TECHNOLOGY IN POLICY
An Explorative Case Study of Information Systems in Merging Authorities

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Abstract: This paper shows how e-government can, or might even have to, be considered as a public policy transformation. In the process of merging authorities into new organisations public policies on e-government appeared as a key activity. The case study presented in the paper is the formation of the new Swedish Transport Agency formed out of several formerly independent authorities. The Swedish case study is a mature public administration and basic democratic core values. The main contribution from the case study is to point out the importance of translation of policies into organizational practices.

1 INTRODUCTION

Public administration is as such an information system. Policymakers and public administration are developing and using information technological systems. One of the main reasons for developing databases and early IT was the need of efficient national registration and administration of great data generating capacities. In Sweden this took place already in the 1960's (Johansson, 1997). However, the use of IT within public administration has recently been taking to new levels by more integrative systems, within and between agencies (e.g. case management and case handling support systems) and openness towards citizens and the surrounding society (e.g. public e-services).

During the last decade e-government has become an apparent strategy in reforming government agencies and public authorities (Heeks, 1999; Pardo & Tayi, 2007; Tranvik et al., 2008). Many scholars seem to agree that some of the most promising benefits from the use of IT in government rely upon the integration of activates and information across organizational boundaries (Daves & Pardo, 2002; Pardo & Tayi, 2007). Ultimately, government agencies through the use of IT, seek to centralize and make a cohesive and seamless set of government services available to users. Integration of governmental organisations, through the use if IT (e.g. information systems [IS] such as enterprise systems, described below), are therefore seen as a critical success factor to attaining a mature level of e-government (Lam, 2005). However, this kind of change usually requires rather radical technical and organisational process and behaviour changes for both the individuals and the organizations involved (Pardo, Gil-Garcia & Burke, 2006). We can also identify the stream of information sharing and intra- and inter-organizational information integration in the private sector using enterprise information systems (enterprise systems or ERP-systems) with similar arguments and benefits (Sammon & Adam, 2005) as in the public sector. The typical features of an enterprise system include a central database providing data exchange, an organisation-wide scope and a high degree of integration (Kremers & van Dissel, 2000; Newell et al., 2003).

Democratic public administration relies on other core values than market oriented business organisations and even civil society organisations. The typical features of liberal democratic public administration as democratic open and accessible provide a contextual setting for e-government, with options for improved democracy, openness; participation and accessibility (Bock Segard, 2009). In recent years a massive trend of transformation from government towards governance has opened for integrative e-governance in pluricentric interviewing administration linking together public, semi-public and private institutions (Sörensen, 2007). These contextual and societal changes influence the internal design and usage of IS.

As a consequence of the increasing use of IT in the public sector national policies on e-government

have developed and become more specified recently. There has been no central clear policy for the implementation of e-government in the Swedish public authorities, instead each authority had their practice sometimes expressed in policies. First in 2008 the Swedish government launched a comprehensive and comprehensive policy for e-government (*Finansdepartementet* (Fi2008/491) *Nationell handlingsplan för den svenska eFörvaltningen*) – a policy critically examined by e.g. Melin (2009).

In spite of the lack of policies the public authorities had for a long been working with e-government and different solutions of IT in their activities, bur rather in a decentralized and locally adapted manner. That also applies to the activities and responsibilities now belonging to The Swedish Transport Agency (STA) – the case focused in the present paper. STA was established in January 2009. It is a result of merging five earlier separated authorities in the policy area of transportation. The core activities of the new authority are regularization, supervision and authorization within the four modes of transportation aviation, railway, road and shipping. STA merges responsibilities from five different former public agencies in Sweden.

1.1 Aim of the Paper

The aim of this paper is to analyse the translation of policy making into IS design in the process of merging public authorities into a common organisation. The analysis relies on a case study of the Swedish Transport Agency (STA) and is explorative and opens for an integrative approach towards public policy making and e-government.

In the analysis we de-construct the case using two research approaches:

- *Technology in policy*: how are the information systems constructed and given meaning in the policy processes forming the new authority?
- *Technology in politics*: how are the information systems implemented are negotiated through politics?

The separation of policy and politics indicates that policy concerns the content and politics highlights the negotiations and decisions on the policy (Sörensen, 2007).

In the next section we introduce our theoretical perspective on the case study and discuss some methodological considerations. The third part addresses the research questions. Finally, we draw some conclusions and point at som implecations for the policymaking regarding e-government.

2 METHODOLOGICAL AND THEORETICAL CONSIDERATIONS

This qualitative case study was conducted in the newly established public authority The STA in the spring and summer of 2009. The design of the study was formed in discussions with the authority and we got good access to informants, documents and informal working papers.

STA is a regulative authority with basic legal applications. STA has, in comparison with other authorities, an open perspective and relates to private and market actors for the basic functions of a society (eg. traffic in general). It is also de-centralised authority with several different regional and specialized offices. Our approach towards the case has been two-folded. Firstly, we approached the case from above and from a distance through the text analysis of the policy documents. Our mapping of the policy context was a discursive analysis of e-government in national policy documents, investigations, documentations of guiding principles and action programmes has been conducted. A summary of the analyzed documents is found in the list of references. Secondly, we approached the process from "inside" and below, by following the actors promoting the processes of change and common implementation of the IS. The data collection is based on interviews with central positioned authority's personnel at STA and some on-site observations at STA headquarters. In addition European, national and organisational documents regarding transport policies in general and the formation of STA in specific have been analysed. The purpose of this combination of methods was, to investigate the strivings of the authority to reach the government's ambition when it comes to e-government, as expressed in the national policy action plan. At the same time we had an ambition to explore the agency's efforts of achieving a sense and spirit of community and joint action in its organization. An unexpected but central and repeatedly experienced difficulty was the lack of documents registered in the public diary records of the new authority. A common answer to the claims for access to official and public records was that there simply was none – at least none (written form).

The three information systems that were selected for this study exemplifies systems employed in the everyday work at the agency. The information systems are: Agresso (a software package of modules for HR and financial management); W3D3

(a system for diary-keeping) and "Transporten" (the agency intranet). They were chosen as they represent somewhat different forms of human-system-interaction, at the same time as they are used differently from a top-down/bottom-up-perspective. This study is a single case study with in-depth studies of a one agency, but the systems are three so we used the openings for internal-case comparison to gain a deeper and richer understanding of the role of information systems in organizational changes.

In this study, the focus is not so much on the technology itself, but on the organizational setting for usage of the system, and the organizational assumptions and implications of overall system design. That means to focus on the cultural and social embeddedness of the system, such as attitudes towards the system, the meaning of the interface, and proficiency of self-services (e-services).

2.1 e-Government as a Socio-technical System

Our ontological grounding is on the constructing of meanings and usage of information technology in the interplay between actors and structures. Public authorities are (or at least builds on the intention to be) democratic designed and managed organisations.

E-government is given meanings both in a political process of forming policies and in the daily practices of conducting the objectives of the authority. This case study was conducted in a re-organised new authority and thereby even some formerly implicit meanings became visible.

Thus the local actors within the organisation are constrained by the democratic imperative and in this case also the technological one. The aim of a public organisation is not profit maximizing, but still to reach efficient resource management. There are also demands to meet the general public and run all activities according to the legislation. Thus public IS has to address other aims than information systems (e.g. enterprise systems) in private firms. A problem is that the supplier of information systems normally has the private firm as a norm – this also goes for the information integration, within and crossing organizational boundaries, that usually is a result from use of modern IT (cf. Daves & Pardo, 2002; Pardo & Tayi, 2007) and a part of an e-government agenda (ibid.).

2.2 Roles of Information Systems

Askenäs (2004) and Askenäs and Westelius (2000) propose that the use of an enterprise system, as an

example of an IS, affects the structuration of an organization. This follows the line of thinking introduced above regarding e-government as a socio-technical system. This does not means that an enterprise system acts on its own. It is individuals (e.g. users) who use it and who may give it a role as an actor. An enterprise system is, thus, not an independent, invariant, externally designed actor. It receives its character in interaction with the structure of the organization (cf. Giddens, 1984), other information systems within an organization or integrated with them forming an infrastructure with them (cf. Hanseth and Braa 1998). Individuals also perceive and understand information systems as such and its purpose, differently (Askenäs and Westelius, 2000; Orlikowski and Gash, 1994).
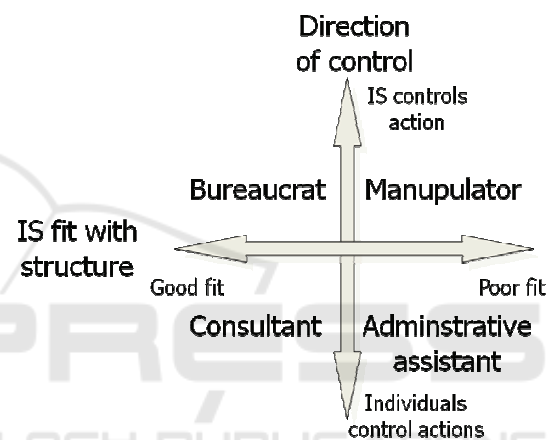
Figure 1: IS Roles (based on: Askenäs and Westelius, 2000).

Bases on these points of departure Askenäs (2004) and Askenäs and Westelius (2000) proposes several IS roles, which they label; (1) manipulator, (2) bureaucrat, (3) assistant, (4) consultant, and (5) dismissed (Figure 1).

To enable an enterprise system to play (1) the role of a manipulator, the "individuals have to obey and follow the instructions in the system" (Askenäs and Westelius, 2000, p. 432). This act may be done consciously, reluctantly or unknowingly. The role of an enterprise system as a (2) bureaucrat needs the individuals (e.g. users) to follow its instructions and agree with them. The power and sanctions from the system, or individuals forcing others to use the system is not as strong as in the former role. In the (3) assistant role the system does not have exclusive power over the individuals. Individuals use the enterprise system more as they like. The system is "only" used to supply data etc. and not an active part in the individual's actions. The (4) consultant role

can be placed in between the (2) bureaucrat role and the (3) assistant role regarding the influence on the actions. The user lets (or makes) the enterprise system suggests alternative possibilities, but chooses between the alternatives offered. An enterprise system playing the (5) dismissed role has been actively rejected by an individual (ibid.).

We regard the roles as ideal types that can serve as a point of departure helping us to understand the phenomena studied in this paper. We use the interactive dimensions and the reciprocal relations between structure, technology and individuals as a point of departure in this paper and add more institutional density.

2.3 Authorities as Democratic Public Administration

The traditional *government* approach highlights the formal steering chain of public organizations and decision making by political actors. 'Government' implies that governing takes place within governments and their formal institutions and the state's monopoly on the use of legitimate coercion is in focus (Boyer, 1990; Stoker, 1998). The government approach has long been the norm, and it has determined the structure for policymaking.

On the other hand, the *governance* approach has been developed to explain the more open and network-oriented decision-making processes including an intricate interplay among public, private and non-profit organizations. This approach has been explanatory and, at the same time, inspirational to policy makers aiming to achieve 'good governance'. According to Peters and Pierre (2004, p. 78), the common denominator in definitions of governance is that it "…refers to the process through which public and private actions and resources are coordinated and given a common direction and meaning". Governance is about co-ordination, but focuses on how and why actors continue to participate and develop interactions in networks. Thus we prefer to talk about e-governance rather than e-government. However, according to all problems related to drawing lines around governance structure we keep the established concepts e-government for governance in public authorities that is the case here.

Networks are considered as non-hierarchies with mutually dependent actors among whom power relations are clearly uneven. There are usually open exits from networks. Actors participating in networks have to exchange resources and negotiate shared purposes. Cooperation and coordination are

seen as the best ways to address common interests (Börzel, 1998). It has been argued that governance has developed as a response to increased globalization, deregulation and ideological liberalization, among other trends. Networks are self-organizing and not fully accountable to the state in the governance approach (Rhodes, 1997:53). However, all networks act in a context of public institutions, and thus states interrelate and participate in networks. Governance enforces cooperation and open networks, and therefore no decision made within any given organization or institution will necessarily be legitimate beyond the initial context. Legitimacy arises through the interplay between legal interpretations, common understanding and trust within the network.

2.4 Policymaking and Democratic Public e-Government

To conclude, information technological systems are socially constructed and given meanings in its contexts. The context for e-government is formed in the interplay of policy making and usage of IT in public administrations.

Here we consider the interplay of policy making and usage as an act of translation. Translation takes place in the interplay of translator (actor), something that is translated (object) and mediated in which the translation is inscribed (Callon 1991, p. 143). We here divide into policies regarding e-government as the content.

3 TECHNOLOGY IN POLITICS - POLITICAL DESIGN OF E-GOVERNMENT

This section presents the case. Firstly, we give a story of the construction of e-government in politics (3.1) and the policies that came out on national level (3.2). Secondly, we show how these policies are constructed into STA through a political process (3.3) and than how local policies were developed as practices at the emerging authority of STA (3.4).

3.1 Technology in Politics – Public Policy Documents

The Swedish Government has for some time not had a united policy for usage of IT-solutions in the public administration (Riksrevisionen 2004:19). In the beginning of the 21th century this began to

change, mostly due to the establishment of the notion of the 24/7 Agency, under the responsibility of the 24/7 Delegation. However, further action had to be made to accomplish the goal of a unified management of e-government. Therefore, in 2007 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 was presented in i single, unified document. The main objective of the action plan is to make it "as simple as possible for as many as possible". Some of the other explicit objectives of the action plan is to improve the quality of exercise of public authority, and to "slim" the administration in order to economize the limited resources. The aim of the plan itself is to coordinate the management of e-government across organizational borders of ministries and authorities.

An investigation of merging the authorities in the area of transportation was presented before the Government. Soon thereafter, on September 25 2008, the government bill for the establishment of The Swedish Transport Agency was presented. On January 1st 2009 the new authority was to start its activities. In the final government bill the argument for establishing the new authority is mainly to improve and make more effective the supervision, but also to harmonize the development of the different modes of transportation.

There were also explicit ambitions to harmonize the IT-systems used both within the former authorities and towards customers/citizens (Governmental bill: Prop 2008/09:31).

3.2 The Action Plan – Technology in Policy

In the national budget for 2007 the Swedish Government called attention to the need for uniform usage of file formats and joint methods for a safe handling of electronic data in the governmental body. The Governments ambition in this matter also showed very clear in the report on IT-standardization. In another government bill from 2008, the ambition of intensified and facilitated interchange of information between different authorities further shed light on the safety aspects of such an ambition. This matter has clearly been important for the government in recent times.

In 2009 an Action plan for e-government was formulated (analyzed e.g. by Melin, 2009). The aim of the action plan is to make public contacts with the authorities easier, by using IT in a strategic way but also by organising activities within the public administration differently. The reason given is that the commitment to developing e-government is a way to try to live up to public expectations, and that public administration has a special responsibility to support and/or lead progress in the IT area. The intended performances of the action plan are divided into four focus areas. They are presented as separate, but they are all equally important for achieving the objectives of the plan. These areas are: (1) To set up regulations for cooperation and handling of information between and across different public authorities, (2) Technological solutions and standardization of IT, (3) Shared support for in-service training and joint follow-ups and (4) The authorities public relations through e-services.

The argumentation is centred around the concept of streamlining, and one used formulation is: "The internal need for streamlining should be made at least as important as the public value when it comes to the continued development." (Verva 2004:30). All in all, the national government has in recent times shown a great interest in handling of cases electronically, as a means to save resources and streamlining the business of different authorities.

3.3 STA as Technology in Politics

In this study, the focus is on the merge of different agencies into one public agency; STA. The creation of the STA is an example of trying to "harmonize organisational cultures" of it's different lines of business, and achieve a capacity to act jointly as a single authority. Another important, and interwoven aspect, of the merge of the operations are the use and overall design of different information systems employed by the STA; both as levering and hindering changes, regarding e.g. information sharing and intra- and inter-organizational information integration. The role of the information systems in the merging of authorities into a single public authority is therefore also focused. Three information systems are analysed: Agresso, W3D3 and the agency intranet.

In the governmental bill establishing The Swedish Transport Agency (Prop 2008/09:31), the discussion of IT-usage has an unobtrusive role. The main argument is that modern technology probably will facilitate the citizen contact with the authority. In The Government Approval Document for 2009 The Swedish Transport Agency (STA) has been given the assignment to, at the latest October 31st

2009, present an action plan of how the authority intend to realize the ambitions of the National Action Plan for E-government, thus this were not included in our analysis.

The formation and planning of STA has been discussed since 2004, aiming to reach an overall view on policy-making, supervision and authorization within the transportation sector. In 2007, an official report stated that the supervising capacity of the different modes of transportation should be established within a new authority. However, at the time it was acknowledged that this could not be done without further investigation. Hence, in 2007 another investigating committee was launched – this time with the explicit aim of establishing a new authority. The responsibilities of the new authority should be regularization, authorization, supervision and policy-making in the different modes of transportation, and to represent the Swedish Government in international developmental policy-processes within the transportation sector.

To conclude the basic impression of the case study is that the efficiency aim is superior in the process of merging authorities. The politics of technology here is efficiency rather than democracy, openness and other buzz-words for e-government.

3.4 Policies on IT Activities at STA

When the final report came that suggested the establishment of The STA as a new public authority (SOU 2008:44), the ambition of availability 24/7 through e-services was a part of the plan. The emphasis was that the information retrieval (IR) for citizens and private enterprises was to be simple, effective, and interactive. Moreover, the calling upon citizens providing information for the authority should be solved interactively between the different authorities, so the information would only have to be provided once. It should not be the responsibility of the individual to navigate, this should be the responsibility of the governmental bodies to solve jointly among themselves. This is especially important for The STA, since it's activity involves a lot of public interaction through different forms of service and authorization. The official report presents a strong belief in streamlining the resources of the authority through the implementation of e-government.

That IT usage and e-government is not widely discussed in the preparatory work of The STA is perhaps not very surprising. Nevertheless, in much other policy-making e-government has come to play

an increasingly important role. This sort of discussions on IT might not be very common in the context of authorities and organisation, but they exist.

3.5 Merging Authorities, Merging People, Merging Technology and …

Even though the ambition of creating one authority with an overall responsibility for the different modes of transportation had been around for some time, things were rushed when time came to implement the plans in reality. The personnel interviewed in this case study all witness that the demands were overwhelming in comparison to the circumstances at hand and the resources available for the organizational change. As one of the interviewees put it: "It's been forgotten that it costs a lot of money to save a lot of money". The scarce time and resources available for the change also became visible through the financial result of the first six months of the agency. The director-general of the agency, Staffan Widlert, explained on June 26 2009 that this had caused severe financial problems for the agency, intensified by the financial crisis at the end of 2008 of the economy at large.

4 ANANLYSIS OF THE POLICY MAKING OF INFORMATION TECHNOLOGY IN STA

There are two main reasons here for taking the interest in the policymaking and usage of information systems in STA. The first reason is the unique character of the e-government as a policy domain makes it very valuable to study. One challenge in a context of policy analysis is trying to investigate under what conditions a successful implementation of the Swedish governments ambitions may occur. That means to analyze both central policy documents as well as acquainting to the local practices in the different contexts of the authorities. Generally, to fully grasp and understand the conditions for implementation of a policy, one has to understand that "nothing happens by itself" and that a an implementation process has to be carried through by local actors (Hill & Hupe, 2009; Stewart, 1996 and Lipsky, 1980). In the context of public authorities, some authors speak of these local implementers as social entrepreneurs. The enthusiasm of these entrepreneurs is sometimes a

necessary condition for the successful implementations of innovations in the public sector.

The second reason is that when a new authority is established, there is a unique opportunity to change and develop the administrative and managerial characteristics of the governmental body. Or so the theory goes. In fact STA is a complex mix of different authorities, with the different organizational and information technological (socio-technical) bodies already having distinct ideas about how to run things. The challenge for the new authority is thus to overcome the old routines, and establish a joint comprehension of goals, routines, and identity. A challenge which often proves to be easier said than done. The Swedish government's intentions of establishing an all-embracing transportation agency was to collect, clear and render the supervision assignments of the different modes of transportation more efficiently. A condition for achieving this is that the new authority has the capacity to act jointly. The different IT solutions employed in the agency have an effect on this capacity. However, as has long been stated within the studies of IT and organizational change, there is no simple causal effect between implementation of technology and organizational and behavioural outcome. Hypothetically, the IS could bring the former authorities together, or some of its parts. But IS could also divide since the professionals in different authorities have different cultural experiences of IS, the meaning of IS and how to use it. The role of the IS in merging authorities is therefore crucial (Askenäs and Westelius, 2000) as well as general IT as a part of policies and ongoing policy making. Different roles for IS affects the prerequisites for and results of merging organizations. New and common IS can e.g. be used and interpreted as a manipulator, an assistant or a bureaucrat (e.g. standardizing processes within the STA) or even be dismissed, actively rejected by an individual (ibid.) or a group of individuals (in this case a merged sub unit rejected W3D3).

Figure 2 illustrates our primarily conclusions of the case study inspired by Askenäs and Westelius (2000) model illustrated in Figure 1 and the process of translation (Callon 1991). It was obvious that policy making regarding information technological systems both took place in the representative democratic system and in the organisational setting. There is a translation of policy making that appears in the interpretation and use of IT. The democratic decisions are translated through the use of the technology and thereby influencing both the structure of the organisation and the activities of the individual.
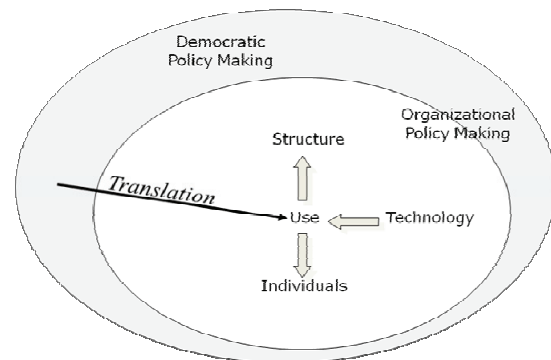

Figure 2: Translation of policy through the IS design.

Hereby, we conclude by pointing at the interplay of usage and politics in the making of e-government. This conclusion is grounded in an indeed interdisciplinary approach. Through this model we will point at the implications of translation and its implications for developing new policies as well approaches for IT use in public organisations. The general policymaking process beyond the organisation has to be translated into the organisation as well as the IT system.

The main contribution from the case study is to point out the importance of translation of policies into organizational practices of information technology merging authorities. The national Action plan for e-government made an implicit but at the end oblivious change of use e-government.

It is also worth noticing that the common information systems played important roles in the merging of the new authority. The creation of a common organisational setting got a face and a structure through the common information systems.

Traditional models of implementation of policy more or less take a "jump" into daily use of the systems, excluding the translation process. Thus translation processes has to be included in policy analysis, at least when focusing on development and implementation of IT in public organisations.

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