for one mode of transportation each. As a newly established public authority it faces certain organizational and financial obstacles to implementation of e-government. At the same time, as it is restructuring and merging, it has certain transformational capacities in e-government the others lack.¹¹⁶ The Swedish Migration Board faces some extraordinary difficulties as an implementer of e-service and electronic identification, since it almost exclusively interacts with citizens of other states and people of different lingual and cultural origin. The Swedish Tax Agency is commonly noted to be a forerunner and cutting edge agency in e-government and e-service.¹¹⁷ That makes it valuable to study as case of, from as top-down perspective, implementation success.

The authorities are chosen on the basis of their similarities, but analyzed according to their differences. I will describe and explain the findings, using descriptive and explanatory theory. From these findings it will be possible to draw conclusions when it comes to understanding the capacities for implementation of electronic identification in different public administrations.

¹¹³ Hopkin (2002).
¹¹⁴ SOU (2010:20); Interview 7.
¹¹⁷ See for example Stockholms Handelskammare (2008).
**Applied Methods for Data Collection**

The data collection for this study is carried out using two different methods. For the cause of mapping out the relevant policy context of e-government and electronic identification, document studies of European and national policy documents, investigations, documentations of guiding principles and action programs are conducted. The reason for doing this is a reflection of the methodological approach, and a recognition of the importance of mapping the policy context in order to understand the implementation context. To understand the policy context, policy aspirations of electronic identification need to be laid down. The analyzing principle for this work is to identify the policy ambitions and conceptions expressed and emphasized in the documents. Documents have been partly chosen from a forward mapping perspective, that is, which documents ought to be important from a top-down perspective. Partly, documents have been chosen because actors in the implementation structures have emphasized them. The mapping is not exhaustive, neither is it concentrated on certain policy instruments. The ambition has been to present as accurate a picture as possible of what the policy context consist of, from the perspective of implementing agencies. This does not mean that all presented documents has been relevant to all actors, but that the documents form a background to which the ambitions of the analyzed authorities could be compared.

For data collection in the local context of the agencies interviews with some of the authority's personnel and studies of documents internal to the organizations were conducted. The purpose of these methods is, one hand, to study the strivings of the authority to reach the policy ambitions when it comes to electronic identification, as expressed in the relevant policy plans and regulations. On the other hand, it is to thoroughly look into the action imperative of the agencies, and to investigate organizational capacities, possibilities and obstacles to implementation of electronic identification the three authorities face.

The timing and form of access to the authorities are very critical. Electronic identification is a domain that engages few key executives in each agency, and is not easily entered for outsiders. Personal contact had to be established to access documents and respondents in the authorities. In all three cases, the initial contact was with persons that from an outside perspective seemed like persons with knowledge in the research questions at hand. In the case of The Swedish Transport Agency and The Swedish Tax Agency, this meant the Chief Information Officers within each authority. In the case of The Swedish Migration Board, contact was established with the head project manager of eMigration, which is the main e-government project within the authority. All of these three persons could be said to be expert administrators, and in a sense belonging to the elite of their organizations. The contact with these persons was the entrance to access of the organizations. It was very difficult to get hold on some documents issued from the authorities before the interviewing began. This was partly because of hardships in knowing what would be the relevant documents, and partly because there were no documents to access.

Entrance through the elite administrators was more or less the only way into the organizations, as they were the key gatekeepers. As Gillham (2005) states, an elite administrator is often essential for accessing unpublished documents, or documents that are ‘hidden’ deep within the organization, and maybe more important; to access the
network of relevant persons within the organization.\textsuperscript{118} In this respect, these persons were crucial for the making of the research at all, since they provided access to the organizations.

No matter the inevitability of entrance to the public administrations through elite administrators, it was not without complications. They have guided the research, inasmuch as they have guided the access to interviewees and internal documents. The mapping of the relevant implementation structures has been done much through them. In study, the researcher has picked none of the interviewees but the elite administrators. It is difficult to judge the systematic bias that stems from this, but it nevertheless exists in some form. Perhaps the biggest problem with it is that the strategy to triangulate the data is ruled out.\textsuperscript{119} Besides, elite administrators are powerful. They could be expected to have an agenda on their own, and in some sense be very aware and self-censoring in what they are projecting to the researcher.\textsuperscript{120}

Interviews were conducted in the spring of 2010. Very little research is available on electronic identification, as are official documents. As very little could be known of the status of electronic identification in the authorities before interviewing began, the interviews had to have a very open character, at least initially. They were thematic and tentative, in which an answer to the first research question slowly emerged and were outlined. The complexity and structured character of the interviews increased with time. The skill of the researcher as an interviewer and knowledge of the domain of electronic identification increased incrementally, by meeting the key executives and interacting with them. Interviewing is a craft that must be learned by practice.\textsuperscript{121} The pragmatic approach of the interviews does not sit easy with the ideals of positivistic science. Still, they could not have been done differently, since had they not been done incrementally, no knowledge would have been gained of the issue. The key executives are few and there are no other persons holding this unique competence. Had time been sufficient, a second and third revisit to the interviewees would have been desirable.

In general, the interviews were conducted according to criteria set up by Kvale (1996) and Bryman (2001). However, the above-mentioned difficulties were distorting the ideal preparatory work possible to make. Another difficulty was that the interviewees from The Swedish Transport Agency and The Swedish Migration Board were interviewed individually, and the interviewees from The Swedish Tax Agency were interviewed simultaneously. The results from the individual interviews and the group interview could be expected do differ. It is a discreet task to analyze group interviews, and there are invisible group dynamics with possible effects on what is being said.\textsuperscript{122} However, there are also advantages. The interviewees helped each other on remembering and articulating important standpoint. To conduct the group interview was not a choice of the researcher but a condition for the interview to be done at all. All interviews but the one over telephone were recorded and transilitrated.

In May 2010 the researcher stayed at a conference on e-government in Sweden. Several of he interviewees were present, together with other key executives and policymakers.

\textsuperscript{118}Gillham (2005).
\textsuperscript{119}Bryman (2001).
\textsuperscript{120}Gillham (2005).
\textsuperscript{121}Kvale and Brinkmann (2009).
\textsuperscript{122}Bryman (2001).
Informal conversations were held with some of them, in which some of the gathered data was triangulated and highlighted. Understanding of the totality of policy processes on e-government and electronic identification was also enhanced, since what goes on at that conference is very decisive for the general policy discourse on e-government.

**Analysis of Data and Validity**

Data of different character has been collected. It has been evident in collecting the data that implementation structures and action patterns on electronic identification are not easily researched. The hardship to collect data of course shines through in analysis. The pragmatic ‘theory search’ ends up with theories that fit the empirical data from the viewpoint of the researcher, not necessarily shared by reviewers. The ambition of this analysis is to present a possible interpretation of the collected data. Since the data being interpreted is already interpreted by interviewees there is a double hermeneutics that places certain demands on the researcher. By managing data collection and theory dialectically, the researcher in time develops an analytical awareness of the interpretations being made and how it affects the results of the study. Continual and systematic reading of data and ‘theory search’ leads to an enhanced understanding of what is possible to say about a material. Exactly what kind of analysis and answers this strategy of ‘the hermeneutical circle’ leads to is an open question, subject to debate among researchers. Openness and acceptance of methodological pluralism is therefore crucial.

However, the ambition of this study is to answer a question of ‘why’. Interpretation is not unscientific, but it presents certain difficulties to explanatory ambitions. According to Gilje and Grim (2004) there are three types of explanations: causal explanations, functional explanations and purposive explanations. Causal explanations are often set out to explain certain events, and explanation is made in reference to some criteria that are present before the event to be explained occurs. Causal explanations are using general laws to explain events or behavior. In this study, it is not possible to present unambiguous causal explanations from the collected data. Instead, functional and purposive explanations are more related to what comes both before and after the event that is to be explained. These types of explanations are much more related to normative principles and take into consideration people’s reasons for acting in different ways. It is thus much more useful in explaining data that has been interpreted. Institutional theory provides such explains of why actors behave in certain ways. This becomes visible through examination of actors intensions and the logics of appropriateness in certain settings.

Institutional explanations are however hard to falsify. That means the explanation presented here might be one of several possible. The analysis and results of this study are not possible to evaluate in the traditional positivist sense, that is, in terms of validity and reliability. Since the study is not presenting objective data analyzed in an objective way, validity in the sense of truth is not possible. Instead alternative criteria of the scientific value of the study might be applied, and there are many available. One of the more insightful is Kvale (1989) who claims that to validate research is to check, question

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123 Giddens (1976).
and theorize on it.\textsuperscript{126} And the research should aim for trustworthiness and authenticity as such criteria. This means the research should aim for credibility, transferability, dependability and confirmability.\textsuperscript{127} The research is credible when results are inter-subjectively claimed to be so. The criterion is that other should share the explanation of electronic identification in public administrations. The research is transferable when the results are useful to other researchers. That is, the conclusions don't have to be valid in other contexts, it is an empirical question, but they should be available for others to test and use in other research. Conclusions on electronic identification in public authorities might be more or less transferable to different settings, but the gained insights will provide some sort of input to other research. Dependability is the equivalent to reliability and refers to the need for openness in describing the research. Research must be open as to what lies behind a certain result. Even if all reviewers do not share certain interpretations on electronic identification, public administrations or implementation structures, they must be able to follow the reasoning in the analysis. Obviously, research always has to show that the researcher has good intentions and is driven by scientific rigor and sincerity. Needless to say, this ambition has guided the research effort here presented.

\textsuperscript{126} Kvale (1989).
\textsuperscript{127} Bryman (2001).
Electronic Identification in the Three Authorities

The empirical data is here presented for each of the three authorities. The presentation is fully referenced. However, no analysis is made here, but in the article.

The Swedish Transport Agency

The Swedish Transport Agency is quite new and was formed through merging of other public authorities. When the final report came that suggested the establishment of The Swedish Transport Agency, the ambition of availability 24x7 through e-services was a part of the plan. The emphasis was that the information retrieval for citizens and business was to be simple, effective, and interactive. Provision of information to the authority would only have to be provided once, and the handling of information should be solved back-office, despite organizational boundaries. It should not be the responsibility of the individual to navigate the organizations; this should be the responsibility of the governmental bodies to solve jointly among themselves. It is stated that this is especially important for The Swedish Transport Agency, since it’s activities involve a lot of public interaction through different forms of service and authorization. The official report presents a general belief in streamlining the authority through implementing e-government.\textsuperscript{128}

The major issue of the first years of The Swedish Transport Agency has been financial problems. Last year the financial situation was very poor, mostly due to lack of additional financial resources just to reorganize everything. The first year of the agency has not been so much about developing e-government as ‘putting out fires’ and working just to get by in the new organizational constellation.\textsuperscript{129} There are not much of e-services and electronic identification at all that has been developed since the agency was formed. The hardship will continue several years into the future, so ‘financially and staff wise, the scope for new investments will be very limited’.\textsuperscript{130} Instead, just as last year, much of the e-government work carried out by the former authorities will be continued.

In The Government Approval Document for 2009 The Swedish Transport Agency was given the assignment to present an action plan of how the authority intend to realize the ambitions of the National Action Plan for E-government.\textsuperscript{131} This report states that the experience of working with and the knowledge of e-services are very divergent within the authority. For the public, there are about 40 e-services, and for special clients with direct access there another 45, most of who are of very different character.\textsuperscript{132} For this reason, The Swedish Transport Agency considers e-government development to be best handled by a coordinating intra-agency project. Thus, from 2009 there is an e-government program within The Swedish Transport Agency. The most important part of this program is the e-government project. The project is aimed at presenting an action plan from 2011-2014 for e-government within the authority; plan for the actions needed to develop e-services for drivers and transportation according to SOU 2009:86; and present guidelines and recommendations on general e-government development and safety issues in the agency. It is thus not aimed at delivering technical solutions and do

\textsuperscript{128} SOU (2008:44).
\textsuperscript{129} Interview 1.
\textsuperscript{130} Transportstyrelsen (2010).
\textsuperscript{131} Näringsdepartementet (2008).
\textsuperscript{132} Transportstyrelsen (2009a).
not have its own budget, but instead aims at finding joint strategies and steer other projects related to e-administration and e-services. The goal is to be one of the leading e-government authorities in Sweden in 2014. One important aspect in this is to coordinate the areas in e-government that is put forward as important in the evaluation by the Stockholm Chamber of Commerce. It is also stated as important to have representatives from the agency in relevant boards and networks on e-government, in attempts to find good role models and collaborations. One example of this is that The Swedish Transport Agency has an important role in The eGovernment Delegation as responsible for e-government development on drivers and transportation. The largest task in this is to handle the records on the different modes of transportation. Many different authorities, business and individual citizens have interests in accessing these records. For example, one of the interviewees is engaged in a delegation project to present guidelines for technical interoperability between authorities.

However, The Chief Information Officer (CIO) of the agency is dissatisfied with the extent to which there is a general interagency collaboration on e-services in Sweden. Besides, he doesn’t think that the agency is engaging enough in e-service and electronic identification development with the private sector. The external environment monitoring in the department is becoming increasingly important, and will be aiming at an increased collaboration with private business and enterprises in e-service development. As a way to resolve the isolation, the CIO will himself contact The Swedish Tax Agency and establish a contact, since “The Swedish Tax Agency is the something of an idol’ in e-service development. Another interviewee states that today, interagency collaboration:

... is up to individual good initiatives. Currently, there is no national ICT architect who keeps track of which authorities has which e-services... It is quite random.

As stated, between the departments in the agency, there is a ‘severe imbalance’ in the number and sophistication of e-services: it is generally acknowledged that the road traffic registry has come the farthest in the agency, and the other ones ‘have to catch up’. Basically, this means letting the other departments attach their systems to the ones developed by the road traffic registry, and copy the solutions already in place. The agency should ‘steal with pride’ and ‘avoid inventing the same things all over’.

Right now, the ICT department sees its mission as making sure The Swedish Transport Agency ‘gets good at “e”’, which means that in five years, the agency will be among the top five authorities on e-government development in Sweden. For example, this will increasingly be done by letting ICT architects sit down and make an inventory on all available systems and solution on e-services and electronic identification in the authority as an integral part of planning new projects. This will be done to avoid inventing the same technical solutions several times.

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133 Transportstyrelsen (2010).
134 Transportstyrelsen (2009c).
135 Interview 1.
136 Interview 6.
137 Interview 1.
138 Interview 1.
139 Interview 6.
140 Interview 6.
141 Interview 1.
In terms of ICT development and safety, the ICT department is keen on moving towards increased usage of ICT to render the overall activity of the agency more efficient. The ICT department sometimes makes recommendation on different technical solutions or programs and search for ‘sponsors’ in the other parts of the agency.\footnote{Interview 1.} And as e-government becomes increasingly important, this activity will probably increase. From around the other departments, more involved in core activities of the agency, this push from the ICT department towards e-administration is greeted with differing enthusiasm. The CIO states:

Of course, the safest would be to have no information systems at all in the agency. And this is the attitude of some of the information security managers in the organization... For me, as a newcomer in the world of public authorities, I get a feeling that there is an aversion against doing things as effectively as possible, under a veil of ‘we have to be a functioning agency’. But that is not possible, because we’re expecting to get lesser and lesser financial means, and we’re supposed to do more with less money. In this, ICT is a crucial part. The more of our services we could transform into e-services, the better.\footnote{Interview 6.}

The ICT department and the general e-government project is actively trying to steer citizens and business towards using the e-services that are offered on the website of the agency. The aim is to make the contact, handling and eventually the decision-making automatically. By having as many automatic processes as possible, resources will be saved.\footnote{Transportstyrelsen (2009a); Transportstyrelsen (2010).} The ultimate consequence is that e-service will not be provided on a principle of equality, but more on a principle of profitability. The agency doesn’t consider development of all e-services to the same level of sophistication as a crucial goal.\footnote{Transportstyrelsen (2009a).} The view is rather that:

Every time people call to our customer service, we consider it something of a failure... But I think this is an issue of generation. There are older citizens that don’t even have Internet, and even if they do, they don’t understand the e-services.\footnote{Interview 6.}

One other example of this trend is the e-service for agency inspectors based abroad. They expect as much ICT support in their work as every other co-worker. However, the agency will not provide this, since it is considered too expensive to have ICT support running outside of the Swedish office hours. However, the interviewee is keen on warning for the consequences of pushing the ‘lean’ development too far. The ICT department is actually expecting bigger and more severe threats to their e-services in the future, such as computer break-ins and electronic identity theft. Several cases of this actually happening in the agency’s e-services are under police investigation, because of flaws in authentication processes. The balance is to keep e-services and electronic identification ‘safe enough’.\footnote{Interview 6.} However, what level of safety that is required is decided in the core departments, but the ICT department has some ‘dedicated ICT security consultants’ who helps in deciding upon which authentication methods to use. The ICT department procures and occasionally develops the identification technology. Most solutions for electronic identification are bought from outside, and the traditional framework procurements are used. However, the ICT department is steering towards having as few solutions for electronic identification as possible, which means they are...
selecting some solutions before others. Though, there are financial obstacles to the ICT department to run more of the e-service development. The CIO explains: ‘There are many, many visions. But my problem is that I have very few resources of my own to fulfill them’.\textsuperscript{148}

A big challenge for the entire agency is to get everybody in the agency to work in the same direction in e-service development. Even though the road traffic registry is way ahead the other departments, every department have been working with some e-services, although of very different kinds and on very different scale. And since almost every ICT solution has been developed before The Swedish Transport Agency was formed, the technology is loaded with an organizational spirit from the old organizational borders. Much work is done just to establish a joint definition of what e-government and e-services are and how to work with them in the agency. It is crucial that everybody knows the aims of e-services and electronic identification, to avoid developing activities that doesn’t fit the aims and ‘the specific conditions for The Swedish Transport Agency’.\textsuperscript{149} The problem is that e-government is viewed upon in very different ways within the agency. Shared perspective are said to be crucial, certainly in e-government:

\begin{quote}
E-government postulate that you run projects in the entire agency, and not the within the former authorities. Because they had their own scoop. We have to find strategies for the entire agency.\textsuperscript{150}
\end{quote}

One could take a look at the webpage of The Swedish Transport Agency, and detect that the services are very much structured in line with the merging authorities old organizational borders, and not much at all structured from a user perspective. Both from an organizational and a user perspective on e-service, The Swedish Transport Agency should be ‘though of as one authority’.\textsuperscript{151} The e-government project points to the importance of internal communication in this matter, to reach the intended efficiency and to avoid ‘duplication of work and confusion among the staff’.\textsuperscript{152} And ultimately, there should be a ‘My Page’ for all matters of transportation.\textsuperscript{153}

The divergent nature of information systems employed by the agency is also a big technical issue. The agency has over 200 different systems, many of which are developed exclusively for the different core activities in the agency.\textsuperscript{154} Since they have been developed independently, they differ a lot in code and syntax. Many other systems have been procured, both from framework agreements and individual contractors. This has become a problem for the ICT department, whose personnel is right now struggling with understanding the often unique code that has been developed by many individual programmers without common guidelines:

\begin{quote}
As a result of the fusion that was made when The Swedish Transport Agency was formed a large number of different ICT environments were merged. The agency is currently working with migration of these environments and platforms to one coherent ICT environment for the agency.
\end{quote}

\textsuperscript{148} Interview 6.  
\textsuperscript{149} Interview 2.  
\textsuperscript{150} Interview 1.  
\textsuperscript{151} Transportstyrelsen (2009a), p. 11.  
\textsuperscript{152} Transportstyrelsen (2009b), p. 8.  
\textsuperscript{153} Interview 6.  
\textsuperscript{154} Interview 1.
This works will be carried on for all of 2010 and will limit the possibilities to develop e-government much further in the meantime.\textsuperscript{155}

To develop ‘My Page’ from this is an immense technical challenge. Right now all work is focused on understanding the issues of different applications, program language, disk operating systems and computer databases. Development of user interface in e-service and electronic identification will have to wait.\textsuperscript{156}

In electronic identification, The Swedish Transport Agency has many different solutions in their systems, many of which are unique for one system. The plurality of all these solutions is considered a problem in the long run for the authority:

The amount of different authentication solutions that existent today bring with them very high administrative and operational costs. With a uniform plan for authentication methods in the agency, this cost will diminish.\textsuperscript{157}

There are, for example, PIN codes, eID, authorization codes, license numbers, software certificates issued by former authorities, smartcards and encryptions. Most of these were basically adopted form the technical infrastructure that was developed within the former authority for road traffic. The usage of different methods has different origins and rationales. The shipping office has issued a software certificate of its own. It is a solution that will be exchanged, since ‘we don’t want to handle that ourselves’, but instead want commercial issuers, since it is not part of the agency’s ‘core activity’.\textsuperscript{158} And furthermore, certificates issued by the agency often do not have the default value of commercial web browsers, which may cause problems for users on regular personal computers. To get into the agency intranet, the personnel authenticate themselves through one-time text messages on their mobile phone. Generally speaking, the current methods are considered to be something of ‘a quick-fix’ that is considered ‘ok’.\textsuperscript{159}

According to one interviewee:

We pick up the safety that is built in to the existing e-services, to keep it and develop it, of course. Right now we are acting quite conservative and are changing as little as possible. We don’t want the safety arrangements to collapse, and we are coping as good as possible. So the old authorities are still very helpful.\textsuperscript{160}

But all the unique authentication solutions will have to go eventually. In time, the agency will pack up all the solutions for authentication and handle the ownership over to the main ICT contractor, to be provided back to the authority as a procurement arrangement. How this will be connected to the federative solution proposed by The eGovernment Delegation is not clear yet, but:

... that lies far away in the future... But for now I think we will keep the concept we already have. We will just try to consolidate and make sure the services aren’t too sprawling... It is because of efficiency too, that we don’t want it to sprawl. And it will be easier for the users if we get “single-sign-on” and become more seamless... We want it to feel, as there is one way to access the e-services.\textsuperscript{161}

\textsuperscript{155} Transportstyrelsen (2009a), p. 8.
\textsuperscript{156} Interview 6.
\textsuperscript{157} Transportstyrelsen (2009a), p. 7.
\textsuperscript{158} Interview 1.
\textsuperscript{159} Interview 1.
\textsuperscript{160} Interview 2.
\textsuperscript{161} Interview 1.
A project on electronic identification is also started that will:

... present solutions and basic data for decisions on joint safety solutions on electronic identification and electronic signatures... and present a plan for winding-up of existing solutions.\(^\text{162}\)

However, as stated, the main e-government project will not produce any actual solutions. To find solutions for electronic identification is in fact much up to the ICT department. For one interviewee, this means that the project in somehow ‘stingless’, since there is a severe risk for a slack between strategy and activity.\(^\text{163}\)

The Swedish Transport Agency does classifications of the data they handle, according to LIS. This is typically done in the Strategic Development Department of the agency.\(^\text{164}\)

From this conclusions are drawn on which authentication method to use. However, there are no clear guidelines of how to connect a classification of information to the different modes of authentication, and one interviewee states:

... this is not the complete answer, there are other things to consider too... It is a judgmental process. There are nowhere written, as far as I know, what one-factor or two-factor solutions are good for. It’s up to each authority. We don’t have a unequivocal set of regulations on that in The Swedish Transport Agency... It’s up to the core departments together with the ICT department and jurists and others to find the adequate solution.\(^\text{165}\)

The agency acknowledges that it is has become a problem that many e-services require eID, since to many people eID is an immense hurdle. The agency wishes to have as much e-service users as possible, and identification processes play an important role in reaching this. Many people use e-services as representatives for other agencies, organizations and business, and these of course miss an organizational eID. Today, the possible solution is to get a server certificate to authenticate the organization towards the Swedish Transport Agency. The problem is that there are a multitude of different certificates in use, and each time a safe connection between the agency and an organization is to be established ‘it is a separate selective measure’ that ‘has to be invented all over’.\(^\text{166}\)

One recent incident with electronic identification was that Telia’s eID was down for some time, which made the e-services of The Swedish Transport Agency unavailable. One of the subcontractors of Telia had been sold, which led to an alteration in the root certificate authority (CA) of the eID. This happened unnoticed in The Swedish Transport Agency, but led to malfunctioning login procedures in the e-services of the agency. This was observed when the customer service of the agency was called by angry citizens unable to use the public e-services. On this:

These are the types of dependencies you get... When something happens in the end of the chain it has to handled all the way, so the certificate issuers notify the agencies... You have to trust the actors in each of ends... Because the more public the services are, the more sensitive they get.\(^\text{167}\)

This time the problem concerned individuals. If some problem would arise with certificates in e-services for business and other agencies, the consequences would be

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\(^{163}\)Interview 1.

\(^{164}\)Interview 2.

\(^{165}\)Interview 1.

\(^{166}\)Interview 1.

\(^{167}\)Interview 1.
devastating. The Swedish Motor Vehicle Inspection Company would have to stop all their activity; the police would not be able to check any vehicles; insurance companies couldn’t issue insurances, and so forth. In all of these cases, much remains to be done on electronic identification. However, one of the interviewees doesn’t believe in putting more accountability on the contractors, and make them liable to pay for damages. That would be ‘erroneous thinking’, since in the market ‘money rules’ and no contractors would want to take part in such a business model.\(^{168}\)

**The Swedish Tax Agency**

The Swedish Government is satisfied with how The Swedish Tax Agency has come to employ e-government and e-services. It is generally acknowledged that the website of the agency is well developed and that widespread usage of e-services have led to increased effectiveness and clearness for citizens and business as well as for the agency itself. The Government’s ambition is therefore to expand e-administration development in the agency, and further increase the proportion of tax cases that could be handled electronically.\(^{169}\) The personnel in the ICT and developmental department in The Swedish Tax Agency are well aware of the high expectations that are put on them in e-government development. The agency has had e-services for a long time and is one of the agencies with the most e-services. In their own self-perception, they believe they have a lot of long-standing know-how on development in e-government, e-service and electronic identification. The maturation of e-government in the agency could be traceable in that the ICT and the activity development department are actually the same departments. Development very much equates using more ICT in the activities of the agency.\(^{170}\)

The agency doesn’t have a general e-government program or project. Instead the agency has presented a strategy, which states that ICT should be used offensively, with simple yet stable solutions. The basic motivation should be excellence in service, accessibility and re-utilization. The explicit aim of the internal documents of the agency generally speaking is ‘an open and cooperative e-administration’, and development of more interactive e-services is emphasized. However, the overall purpose of improving e-service is to streamline the administration. It is explicitly stated both the documents and in the interview.\(^{171}\)

The main strategy for fulfilling the high e-government ambitions is to expand and improve self-service and electronic handling of cases, both for citizens and business. The Swedish Tax Agency wish to have e-service as the norm for handling of tax returns and registrations, and paper handling as the exception.\(^{172}\) Especially electronic tax returns have been around for quite a while as an option to paper handling. This year, more people than ever filed their tax return electronically. However, most of the users were electronically identified using a printed code on the cover sheet of the tax return, and not using eID. Nevertheless, the usage of eID increased with 20 % from the previous year.\(^{173}\) The agency is very keen on making people authenticate themselves through eID, because when used, it allows more complicated tax e-service matters to be handled

\(^{168}\) Interview 1.
\(^{169}\) Prop (2009/10:1).
\(^{170}\) Interview 3.
\(^{171}\) Skatteverket (2006); Interview 3.
\(^{172}\) Skatteverket (2010).
\(^{173}\) [www]: www.skatteverket.se.
electronically. This is important because the agency wish to minimize the errors in the filed tax returns. This is achieved in two ways. First, it saves time for the user, since all possible errors are calculated and detected immediately in the digital form. Second, it allows the internal workflow to become fully digitalized. This means that not only the handling is electronic, but also the decisions are becoming fully automated in tax matters.174

But e-government doesn’t develop itself, which became very apparent last year. For 2009, the goal was to develop a portal function, 'My Page', that was said to increase service and lower administrative costs for the agency.175 However, due to financial constraints and slower technical progression than expected, 'My Page' is yet to be put in place. At the same time, business electronic tax returns suffered from technical difficulties in 2009, which caused fewer to submit their returns electronically than predicted.176 The interviewees describe the situation in building an e-administration as going through a lot of ‘fuss and bother, it’s not a smooth track in developing e-administration everywhere’.177 The cost and benefit of building e-services are important, but at the same time there is a strong pressure both externally and internally on the agency as being prominent in e-administration. Nevertheless, a portal function for general e-services for business is now running.178 Within the administrative discourse on e-government success in Sweden, this portal is nominated as one of the best in Sweden 2010.179

From the early days of electronic filing of tax returns, the development was promoted very much by the then General Director of the agency. He sent a signal and a 'very clear message' to the entire organization that this was the most important question for the agency in the years to come. From early on, the agency formed intra-agency alliances towards uniform e-services. The interviewees describe electronic identification as never being an issue on its own, but being run by what e-services had been important to develop. Since electronic tax returns early on was very important, methods for electronic authentication had to be developed to fit this e-service. The data and information handled by The Swedish Tax Agency is mostly classified, according to SFS (2001:181). Because of this, the agency has decided that for almost all e-services, eID is needed as method for authentication. Which authentication method to use when is highly formalized within the agency. Statutes regulate which methods to be used, for example in SKVFS 2005:2 and SKVFS 2004:22. In the early days of e-services, SAMSET was of course of certain significance, because of the key role The Swedish Tax Agency played in it. The agency has since then followed the recommendations in SAMSET in all its statutes on authentication.180

174 Interview 3.
175 Skatteverket (2009a).
176 Skatteverket (2009b).
177 Interview 3.
178 [www]: www.verksamt.se. It is a joint project from The Swedish Tax Agency, The Swedish Companies Registration Office, and The Swedish Agency for Economic and Regional Growth.
180 Interview 3.
According to the interviewees, there has not been much of conflict on electronic identification in the agency. Because of the path set by SAMSET, there has always been a more or less implicit consensus on the continuing usage of eID. They state that:

> Our judgment has been that eID has been the most efficient way to do it... We always went to SAMSET to get the solution... We have never had any opinions on how to realize electronic identification.\(^\text{181}\)

The norm has pretty much from the beginning of electronic tax returns been eID. The ICT and developmental department has promoted eID for a long time:

> It's our recommendation, from the ICT- and developmental department, and you should get an exemption not to follow the norm.\(^\text{182}\)

And today, there is even less of a discussion, since the banks have started to use eID much more frequent in their own e-services. The interviewees believe this makes people much more confident in using eID in their everyday life, and will probably push them towards getting an eID. However, in working with other public agencies with Verksamt.se, a conflict initially arose on whether to use eID or some simpler form of authentication. One of the authorities, whose e-services doesn't involve classified information, was strongly in favor of a PIN code solution, simply to promote as widespread a use as possible of the services. The Swedish Tax Agency promoted eID as the only solution, partly because of the nature of their handled information and partly because of the power of tradition. Different methods for electronic identification for different services in the portal was an option, but from the users' point of view it was decided that it would be more complicated to have different methods than to go for eID from the beginning: 'It would be more user-friendly to build a uniform solution'.\(^\text{183}\)

Internally, there has been a strong consensus towards promotion of eID. But a big issue for the agency has been that there are no eID or suitable modes of electronic identification for business and organizational representatives. It is possible for people to use their personal eID, but that is not an ideal situation, neither for users nor The Swedish Tax Agency. The lack of business eID has in fact inhibited the development towards electronic tax returns for business. Besides, business has often routines based on paper handling, 'which makes it hard to go over to “e”'. The agency wishes to build a better collaboration with suppliers of business software to get them to build business modules that allows for simple electronic handling of tax returns, for example through adding a solution for business eID.\(^\text{184}\)

For individual citizens, there is a solution on the market in the form of eID. But the interviewees wish there were a more widespread usage of it. They think, firstly, that it is too complicated to get one from the issuers; secondly, that it doesn’t feel natural for people to use eID, since they don’t use it in everyday life. eID is perhaps something of a question of convenience and habit. The agency is through development of their e-services searching for a ‘tipping point’, in which the advantages of using the e-services will get more people to actually get and use an eID. Much effort has also been made to inform and educate citizens and business representatives in electronic tax returning with eID, for example through developing a website with general information on eID.

\(^{181}\) Interview 3.
\(^{182}\) Interview 3.
\(^{183}\) Interview 3.
\(^{184}\) Interview 3.
The most important tool has been to influence people’s financial incentives, by offering tax refunds earlier for those who file their tax returns electronically. Once this offer was presented some years ago, the number of electronic tax returns distinctly increased.\textsuperscript{185}

The Swedish tax Agency has always been collaborating with other states, agencies and business representatives in electronic identification. Nationally, they are participating trying to find a joint ICT infrastructure on eID for the entire Swedish public sector. This work is done both to build eID interface uniformity, and to render the overall ICT usage in the public sector more efficient. When SAMSET was working, there were a lot of contacts with private investors, most notably the banks. Once the model came in place some ten years ago, there have been mostly handlings of procurements, which have been the responsibility of other agencies, never The Swedish Tax Agency.\textsuperscript{186}

However, the agency has itself more or less formalized meetings with the issuers of eID. The agency has felt a need for this, since the interface and functionality of eID has become such in important part of the overall citizen experience of the agency’s e-services. E-service with eID is ‘relatively new… because it’s more like doing something together’. On the need on business collaboration:

\begin{quote}
If there is skid in eID then our e-services will skid… It is extremely important for us that is runs smoothly… If it skids in the banks in a period when we are collecting the tax returns The Swedish Tax Agency will not be happy… eID issuers are actors that need to be on their toes when we have our peaks.\textsuperscript{187}
\end{quote}

On the last day of filing tax returns this year, the electronic identification system BankID broke down. It was a question of capacity, which the system couldn’t handle. The Swedish Tax Agency had to extend the deadline with one day, without the usual sanctions against the latecomers.\textsuperscript{188}

The interviewees acknowledge that there is a ‘grey zone’ in the interface of e-service where the user doesn’t really know if he or she is in the banks’ system or in the public e-service. The agency tries to give as much information as possible to the users on this grey zone. There is a limit where both the issuers of eID and the agency need to be able to handle question and simpler errors. From a citizen perspective, people tend to call The Swedish tax Agency when there is something wrong with eID, since they feel that ‘something is wrong with the agency’s e-service’. The interviewees feel that the grey zone has caused many difficulties from a user-friendliness perspective. When up and running between the procurement periods of eID, it has been important to uphold a network for solving problems along the way. There are regular meetings with the issuers, sometimes just with the agency, and sometimes with all the Swedish agencies using eID. On these meetings:

\begin{quote}
But it is not so much about bigger, structural changes in eID. Now when we are entering a bigger structural change it takes a whole different type of developmental effort. They are two different things. One thing has been to uphold the contemporary solution. Now that we are heading towards bigger structural changes and developments, well, then we have to do it differently.
\end{quote}

\textsuperscript{185} Interview 3.
\textsuperscript{186} Interview 3.
\textsuperscript{187} Interview 3.
\textsuperscript{188} [www]: www.nt.se.
The interviewees believe that it takes a mission from the Government to take the development into the new phase. It is too big a task to put on one agency without the required financial support and staff. That is why they believe in the solution proposed by The eGovernment Delegation.  

Internationally, The Swedish tax Agency is the Swedish representative in STORK, and are participating in one of the pilot projects. They believe the Swedish work on electronic identification are benefiting from what is being done in STORK. The Swedish Tax Agency has felt that it is important to participate to build up competence for the future. STORK has had a similar perspective on electronic identification as the one now being proposed by The eGovernment Delegation. The participation in STORK has made the interviewees very aware of where electronic identification was heading in Sweden. The federated solution proposed by The eGovernment Delegation is thus very much in line with what has been going on in The Swedish Tax Agency for some time. Federation is actually something that has been planned for a while:

Much of the basic infrastructure we had for electronic identification through eID was embedded in each e-service. It has made it slow to make big changes. So we saw that we wanted to aim for federations no matter what happened. We saw that strategically, it was the direction the development would move to. We say some three-four years ago that this was to become very important.

The interviewees believe the development the agency itself and The eGovernment Delegation is promoting is the best in the long run. On of the interviewees state that:

I think the long-sightedness of the contemporary solution is non-existent… It is too much work to handle all of these procurements… I believe an eID accessible to all is a crucial infrastructural component for developing ‘e’ in a good way. And in that case the contemporary solution has not been so good for everybody.

What has become quite apparent as the years with eID has passed by is that The Swedish Tax Agency and the model with SAMSET set ten years ago has been decisive in developing the version of eID that is hegemonic today. The interviewees acknowledge that the model for eID was very much developed with big national authorities in mind, and that The Swedish Tax Agency has been very promotional. But they emphasize that since SAMSET there has been no formal responsibility for eID in The Swedish Tax Agency, and no financial means to develop it further: ‘we have been one authority among others to work with question on electronic identification’.

The Swedish Migration Board

In 2006 The Swedish Migration Board started analyzing the conditions for moving towards egovernment and becoming an e-administration, which had been called for from the core activity departments for some time. This analysis stated that egovernment development in the board would be best promoted by an interdepartmental project. It led to the startup of the project eMigration, running from 2008 to the end of 2011. The project aims at developing ‘modern and efficient standard operation procedures and introduce ICT support for these’, with the ultimate goal of becoming one.

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189 Interview 3.
190 Interview 3.
191 Interview 3.
192 Interview 3.
of the best Swedish authorities on e-government.\textsuperscript{193} The project thus has its own budget and develop both routines and technical solutions. The big effect strived for is said to be complete electronic handling of cases. Soon after the establishment of the project, the national action plan came, eventually followed by The eGovernment Delegation and SOU 2009:86. The Swedish Migration board is part of The eGovernment Delegation. However, it was not part initially when the delegation started, ‘surprisingly, because we are a big carrier of e-government’.\textsuperscript{194} The delegation and its work has become a very important input for e-government development in the board. On the policies developed in recent years one interviewee states:

\begin{quote}
I believe we got much support from the action plan and the e-strategy. You could see that you are doing the right things; you adjust and accommodate certain things to be in line with the direction the policy documents point to... I have studied the action plan in detail and have emphasized a number of issues that are related to The Swedish Migration Board... I work very much on translating the good ideas from the policy documents into ideas in The Swedish Migration Board: you feel when something is right.\textsuperscript{195}
\end{quote}

The interviewees from The Swedish Migration Board are from the ICT department. As such, they emphasize that the ICT department should never promote certain solutions or developments in electronic identification. The purpose of eMigration is in one interview said to be ‘to fulfill the vision of the board’.\textsuperscript{196} Another one states:

\begin{quote}
We have a mantra at the ICT department: We never promote. ICT is a resource for the core activity of the board... We don’t go out to buy a solution to install, implement and educate and then say, ‘let’s roll!’... It’s more of interplay, a symbiosis, where the technicians suggest and try on the law. If they get ‘no’ for an answer they go back to their offices and adjust until the solution fits the legal and security requirements.\textsuperscript{197}
\end{quote}

This symbiosis is not easy. As one of the technicians put it during an interval of an interview: ‘we have a problem right now. When it comes to technical solutions for electronic identification, the legal analysts don’t know what is technically possible’. One interviewee mentions another way in which the ICT department has an influence on development of electronic identification, and that is through promoting participation in an e-government evaluation project by the Stockholm Chamber of Commerce.\textsuperscript{198} A suggestion to the CIO of the board is to start a working group to promote the areas put forward as important in this evaluation project.\textsuperscript{199}

The Swedish Migration Board has quite recently begun to develop e-services. Up until today, almost every handling is paper-based, and often files have to be handed in personally to Swedish foreign ministries. It takes a lot of time ‘both for the authority and for the customers’.\textsuperscript{200} The future vision is an expansion of self-service available over the Internet. This will considerably shorten the handling times and make the application

\begin{footnotes}
\item[194] Interview 5.
\item[195] Interview 5.
\item[196] Interview 8.
\item[197] Interview 5.
\item[198] [www]: www.chamber.se.
\item[199] Interview 5.
\item[200] Interview 8.
\end{footnotes}
process easier to complete and follow.\textsuperscript{201} Electronic handling will allow easier cases to be both handled and decided upon fully automated.\textsuperscript{202}

However, The Swedish Migration Board is quite special among all public authorities in Sweden developing e-administration and e-services, since it handles, almost exclusively, foreign citizens. Most of its clients couldn’t use e-services in a straightforward manner to start with, and it’s not easy to provide them with eID either. First, most clients don’t have a national ID number, which disqualifies them for a Swedish eID. Second, many clients have problems in proving their identity, since they bear no identification documents with them, or the ones they have are unreliable for different reasons. Third, all asylum seeker must always appear in person anyway.\textsuperscript{203}

Despite the special difficulties of electronic identification for the clients of the board, an explicit aim is to let clients become e-service users once they have filed their applications. The handling should be able to follow online, and information should only have to be provided once to the authority. This means that clients don’t have to keep track of the responsibilities of different authorities.\textsuperscript{204} One of the interviewees is involved in an eGovernment Delegation project and is developing a guideline for information sharing between public authorities. Today, there is no clear way of how to share information, which in the end becomes a trouble for the clients. If information is to be shared, it is dependant on individual authority and business personnel to find out where the information is, and then ‘track down the right contact person’. In developing the guideline they also have to consider a future where Swedish public authorities will probably have to open up their records to private companies searching for business opportunities, in which case private actors, collecting data from public records, will provide e-services. However, for The Swedish Migration Board, most of the handled information is classified. Other public authorities handle more public data. There is a disparity in views on building the infrastructure on electronic identification, where The Swedish Migration Board is one of the agencies promoting a stronger authentication. For example, one new e-service the board has launched is the possibility to apply for Swedish citizenship online. Digital forms are filled online, and when the ‘send’-button is pressed, there is an automatic checking of the person’s information in other public records, such as the records of the police and The Swedish Security Service. These sorts of interagency back-office arrangements are becoming increasingly important for The Swedish Migration Board.\textsuperscript{205} Besides what is being done in The eGovernment Delegation, representatives from The Swedish Migration Board are collaborating with, amongst others, Swedish banks issuing eID, The Swedish Tax Agency and The Swedish Data Inspection Board. This collaboration take place at different organizational levels, many of which are technical and operational.\textsuperscript{206}

Nevertheless, to be able to use any e-service at all, clients need some form of electronic identification. The upcoming implementations of e-services are targeted at clients that are able to identify themselves to the board. This is, for example, e-services for students.

\textsuperscript{201} Migrationsverket (2009b).
\textsuperscript{202} Migrationsverket (2008).
\textsuperscript{203} Interview 8.
\textsuperscript{204} Migrationsverket (2008).
\textsuperscript{205} Interview 4.
\textsuperscript{206} Interview 5 and 8.
But Swedish eID is most often is not an option for the board’s clients today. One of the interviewees says:

We could have easily developed an eID of our own, but we didn’t want to do that. We want them to have an eID that could be used for other e-services as well.\textsuperscript{207}

From 2011, all asylum seekers must have a residence permit card. This card will be an equivalent to a normal ID card, but with biometric data stored on it. It is up to each government to provide this card with an electronic identity too.\textsuperscript{208} From the viewpoint of eMigration, this card:

... is a possible solution to enable more people to use our e-services, but also to enable people to benefit from the development of e-administration in the rest of society.\textsuperscript{209}

The VIS-project and eMigration has together performed a pilot study of implementation of the card, but what will actually become of this is yet unknown.\textsuperscript{210} Interestingly, electronic identification in the VIS-project is in much more detail controlled from the EU. Within The Swedish Migration Board, however, the technical solutions are being designed in very similar organizational processes within the ICT department. But the compulsory and controlled nature of VIS makes it much more imperative for the board to develop according to a deadline.\textsuperscript{211}

On deciding which methods of electronic identification to use, the board has worked with classification of information, which has led to the need of a reference model. The reference model should function as a link between classes of information and which method for electronic identification that is suitable to different types of information, which in turn leads to a system security analysis. The reference model is under construction and is currently being processed. It is considered an important instrument in achieving an efficient handling of electronic identification:

I truly believe that we need a number of steering documents that is there over time, and supports everybody involved in what to do. Though, these documents are not static, they are dynamic. It means that if we experience any shortages, then we calibrate the documents. And they are being revisited, subject to follow-ups.\textsuperscript{212}

\textsuperscript{207} Interview 8.
\textsuperscript{209} Interview 5.
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**Conversations**


Public E-services and Electronic Identification –

A Comparative Implementation Study of Swedish Public Authorities

This article presents an implementation study on the handling of electronic identification in three public authorities in Sweden. Electronic identification is a complex but very topical policy domain, largely tied to the general policy aspirations of e-government development. Theories on policy action, logic of appropriateness, garbage cans, and the dialectics of institutions and technology are used. The result highlights that the policy process of electronic identification in the three studied authorities could not be adequately explained from a traditional policy-implementation dichotomy. The action imperative to develop e-services is very strong and explains why and how electronic identification has been developed within the three authorities. The three authorities have very different institutional capacity to implement e-services with electronic identification. The available technology on electronic identification is inscribed with certain logics of appropriateness, that doesn’t sit equally easy with the administrative logics of appropriateness in all three authorities.

Introduction

Sweden is usually high ranked in international surveys of e-government development (See UN 2010). However, until recently there have been no united policy ambitions for implementation of e-government in Swedish public authorities. In 2008, the Swedish government for the first time presented a comprehensive and gathered policy for e-government, and in 2009 started a committee, The eGovernment Delegation, for coordinating e-government in the public administration (Finansdepartementet 2008; Dir 2009:19). The ambition is a rapid, yet unified development of e-government. In the fall of 2009, under the Swedish presidency of the EU, a ministerial declaration of the ambitions of e-government was presented (EU 2009). E-government has clearly become both an important public policy issue and a key source of change in public administrations in recent years.

One critical element in e-government and e-service development is electronic identification, or digital identity management (IDM) (Birch 2007; Lips, Taylor, Organ 2010). Electronic identification is used for identification of public e-service users through ICT, and it is in essence and function the digital equivalent to an identity card (E-nämnden 04:02). Identification processes are critical for the functioning and legitimacy of public e-services and work as an integral part of the interface of public administrations. In the international policy discourse on e-government, electronic identification is considered important and has been given much attention recently (The European Commission 2005; OECD 2009). One representative of The eGovernment
Delegation witness that electronic identification is considered to be the most important aspect of e-government development in Sweden right now. However, there has not been much research done on electronic identification in public administrations, despite its central role in e-service development. There is a lack of empirical as well as theoretical understanding of it: What are the technological, organizational and policy imperatives for development of electronic identification in public administrations? What are the policy processes of electronic identification? What are the consequences of increased use of electronic identification methods for public administrations?

This article presents a comparative implementation study of electronic identification in three Swedish public authorities, namely The Swedish Transport Agency, The Swedish Tax Agency, and The Swedish Migration Board. The aim of the study is to analyze how these public administrations handle and develop electronic identification in their e-services. Two research questions are addressed: How is the work with electronic identification organized and implemented within the three authorities, when it comes to strategies and action? And; how could this be explained? This article sets out to present a policy analysis perspective on electronic identification that resonates within a broader context of understanding e-government policy processes. The main contribution of this article to public administration research is to highlight the importance of institutional capacity and the ability to activate organizational action in e-government implementation.

The article first outlines the policy context of e-government and electronic identification. The empirical data is presented in the second section. Third, the theories are presented and the data analyzed. The article ends with conclusions and further implications.

**E-government - the policy context of electronic identification**

Why has e-government become such an important issue for governments all around the world? Traditional public sector service was standardized and supplied in a certain form and on certain times, and that suited most people. In the information age there is a spatial and temporal flexibilization of peoples’ lives (Beck 1992). Contemporary citizens require easier, more rapid, and more integrated and responsive service delivery from their governments. In Sweden, most governmental services are still performed by public agencies. The public sector is pushed to adapt to a more business-like ways of organization to improve customer-friendliness and efficiency. This has mainly been expressed within the policy doctrine of New Public Management (NPM) (Hood 1991). Much of the same political rhetoric is found in e-government. However, Analysis of policy processes of NPM and e-government mustn’t be equated. There are similarities, but e-government is not another NPM project (Homburg and Beckers 2005). As NPM has lost some of its persuasiveness and is on rollback in many states, e-government is moving forward at an ever-increasing rate (Dunleavy, Margetts, Bostow, Tinkler 2006).

E-government is not NPM, but is considered to affect the functions, legitimacy and political nature of public administrations. The expectations on e-government from policy-makers around the world are enormous. E-government is becoming an integral component in all public sector reform, and is now the norm for public sector reform, or ‘the way to “do” modern government’ (Rawal, Koutrakou, Nixon 2010, p. xxiii). There are expectation on ICT to support efficiency and transformational public sector change. Despite its complex character, oversimplifications on the instrumentality of ICT in public organizations could be seen in much comment on e-government (Foley and Alfonso
In either case, e-government potentially alters the very nature of governmental institutional frameworks (Contini & Lanzara 2009).

In Sweden, policy-making on ICT in public administrations has traditionally been framed in terms of rationalization. From the 1980s onward, the Swedish policy making discourse on e-government has been public savings and economic competitive terms (Ilshammar, Bjurström, Grönlund 2005). The action plan from 2008 was more comprehensive than ever, but presented a simplistic technological imperative that did not take into account the complex interaction of technology and organization (Melin 2009). The step from policy aspirations in the document to public administrative practice was perceived too big. Therefore a committee was started in 2009 to unite the national management of e-government, called The eGovernment Delegation (Dir 2009:19). In the delegation’s first report the public savings-discourse is still strong. It has been accompanied by a framing of the issues of e-government within the broader context of establishing a competitive national and European economy. The aim is to establish a ‘third-generation’ e-administration, in which public e-services are ‘as simple as possible for as many as possible’ (SOU 2009:86, p. 35).

**Electronic identification – a critical component of e-government**

One manifestation of the emphasis on electronic identification in The EU is the governance network of Secure Identity Across Borders Linked (STORK). STORK aims at establishing a European interoperability platform for electronic identification. EU Directives have also been issued with bearing on electronic identification in public administrations. The most important is the directive on a community framework for electronic signatures (Directive 1999/93/EC). Essentially, it states that every member state of the EU has the obligation to implement a technical and legal infrastructure of electronic identification. In the directive, electronic signature refers to many forms of signatures communicated electronically; from using a PIN-code to log on to public e-services, to more advanced and sophisticated forms of signing electronic contracts. The directive mainly refers to electronic signatures based on a so-called Public Key Infrastructure (PKI). In this system a trusted third party issues a software certificate tied to a specific e-service user. Each time an e-service is used, the authority providing the e-service checks the identity of the user through the certificate.

The Swedish implementation of Directive 1999/93/EC is The Qualified Electronic Signatures Act (SFS 2000:832). The making of this act coincided with the promotion by The Swedish Agency for Public Management of a uniform format for identification certificates to be used for public e-services (Statskontoret 2000:40). From here on a particular form of electronic identification, e-legitimation (here translated with eID), gained importance and came to be the dominant mode of electronic identification in Sweden. It is a PKI certificate issued mainly by authorized Swedish banks. eID corresponds to the advanced electronic identification method in EU Directive 1999/93/EC.

The Swedish Tax Agency was in 2000 appointed to coordinate and promote electronic identification in Sweden (Riksskatteverket 2003). This was done in an interagency collaboration called SAMSET. The ambition was that electronic identification in public authorities should more or less always follow the path initially set out by SAMSET (E-nämnden 2005). Since 2001, eID issuers have provided technical solutions for eID in public procurement frameworks. However, this model has been criticized. Several
reports point to technical issues, problems of accessing eID, and lack of transparency and sustainability (Verva 2008:12; Riksrevisionen 2009:19). Therefore, The eGovernment Delegation calls for a new infrastructure for electronic identification, with the goal to make it simpler and more accessible. The proposed strategy is to establish a board within The Swedish Tax Agency assigned to coordinate Swedish public authorities handling of electronic identification. The affairs of this board should be regulated in law. It will issue statutes on eID, make centralized procurements and agreements with contractors, and set norms and standards on electronic identification. Technically and organizationally, the delegation proposes a federal stance on electronic identifications, in which a centralized federal coordinator handles identity checks. This system is promoted internationally by STORK (SOU 2009:86).

To decide upon which method for electronic identification that is suitable for different types of data, Swedish public authorities get guidance in the mandatory Ledningssystem för informationssäkerhet (LIS). LIS recommends how to classify information, as a step towards deciding upon which electronic identification method to use, but the model itself does not prescribe which technical solutions to use (MSB 2009). The Swedish Data Inspection Board states that methods for electronic identification and authentication should emanate in an assessment of the sensitivity of the personal data handled, the amount and kind of information, and the risks of handling the data (Datainspektionen 2008a, 2008b).

To sum up, electronic identification has been a policy area in its own right, though closely tied to other e-government projects. On one hand, it is an administrative issue to tackle in building e-services. On the other hand, it is a critical component of e-government and thus lies in the interest of politicians, the public, and the entire public sector. However, it has not had the characteristics of a traditional policy domain, in which there is a clear hierarchy of decisions. There have been a multitude of complicated policy instruments and organizational arrangements involved. Policymaking has been made on several levels, with differing emphasis and formal authority. The steering of e-government in general and electronic identification in particular has been comparatively weak and ambiguous. Nevertheless, public administrations are expected to perform. And obviously, according to international surveys, something has been done right. What have been done on electronic identification in the authorities? What are the strategies and principles of this work? In what ways are the authorities differing? To these questions the article now turns.

**Electronic identification in the three studied authorities**

The Swedish Transport Agency is a newly established public authority, started on the 1st of January 2009. The responsibilities of new authority mainly consist of merging responsibilities of other public authorities. Its core activities are regularization, supervision and authorization within the four modes of transportation; road traffic, railway traffic, shipping and air. The Swedish Transport Agency is responsible for e-government development on drivers and transportation in The eGovernment Delegation. The Swedish Migration Board is the public authority responsible for ensuring a sustainable migration practice which protects the right to asylum and needs-based labor immigration, as well as facilitating movement across borders and expanding European and international cooperation in migration. The role of the Swedish Tax Agency is to ensure the financing of the public sector, facilitate the financial and economic activities of citizens and corporations, while preventing and counteracting
economic crime. Within The eGovernment Delegation, The Swedish Tax Agency is responsible for development in the domain of individuals.

On the surface, and from a traditional top-down perspective, these three authorities seem to have similar and comparable organizational resources for implementation of electronic identification. That is essentially why all three have been chosen to participate in the recent establishment of The eGovernment Delegation, as examples of authorities that are ‘the biggest and most ICT-intense public authorities’, at the same time that they have the most contact with citizens and business of all public authorities in Sweden (SOU 2010:20). These authorities are chosen on the basis of their similarities, but analyzed according to their differences.

Organizational capacities and scope for action on e-administration

As a merged authority, the experience and knowledge of e-services within The Swedish Transport Agency are very divergent. Almost all employed ICT systems has been developed before The Swedish Transport Agency was formed. The big challenge in developing an e-administration has been to get everybody in the agency to work in the same direction. Much work is needed just to establish a joint definition of what e-government and e-services are and how to work with them in the agency. The agency has over 200 systems, many of which are developed exclusively for the different core activities of the agency. Since they have been developed independently, they differ a lot in code and syntax. The first year of the agency has mainly been about ‘putting out fires’ and working just to get by with these different solutions. An entire e-government project has been started within The Swedish Transport Agency. The project is not aimed at delivering technical solutions and do not have its own budget, but instead aims at finding joint strategies and steer other projects related to e-administration, e-service and electronic identification. One interviewee claims that the project is somewhat ‘stingless’, since there is a severe risk for a slack between strategy and action.

The Swedish Government is satisfied with how The Swedish Tax Agency has come to develop its e-administration and e-services. The agency has had e-services for a long time and is one of the agencies with the most e-services, and it is generally acknowledged that widespread usage of e-services have led to increased effectiveness and clarity for citizens and business as well as for the agency itself. Development very much equates using more ICT in the agency. In their own self-perception, the interviewees believe they have a lot of long-standing know-how on development in e-government, e-service and electronic identification. The agency doesn’t have a general e-government program or project. Instead the agency has presented a strategy, which states that ICT should be used offensively. The basic motivation should be excellence in service, accessibility and re-utilization. The ambition is therefore to expand e-administration development in the agency, and further increase the proportion of cases that could be handled electronically.

In 2006 The Swedish Migration Board started analyzing the conditions for moving towards becoming an e-administration. It had been called for from the core activity departments for some time. The board has thus just recently begun to develop e-services. The national action plan and The eGovernment Delegation report have been supportive for the board, since from the policies ‘you could see that you are doing the right things; you adjust and accommodate certain things to be in line with the direction the policy documents point to’. From 2008 to 2011, an e-government project is running
in The Swedish Migration Board. The project aims at developing ‘modern and efficient standard operation procedures and introduce ICT support for these’, with the ultimate goal of becoming one of the best Swedish authorities on e-government. The project has its own budget and develop both routines and technical solutions. The big effect strived for is said to be expansion of self-service over the Internet and completely electronic handling of cases and occasionally automated decision-making.

**Different authentication methods in the authorities**

The Swedish Transport Agency has many different solutions for electronic identification in their systems, many of which are unique for one system. There are, for example, PIN codes, eID, authorization codes, license numbers, software certificates issued by the merged authorities, and smartcards. Most of these are adopted from the technical infrastructure in the former authorities. However, the plurality of solutions is considered a problem in the long run for the authority, since ‘the amount of different authentication solutions that exist today bring with them very high administrative and operational costs’. Current solutions for electronic identification in the authority are considered to be something of ‘a quick-fix’ that is considered ‘ok for now’. In time, the agency doesn’t want to handle any electronic identification itself, but instead outsource it to the main ICT contractor. How this will be connected to the federative solution proposed by The eGovernment Delegation is not clear yet. For now, the important thing is to keep the systems running and ‘try to consolidate and make sure the e-services aren’t too sprawling’.

From the early days of electronic filing of tax returns, The Swedish tax Agency formed intra-agency alliances towards uniform e-services. Electronic identification was never an issue on its own, but is described by the interviewees as being run by what e-services had been important to develop. Since electronic tax returns early on was very important, methods for electronic authentication had to be developed to fit this e-service, and eID was considered the most ‘efficient’ one. However, most of the people filing tax returns this year were electronically identified using a printed code on the cover sheet of the tax return, and not using eID. The agency is very keen to make people authenticate themselves through eID, because it allows more complicated tax e-service matters to be handled electronically. This is important because the agency wish to minimize the errors in the filed tax returns. First, it saves time for the user, since all possible errors are calculated and detected immediately in the digital form. Second, it allows the internal workflow to become fully digitalized. This means that not only the handling is electronic, but also the decisions are becoming fully automated in tax matters. The agency is actively searching for a ‘tipping point’ in their e-services, in which the advantages of using the e-services will get more people to actually get and use eID. Much effort has also been made to inform and educate citizens and business representatives in electronic tax returning with eID. The most important tool has been to influence people’s financial incentives, by offering tax refunds earlier for those who file their tax returns electronically. Once this offer was presented some years ago, the number of electronic tax returns distinctly increased.

A big issue for the The Swedish Transport agency and The Swedish tax Agency has been the lack of eID or suitable modes of electronic identification for business and organizational representatives. In The Swedish Tax Agency, the lack of business eID has in fact inhibited the development towards electronic tax returns for business. The
contemporary solution for authentication of organizational representatives in The Swedish Transport Agency is to get organizations to buy a server certificate from a commercial contractor. The problem is that there are a multitude of different certificates in use, and each time a secure connection between the agency and an organization is to be established the solution ‘has to be invented all over’.

The Swedish Migration Board is quite unique among all public authorities in Sweden developing e-services, since it handles, almost exclusively, cases concerning foreign citizens. Most of its clients can’t use e-services in a straightforward manner. First, most clients don’t have a Swedish ID number, which disqualifies them for a Swedish eID. Second, many clients have problems in proving their identity, since they bear no identification documents with them, or the ones they have are unreliable for different reasons. Third, asylum seeker must always appear in person anyway. The first e-services of The Swedish Migration Board, now running, are targeted at clients that are able to identify themselves, for example, foreign students applying for student visa. The board aims at letting all clients become e-service users once they have filed their applications. The handling should be able to follow online, and information should only have to be provided once to the authority. Nevertheless, to be able to use any e-service at all, clients need some form of electronic identification. But Swedish eID is not an option for most of the board’s clients today, and the board does not wish to issue special eIDs just for this cause, since ‘we want them to have an eID that could be used for other public and business e-services as well’. A possible solution is to use the residence permit card. From 2011, all asylum seekers in The EU must have a residence permit card (Council Regulation (EC) No 380/2008). It is up to each government to provide this card with an electronic identity too. The board promotes this.

How are different authentication methods decided upon?

There are no clear guidelines in the The Swedish Transport Agency on how to connect a classification of information to the different modes of authentication. One interviewee states that it is ‘a judgmental process’ that leads to decisions upon different technical solutions. Up until now, The Swedish Migration Board has not had e-services. As these are being developed there is a need of a reference model to be a link between classes of information and which method for electronic identification that is suitable. The reference model and related internal documents are dynamic and calibrated when needed. It is currently being constructed by one of the interviewees.

The Swedish Tax Agency has decided that for almost all e-services, eID is needed as method for authentication. Which authentication method to use when is highly formalized within the agency, and agency statutes regulate which method to be used when. From the early days of electronic identification, SAMSET was decisive for development in the agency, because of the key role the agency played in it. The agency has since then followed the recommendations in SAMSET in all statutes on electronic identification. According to the interviewees, there has not been much of conflict on electronic identification in the agency. Because of the path set by SAMSET, there has always been a more or less implicit consensus on the norm of continuing usage of eID. The ICT and development department has actively promoted eID for a long time.

However, on working with Verksamt.se (the Swedish implementation of the Directive 2006/123/EC) an inter-agency conflict initially arose on whether to use eID or some simpler form of authentication. Some of the authorities, whose e-services doesn’t
Involvement of classified information was strongly in favor of a PIN code solution, simply to promote as widespread a use as possible of the e-services offered by the portal. The Swedish Tax Agency promoted eID as the only solution, partly because of the nature of the information handled and partly because of the ‘power of tradition’. From a user perspective it was decided that it would be more complicated to have different methods than to go for eID from the beginning. The final decision was to use only eID. However, most of the interviewees acknowledge that it has become a problem that many e-services require eID. Authentication processes play an important role in facilitating e-service development, and today eID is a hurdle. All interviewees believe the development The eGovernment Delegation is promoting is the best in the long run.

Interagency back-office technical arrangements are becoming increasingly important for all three authorities. One new e-service The Swedish Migration Board has launched is the possibility to apply for Swedish citizenship online. Digital forms are filled online, and when the ‘send’-button is pushed, there is an automatic checking of the person’s information in other public records, such as the records of the police and The Swedish Security Service. However, today there is no ‘right’ way technically to share information. If information is to be shared, it is dependant on individual authority and business personnel to find out where the information is, and then ‘track down the right contact person’. For The Swedish Migration Board, most of the handled information is classified. Other public authorities handle more public data. This disparity in needs of electronic identification calls for attention. Several of the agency ICT architects interviewed in this study are engaged in The eGovernment Delegation to develop frameworks for interagency data sharing.

**What are the roles of technical personnel?**

The ICT department in The Swedish Transport Agency sees its mission as making sure the agency ‘gets good at “e”’. The ICT department sometimes makes recommendation on different technical solutions or programs and search for ‘sponsors’ in the other parts of the agency. As e-government becomes more and more important, this will probably increase. ICT architects will make inventories and recommendations on all available systems and solution on e-services and electronic identification in the authority as an integral part of planning new projects. The ICT department and the general e-government project is actively trying to steer citizens and business towards using the e-services that are offered on the website of the agency. The aim is to make the contact, handling and, eventually, decision-making automatically. What level of safety is required in these e-services is decided in the core departments, but the ICT department has some ‘dedicated ICT security consultants’ who helps in deciding upon which authentication methods to use. The ICT department gets most solutions for electronic identification from the framework procurements and occasionally develops solutions. The ICT department is actively steering towards having as few solutions for electronic identification as possible, which means they are selecting some solutions before others.

The interviewees from The Swedish Migration Board emphasize that the ICT department has a mantra of ‘never promoting’ certain solutions or developments in e-administration. Instead it’s an ‘interplay, a symbiosis, where the technicians suggest and try on the law’. This symbiosis is not easy. As one of the technicians put it: ‘The legal analysts don’t know what is technically possible’. As stated, this has not been an issue in The Swedish Tax Agency. Another possible influence of technicians it that the ICT
department of The Swedish Migration Board and The Swedish Transport Agency has emphasized the importance of performing well in an e-government evaluation project by the Stockholm Chamber of Commerce.

Interactions and dependencies on other agencies and business

The Swedish tax Agency has always been collaborating with other states, agencies and business representatives on electronic identification. When SAMSET was active, there was much contact with the banks. Once the business model of eID came in place some ten years ago, there have been mostly handlings of procurement frameworks, which have never been the responsibility of The Swedish Tax Agency. The agency has felt a need for more or less formalized meetings with the issuers of eID, since the interface and functionality of eID has become such an important part of the overall citizen experience of the agency’s e-services. E-service with eID is more or less ‘like doing something together’ with the banks. It must run smoothly all the way, and the eID issuers have to be ‘on their toes when we have our peaks’. On the last day of filing tax returns this year, the electronic identification system BankID broke down due to insufficient capacity. The agency extended the deadline for filing tax returns with one day, without sanctioning the latecomers. One recent incident with The Swedish Transport Agency was that one issuer’s eID was down for some time. One of the subcontractors of the issuer had been sold, which led to an alteration in the root certificate authority (CA). This happened unnoticed to The Swedish Transport Agency, but led to malfunctioning login procedures in the e-services of the agency. This was observed when the customer service of the agency was called by upset citizens unable to use the public e-services.

Many of the interviewees in all three agencies acknowledge that there is a ‘grey zone’ in the interface of e-service where the user doesn’t really know if he or she is in the banks’ system or in the public e-service system. There is a boundary area where both the issuers of eID and the agency need to be able to handle user questions and simpler errors. From a citizen perspective, people tend to call the agencies when there is something wrong with eID, since they feel that ‘something is wrong with the agencies e-service’. The interviewees feel that the grey zone has caused many difficulties from a user-friendliness perspective. When up and running between the procurement periods of eID, it has been important to uphold a network for solving problems along the way. There are regular meetings with the issuers, sometimes with each of the agencies at a time, and sometimes with all the Swedish agencies using eID.

Internationally, The Swedish tax Agency is the Swedish representative in STORK, and is taking part in one of the pilot projects. The interviewees of the agency believe it is important to participate to build up competence for the future. The approach to electronic identification now being proposed by The eGovernment Delegation has been used in STORK. The participation in STORK made The Swedish tax Agency very aware of where electronic identification was heading in Sweden, and has thus been prepared in about three or four years time. The Swedish Transport Agency also believes it is important to have representatives from the agency in relevant boards and networks on e-government, in attempts to find good role models and collaborations. Today, the ICT department is dissatisfied with the extent to which there is a general interagency collaboration and engagement with private actors on e-services in Sweden. One
interviewee states that interagency collaboration ‘is up to individual good initiatives... It is quite random’.

**Analysis of electronic identification in the three agencies**

Public policy is dynamic and changes over time (Hill 2005). Patterns of action and implementation lead to policy being changed without deliberate and explicit decisions being made on the ‘top’ of the policy chain. Attention needs to be paid to the non-formal elements of the policy process and the ‘black box’ of implementation must be opened. With the black box open its content shows that the neat theoretical distinction between policy formation and implementation is often nothing but fiction. Implementation is nothing purely technical or managerial – it is an adaptive, iterative and political activity that affects policy (Palumbo and Calista 1990). Instead of a policy-administration dichotomy, policy and implementation are better understood as ideal type concepts on each side of a continuum. Policy and action are ongoing and intertwined processes of interaction and negotiation between those seeking to put policy into effect and those upon whom action depends. Implementation is a process of successive refinement and translation of policy into administrative procedures; at the same time it is about ‘getting something done’ (Barrett & Fudge 1981b, p.21). Policy adjustment could actually be a response to action. And not all action follows from policy. It is more empirically accurate to refer to implementation analysis as the examination of how action relates to policy rather than assuming that action always follows policy (Barrett and Fudge 1981b).

When it comes to general e-government, the policy discourse is very inspiring. On electronic identification more specifically, policies haven’t been as ambitious. The European Commission has tried to set the standard by issuing a directive on electronic signatures. This has then been translated to Swedish law. However, these laws have not been as decisive, clear and standard setting for Swedish public administrations as might have been expected. The laws might have set the framework, but in essence they seem to have been of little significance; rather action of the policy processes have been running things. The policy process incrementally leading to SAMSET and the model of eID through procurement frameworks with banks is more characterized by action than policy. The role played by SAMSET and The Swedish Tax Agency in the contemporary model of eID has been decisive in the current position of electronic identification. The created path dependent action pattern and way to do electronic identification has implicitly gained status as policy. At least this is how it is described within the authorities.

The exact mechanisms of spreading of eID to other public administrations are hard to straighten out. It looks as if public administrations have learned from each other, in a process where The Swedish Tax Agency implicitly has been the standard. Aggregated action in public administrations has rendered the spreading of eID possible. It seems likely that the pragmatic character of electronic identification from the beginning has been very much decisive to why action processes on electronic identification, and not policy, has become decisive for the agencies. All three agencies wished to offer e-services; this meant they couldn’t wait for explicit policies on electronic identification. They had to do something anyway. That anything has been done at all on electronic identification in the agencies is because of action, not policy. And policymakers let them. Implicit policy has in some way replaced explicit policy. However, there have been critics. Now as there is a centralizing tendency in electronic identification, albeit with soft policy instruments, the scope for action will probably decrease. The authorities
believe this is a good idea. The problems of the contemporary model have been felt for everybody involved; the banks perhaps excluded.

From a hierarchical perspective implementing public administrations should translate policy as straightforward as possible. In reality, public administrations tend to build up their own norms and institutionalized patterns of action, through ongoing negotiation and response in interactive and recursive processes. Especially when policy is very vague. Thus the focus of implementation research should be as much about the public administrations as organizations as the policies and their content. The ‘new institutionalism’ guides such analysis (March and Olsen 1984, 1989; Powell and DiMaggio 1991; Scott 1995; Lowndes 1996). Political institutions, such as public administrations and implementing agencies, define the framework in which policy gets realized. The basic assumption is that public administrations follow ‘rules’. Rules in this sense means a whole array of elements affecting human behavior, including ‘routines, procedures, conventions, roles, strategies, organizational forms, and technologies… beliefs, paradigms, codes, cultures, and knowledge’ (March and Olsen 1989, p. 22). Some rules are codified, but most aren’t. Many are internalized through socialization. Human action in organizations is thus governed, or at least guided by, a logic of appropriateness (March and Olsen 2008). ICT is always embedded in institutional structures, and gets interpreted by knowledgeable government agents through their logic of appropriateness. Technology enactment gives meaning to the applied technology, in a manner that will fit the already existing institutional structure (Fountain 2001). At the same time, certain institutions and institutionalized patterns of action are carried and inscribed in technology (Joerges & Czarniawska 1998). Technical artifacts are the material basis for institutionalized social, political and administrative processes. The institutions carried in technology are often more comprehensive than what meets the eyes of its designers and users. There is thus a dialectic relationship between inscribes technology institutions and the logic of appropriateness in a certain administrative setting (Czarniawska 2009).

The three authorities differ considerably in institutional capacities and responses for becoming an effective e-administration and implement electronic identification in e-services. The Swedish Tax Agency has come a long way towards consolidating its e-administration. It doesn’t just aim for expansion of ICT usage towards becoming a system-level bureaucracy; it has already come a long way towards that aim. The ICT and development department in The Swedish Tax Agency seems to be strong and prestigious. This might explain why the agency has decided not to start a special project on e-government, but instead let it be handled within the current organizational structure. The agency is already ‘cutting edge’ in both e-services and electronic identification, both in the eyes of themselves and policymakers. Much action that is undertaken by the agency is actually later implicitly taken up as policy, as with the case of both SAMSET and STORK. Implicitly, the agency has influenced other agencies by being ‘an idol’ in e-administration. This could be seen in the logic of appropriateness of the agency, since the high expectations on e-administration affect everything that is done. Electronic identification was never a policy novelty in The Swedish Tax Agency, since they started pretty much from scratch and practically became policymakers. In this way the agency was decisive for the institutions inscribed in technology on electronic identification. The developed model on electronic identification sits quite easily with the e-services of The Swedish Tax Agency, and not as easy with other
settings. However, there is not a perfect match of eID and e-services in The Swedish Tax Agency, since business representatives are not able to use it.

There are institutional ‘rules’ inscribed in technology for electronic identification. These inscriptions shape possible future directions of technology design and usage. The inscribed institutions in a certain technology, in this case electronic identification, become related to actions in completely different institutions when it is applied in new settings. Thus, implementation of electronic identification in a setting that it was not constructed for will not automatically lead in intended direction. There is a collision of the technologically inscribed institutions and the different logics of appropriateness in other public administrations (Czarniawska 2009). The logic of appropriateness is the mechanism for choosing among alternative courses of action. The standard organizational response to new situation is to apply old routines to it, and search for a match within the standardized framework already effective in the organization (Marsh and Olsen 1989). However, ‘rules’ are easier to bend and change than technology. Technology bears the power to change ‘rules’ in an organization.

The Swedish Transport Agency had not been able to implement eID but in a few e-services. Other methods had been much more developed instead. On merging the agency, the different methods for electronic identification weren’t considered to be adequate anymore. The employed technology in the agency is loaded with the institutionalized norms and action patterns within the old organizational borders. For ICT designers this means problems. First, the code is difficult to get uniform. Second, the technology has been developed for different purposes, and it shines through in user interface and authentication methods. The agency now has its e-government project. However, its technical ‘impotence’ places the ICT department in a key role in development of electronic identification. But the ICT department in The Swedish Transport Agency is struggling with consolidation of the different solutions and basically ‘just to get by’. This of course affects the ability to be imperative in development of electronic identification. However, the only way forward for the agency is to take action. The response is to aim for as few authentication methods as possible. Perhaps, somewhat blinded by the success of The Swedish Tax Agency, the ‘natural’ choice becomes eID.

The Swedish Migration Board, on the other hand, has hardly had e-services at all. The technology of eID has simply not been an option. This might have affected the will to build e-services. The battery of appropriate responses to e-government and the need for electronic identification processes in the board has not been as technology-oriented as in the other two agencies. There has been no development of electronic identification processes because the board doesn’t seem to have activated the action imperative of its ICT department. From the interviews it is obvious that the board was in need of a project aiming at both steering e-government development and deliver technical solutions if it were to develop more e-services. Most probably, the board will have a rapid e-administration development, albeit from a ‘low’ level of sophistication. The project is very action oriented. The comprehensive policies that have come from the top function as an adjustment to a path already taken.

The work that is done on inter-agency information sharing is more equal between the agencies. The work is mostly being done in collaborative projects within The eGovernment Delegation. No single authority has the advantage over the others. The
authentication processes involved in this activity are developed jointly among many authorities.

Public administrations are expected to take decisions in an instrumentalist manner, in which means are selected to fit, on one hand, the problem being addressed, and on the other hand, relevant policies. In reality, garbage can decision-making is common (Cohen, March, Olsen 1972). This is a very pragmatic activity, and the metaphor of the garbage can illustrates the flow of solutions, problems and people searching for something to do in the organization. However, these flows are not random but occur in a context of a logic of appropriateness that produce a systematic bias towards certain courses of action (March and Olsen 1989). Decisions are actually often growing incrementally. Some critical decisions are seldom or never questioned. These form a root of decisions, to which newer decisions, branches, are related in a ‘muddling through’ process (Lindblom 1959).

Conceptually, the policy processes of authentication methods in The Swedish Transport Agency resemble garbage cans. The personnel are currently working with classification of information, but that doesn’t decide upon technology. The problem is that data needs to be protected in the unsafe world of the Internet; the solution is available e-services and electronic identification technology that ‘soar’ in the consciousness of technology decision makers. Decision making on electronic identification is very much rooted in the idea of eID. Even if eID does not affect all decisions on which e-services to build, it is obvious that the idea of eID itself will not be challenged. Everything that happens on electronic identification in The Swedish Transport Agency is related to eID as the standard.

The garbage can in The Swedish Migration Board does not have the same content. eID is very much out of the question, but other forms of technology takes its place. The residence permit card is a solution looking for problems to solve. In the case of e-services for foreign citizens, it has found one. But if something is to happen on this the board must take action to promote policy on establishing the residence permit card as an eID for foreign citizens.

Even though it is a very tentative process, The Swedish Transport Agency and The Swedish Migration Board are on their way to standardization on authentication methods. The volatility of the garbage will decrease, but perhaps the process itself will not come to a halt. In The Swedish Tax Agency, choices on authentication methods are codified in agency statutes, that is, much more formal and codified. However, on meeting other agencies in working with Verksamt.se, The Swedish Tax Agency experienced opposition on eID usage. In that sense, electronic identification is still up for bargaining, and not as unproblematic and easily implemented as the interviewees of the agency wish pretends.

Bureaucracies have their legitimate basis in application of universal principles of legality and equal treatment of all citizens. However, a certain degree of discretion is needed to handle complex cases and goal ambiguity (Lipsky 1980). In e-administrations, computerization is starting to render the traditional street-level bureaucrat discretion obsolete. If handling of cases and even decisions are made automatically, there is no room for judgmental discretion. The street-level bureaucracies are transforming into screen-level, and even system-level bureaucracies (Bovens and Zouridis 2002). The new key implementers, and thus ultimately policy makers, are ICT system designers and
technical managers in public authorities. The choices on electronic identification technology these people make are decisive for administrative output. It is their logic of appropriateness that is inscribed in technology, and thus influences the entire e-administration context.

It is mostly technical personnel in collaboration with ICT jurists that have taken action on electronic identification in the authorities. It is quite obvious that electronic identification artifacts have been inscribed with institutionalized norms of these people. From the ICT department’s perspective in this study, the logic of appropriateness is very much oriented towards action, problem solution and centralization. Electronic identification is considered a technical problem to be solved by technical measures. The politics of electronic identification is downplayed or not mentioned at all. One manifestation of this is that some of the ICT personnel are actively searching to promote the normative aspects that are presented as important in the Stockholm Chamber of Commerce evaluation. If the agencies try to live up to these aspects, the constructors of the evaluation will have a normative effect on the technology being developed, and hence the agencies are developing technology laden with logic of appropriateness from the Stockholm Chamber of Commerce.

For all agencies, there is technologically a strong will to centralize and standardize the authentication methods, both for the sake of user-friendliness and for the sake of efficient and simpler technical administration. In the case of electronic identification, many technical solutions are developed and run by business contractors. All three agencies are dependent on this type of technology. Since much of this technology is directly implemented in the agencies, the inscribed norms of the technology become active in the agencies’ e-administration and e-services.

Conclusions

This article has presented an outline of the handling of electronic identification in three public administrations. The handling in the three authorities has been analyzed with theories on policy action, logic of appropriateness, garbage cans, and investigations of the dialectics of institutions and technology. The result highlights that the policy process of electronic identification in the three studied authorities could not be adequately explained from a traditional policy-implementation dichotomy. Analysis of relevant policy documents and reports on electronic identification doesn’t reveal any rational explanation as to why electronic identification turned out as it did - it more or less just ‘seems to have happened’. The three authorities have very different institutional capacity to implement e-services with electronic identification. A part of the explanation is that the available technology on electronic identification is inscribed with certain logics of appropriateness, that doesn’t sit equally easy with the administrative logics of appropriateness in all three authorities.

Policy wise, it is strange how eID has gained its reputation. There are hardly any policymaker decisions on eID, but in the public administrations it lies in the centre of debate. Thinking ‘electronic identification’ very much equates thinking ‘eID’. It might not be surprising, since usage is becoming more and more widespread, and public administrations want citizens and business to use e-services. However, the traditional administrative logic of appropriateness is to implement policy. If no mission exists to create e-services, then nothing should happen. It there is a mission to create e-services it should be done, but if there are no clear directives for which authentication methods to
use this should be pointed out to the policy maker. The technological logic of appropriateness is to use whatever authentication methods available. The latter of these logics has clearly overplayed the former when it comes to electronic identification. The action imperative to develop e-services is very strong.

**Further implications**

There are clearly issues of power and institutional influence at work in policy processes of electronic identification. Electronic identification might not be much of a contested issue in public debate, but it is alarmingly quiet on these issues. Public administrations are rapidly transforming into e-administrations and system-level bureaucracies. A logic of appropriateness stemming from technological thinking is replacing the traditional administrative logic.

Garbage can processes or processes of 'muddling through' in which technology is searching for problems may superficially seem to be random. But these are not necessarily to be avoided. They are ways of coping with difficulties and are themselves important administrative principles in fulfilling complex tasks (Hood 2002). Without them, e-administrative development would not have come as far as it has. Though, there are consequences. The technical solutions on electronic identification searching for problems are being implemented wherever it is possible. This means the e-services are becoming very divergent for users, even through they are centralized in ICT architecture. There used to be a ‘root’ in public administrations decisions, which stated that service accessibility should be provided on a basis of equality to citizens. By developing different e-services, and implementing certain methods for electronic identification before others, public administrations are moving away from the principle of universality. Choices on electronic identification are actually choices on who will benefit from government e-service, and who will not. For example, the user interface of eID blends together with public e-services and affects not just the performance of the services, but also the very face of the agencies. As public administrations, the e-services offered should be characterized by impartiality and non-profit technology usage. There is however nothing impartial about a user interface that requires certain commercial technologies to be used. Another implication is that the evaluation from the Stockholm Chamber of Commerce will have an effect on the technologies on electronic identification that will be developed. From a traditional public administration perspective, there is no good reason for this. From an action perspective, it however makes good sense.

The eGovernment Delegation has now decided to take a top-down hold on electronic identification, the pendulum in the future will be turning from action towards policy. But this might not be a painless task. Invested time, effort and money on electronic identification in the public administrations have left its marks on the contemporary solutions. Inscribed in the technical solutions currently in use are institutional logics of the technicians behind eID and other authentication methods. There is also a severe lack of coordination between the proposed federated solution, the procurement frameworks and classification of information. Future research should try to follow this policy process. There are good reasons for hypothesizing that the action imperative will change, and different policy dynamics will appear.
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