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E-government challenges – exploring inter-organisational aspects of e-service development

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E-GOVERNMENT CHALLENGES – EXPLORING INTER-ORGANIZATIONAL ASPECTS OF E-SERVICE DEVELOPMENT

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Abstract

In this paper we are applying inter-organizational concepts from the industrial/business network approach on empirical findings from an e-government case, in order to describe and better understand challenges in one-stop government e-service development. We analyze our case by using concepts that characterize an inter-organizational relationship in terms of its level of continuity, complexity, symmetry, informality, and its dimensions (links, bonds, and ties). The purpose of the paper is to explore how these theoretical concepts can help us focus on certain aspects of e-service development challenges. The empirical findings are collected within an on-going action research project for e-service development in the public sector in Sweden. The aim of the project is to develop one-stop government e-services for driver's license matters as well as a web-based portal where these e-services and information about the driver's license process will be easily accessible. Our conclusions are that the theoretical concepts helped us reach further understanding of the empirical case. In the spirit of the network approach, we focused on the present situation and been able to give a rather detailed and fine-grained picture of the problems and challenges in this context.

Keywords: e-government, e-service, inter-organizational relationship, one-stop government.

1 INTRODUCTION

No government agency is an island. The fact that organizations depend on each other when doing business has been accepted for centuries. Inter-organizational aspects have been focused in organization theory, where interaction in dyads and networks are vital objects for research (cf. Håkansson & Snehota 1989, who stated that no business is an island). In this paper we are applying inter-organizational concepts from industrial markets on empirical findings from an e-government case, in order to describe and better understand challenges when developing one-stop government e-services.

Inter-organizational aspects are central in managing public sector development in general and e-service development in particular, when understanding the public sector actions. Within the e-government research area there are some topics that deal with inter-organizational aspects of e-service development. The most obvious areas are the research that pivots on one-stop government e-services (e.g. Gouscos et al. 2003; Wimmer 2001; Kubicek & Hagen 2000) and studies that relate to the reconstruction of inter-organizational case processes from the client point of view (e.g. Andersen 2004). Although normative statements on how to deal with problems associated with one-stop government are important, this is not the focused topic in this paper. The discussion in this paper concerns the public agencies as they stand and does not focus on the re-organization of the public sector. This is important in order to understand the reality as the public agencies perceive it and the reality they have to handle. The case that is discussed in the paper is a present on-going development project to establish an e-service for application and granting of provisional driving licenses.

The importance of one-stop government associated issues and problems are especially true in decentralized government structures as in Sweden (OECD 2002). Several national studies (Statskontoret 2005a; Statskontoret 2005b) conducted in Sweden point out the cooperation of agencies as the major future obstacle for improving the public sector performance in terms of e-government progress and development of one-stop government solutions. In a recent report from the Swedish agency for public management, (Statskontoret 2005a) the differentiation and specialization incorporated in the division of the public sector, into a large number of semi-autonomous agencies, is pointed out as a focal point to be managed now and in the near future.

One important identified barrier that needs to be overcome is the delaying factor of lack of organizational cooperation (Kubicek & Hagen 2000). This aspect is central in our paper where the topic is centered on applying and discussing the industrial/business network approach on public sector agencies in a one-stop government project. Other barriers and obstacles in one-stop government development are recognized but not focused on in our paper.

The purpose of this paper is to explore how the theoretical concepts that characterize an inter-organizational relationship (continuity, complexity, symmetry and formality) and concepts that describe dimensions of such relationships (links, bonds, and ties) can help us focus certain aspects of an e-service development project aiming at developing a one-stop government e-service. The need for dealing with inter-organizational aspects when developing e-government is nothing new, this topic is addressed in the research community as well as the practitioner's community among agencies in different countries. British Prime Minister, Tony Blair stated in 1998 "joined-up problems need joined-up solutions" (The Observer 1998). After this introduction, the paper is organized in the following way: In Section Two we review some recent e-government studies in order to investigate what threats, opportunities and barriers are reported in relation to one-stop government e-service development. We also explain the notion of inter-organizational interaction in this section. The research design is reported in Section Three, followed by the introduction of the empirical case in Section Four. The empirical findings from interviews concerning e-government challenges are discussed and analyzed in Section Five. The paper is concluded in Section Six, where we also make some statements about the need for further research efforts in this area.

2 E-GOVERNMENTAL ASPECTS IN THE LIGHT OF INTER-ORGANIZATIONAL INTERACTION

This section of the paper presents some central issues on threats, opportunities and barriers in e-service development in general and particularly in inter-organizational settings, where two or more agencies are involved in the case process as well as in the development project. Furthermore, this section contains a presentation of the industrial/business network approach. This approach is the theoretical cornerstone applied to our case study later in the paper.

2.1 Context limited issues of one-stop government

Firstly, we need to base this discussion on the fact that different national governments are structured differently (e.g. OECD 2002). As stated in the introduction, our case study focuses on several Swedish national government agencies cooperating to implement a one-stop government e-service for issuing provisional driving licenses. Different ways of organizing the government organizational body will result in different issues to deal with in order to realize one-stop government. The Swedish model of public administration with semi-autonomous agencies has several effects that need to be taken into account when discussing obstacles and opportunities in e-government development, which differ from other countries. The Swedish model of public administration is in an international context, unique, in being almost completely organized into agencies and thus, having very small ministries. According to OECD (ibid.), the Swedish model makes agencies more visible on a public scale and thus, less effort has to be put on hiding the government superstructure in order to help citizens navigate to the right authority. The high number of agencies and the fact that administration is more visible help compensate to some extent for the lack of one-stop government services.

One-stop government solutions to the overall problem of hiding the stow pipes of the underlying government structure have been treated in various ways in different countries. To illustrate the differences, Sweden and Canada are good examples. The Canadian government has for a long period of time been developing a one-stop portal solution in order to hide as much of the underlying structure from the citizens of the country as possible. (d'Auray 2003) The aim in Canada is to provide all services in one place. On the other hand, Sweden has put little effort in this direction. One-stop government in Sweden is defined rather differently and less ambitiously as "one case, one contact". (Statskontoret 2000) In contrast to the Canadian ambition this is not focusing as strongly on a one-stop shop but more on integration of agencies in a case process. The less ambitious meaning of one-stop government in Sweden puts the core elements of one-stop government on the agencies. In total, weak guidance, directives and financing come from central government. In the Swedish model the creativity is up to the agencies themselves. The auditing office in Sweden (Riksrevisionen) has stated that the central government has done too little too late in order to promote the evolution of e-government (Riksrevisionen 2004).

2.2 Threats, barriers and opportunities when developing one-stop government e-services

E-services and e-government evolution are described in several stage models that have been presented by the research community, e.g. Layne and Lee (2001) as well as by different organizational bodies such as the UN (2003) and Statskontoret (2000), which is the Swedish agency responsible for promoting and aiding Swedish agencies towards further mature e-government availability. These models distinguish e-services on a basic level (published static information) from more complex services that need several agencies to cooperate in order to realize a transaction service or one-stop government service. Irrespective of the fact that these models have received some criticism (Andersen 2004; Goldkuhl & Persson 2006), they emphasize that cooperation between agencies in order to provide one-stop government e-services is the most difficult task to be handled by agencies.

Kubicek and Hagen (2000) have identified six key areas of barriers with a clear inter-organizational focus to be overcome for fewer delays, failures and obstacles in one-stop government development. The first key area is summarized in *lack of organizational cooperation*, the second key area is *missing legal regulations,* and the third key area is the necessary area of pre-conditions in regard to *technology* and fourth in regard to *human factors*. The last barriers are lack of *appropriate funding* and *political support.*

A holistic framework for e-government (Wimmer 2001; Wimmer & Tambouris 2002) helps us focus on different views when discussing requirements for one-stop government, besides processes and services. The focused views are: (1) the technical viewpoint; (2) the view on people (e.g. different user groups); (3) security aspects; (4) legal issues; (5) organizational aspects (structural fragmentation, division of expertise and responsibilities); (6) social and political aspects and (7) views on data and information. (Wimmer & Tambouris 2002) Obviously, there are features among theses views of a clear inter-organizational nature. An obvious observation from the Swedish context is that the e-service output growth was fast when providing e-services that had no need for cooperation among agencies. The Swedish Road Administration for example has developed several e-services within the agency boundaries and only one in cooperation with other agencies. The same is valid for transactional e-services for tax declaration and application for parental leave in Sweden. There are many e-services without any need for cooperation between agencies. E-services that need to be built on cooperation between agencies are much rarer. Inter-organizational e-services, like in this e-service case study, are important to study in order to better understand the complex picture of barriers in the decentralized, agency-centered public administration model. Although inter-organizational aspects of one-stop government e-service development projects have been conducted before, this paper takes another view in this matter. We investigate and discuss the empirical case based on concepts (concerning characteristics and dimensions of relationships) borrowed from the industrial/business network approach. This is done in order to better understand the potential challenges of two cooperating agencies developing a one-stop government e-service for application and automatic granting of provisional driving licenses.

2.3 Inter-organisational interaction

The industrial/business network approach, called the Uppsala School (e.g. Håkansson 1982; Axelsson & Easton 1992; Håkansson & Snehota 1995), is a mature line of thinking that supports the understanding of interaction in business networks. Our thesis in this paper is that the industrial/business network approach, or at least several key concepts and classifications, can also help us to understand the interaction between governmental actors. Interaction is an aspect of reciprocal action or interplay; it is not the case of just one organization *acting* and the other organization *reacting* (ibid.). This is an important standpoint in the network approach. We will now describe a business relationship's characteristics in terms of levels of continuity, complexity, symmetry, informality, and its dimensions (links, bonds, and ties).

If we take a closer look at the interaction between organizations we can find several characteristics of relationships; (1) continuity (2); complexity; (3) symmetry and (4) informality as structural characteristics of a relationship (Håkansson & Snehota 1995).

1. *Continuity* refers to the relative stability that tends to characterize supplier and customer relationships.

2. The *complexity* in a relationship can among other things comprise the number, type and contact channels for those from each organization who are involved in relations between customer and supplier (ibid.). Also, contacts can vary from level to level between organizations.

3. It is typical for relations in industrial networks for customers and suppliers to be *symmetrical* in terms of resources and initiatives on each side. In those cases where asymmetry does occur, the customer tends to be bigger than the supplier is.

4. The relationships often demonstrate a *low level of formality*. Even though contracts exist, they are seldom referred to, as they often point out that contracts are an ineffective way of dealing with uncertainty, conflict or crises in relationships which are going to survive for some time (Håkansson & Snehota 1995).

Another important aspect to study, when looking at interaction between organizations, is different *dimensions* of relations, such as *links, bonds* and *ties*. The various links, bonds and ties between organizations in an organizational network are important to consider when studying relationships (see e.g. Håkansson & Snehota 1995; Axelsson & Easton 1992). The word *link* refers to the connections that exist in the activities between organizations, so-called activity links. An activity is defined as: "a sequence of acts directed towards a purpose" (Håkansson & Snehota 1995, p. 52). Activities can be of various types, for example technical, administrative or commercial. The links between activities reflect the need for co-ordination which affects how and when various activities are carried out. Matching one actor's resources with others' and dividing out the tasks are examples of an aim towards purchasing and marketing functions within an organization. This, in turn, has consequences for both the costs for carrying out the activities and their effectiveness (Håkansson & Snehota 1995). The links between activities make up a certain structure within the respect of organization at the same time as it also creates certain patterns in the network.

Bonds between the actors in a network can be of various types, for example technical, social, time-based, knowledge-based, administrative, economic or legal (Håkansson & Snehota 1995). Bonds arise in relationships as two related actors mutually acquire meaning in their reciprocal acts and interpretation (ibid., p. 197). Bonds can have various aims, an example being to achieve co-ordination as a means of saving resources. To gain access to suitable co-operators and maintain a certain position in the network are other examples of the importance of handling bonds. "Actors act and develop bonds; at the same time they are a product of their bonds" (Håkansson & Snehota 1995, p. 201).

A relationship between two organizations affects the way in which the organizations use their personnel, equipment, know-how, and financial resources, to name but a few. A relationship between two organizations can comprise pooled resources of these kinds, so-called resource *ties*. The relationships between organizations are not just a way of assuring access to resources, they are also a way of getting various types of resources to meet, confront and combine (Håkansson & Snehota 1995), and to develop, create or refine.

We can identify several motives for applying these theoretical concepts when analyzing our e-government case. First of all, the Swedish model for public administration implies that cooperation between agencies in Sweden relies on similar foundations as cooperation between private organizations, i.e. there are a large amount of semi-autonomous agencies that have to find ways to cooperate and coordinate their joint development projects. Thus, inter-organizational relationships between these agencies do probably have some characteristics in common with business relationships in other networks. Another reason is that cooperation in the public sector sometimes involves financial exchange which makes the cooperation in this aspect similar to a business network, which implies that this approach would be able to extend to this area as well.

3 RESEARCH DESIGN

The empirical findings used as illustrations in this paper are collected within an on-going research project concerning e-service development in the public sector in Sweden, as mentioned above. The aim of the project is to develop one-stop government e-services for driving license matters as well as a web-based portal where these e-services and information about the driving license process will be easily accessible. The portal is not explicitly focused on in this paper. The purpose of the project is two-fold; (1) the project aims at facilitating citizens' authority contacts in driving license matters and (2) the project also aims at making the internal processes in the agencies concerning these errands more efficient. An important aim is that the results from the project will have a distinct service focus of an inter-organizational nature, which will decrease the unclear responsibility division between

authorities. The project will also result in a method for development of inter-organizational e-services in the public sector and contribute to the theoretical knowledge on e-service development. Three Swedish agencies are involved in the project besides the researchers; Sweden's County Administrations (SCoA) which organizes the 21 county administrative boards of Sweden, the County Administrative Board of Stockholm and the Swedish Road Administration (SRoA). The research project can be characterized as action research and has the dual purpose of both developing and evaluating e-services. Action research is a qualitative research method that is often used within the information systems field (e.g. Baskerville & Wood-Harper 1996). The empirical findings reported in this paper have not been collected during action research activities such as modeling seminars or project meetings, but through semi-structured interviews with significant actors within the research project. This is a common way to conduct action research, which implies that the researcher alters between the roles of the active change agent and the reflective observer (Checkland 1991). We have interviewed six persons who have the following roles in the three agencies: an IT strategist, a development project leader, a system manager, an internal investigator, a case officer and an IT development manager. The interviewees have been selected in order to reach a broad view of apprehensions in the studied e-service development project. We have asked open questions about how they understand the notion of e-service, what opportunities and threats they apprehend, what kind of cooperation and coordination they regard as necessary for this development project. The interviews had a semi structured and semi standardized design and were recorded. The empirical data has been analyzed in a qualitative, interpretive way (Walsham 1995). Central concepts and categories from the industrial/business network approach (e.g. Håkansson 1982; Axelsson & Easton 1992; Håkansson & Snehota 1995) have been used as a theoretical lens when analyzing empirical data.

4   INTRODUCING THE EMPIRICAL CONTEXT

The background to the project is that everyone in Sweden who wants to get a driving license, first has to apply for a provisional driving license to start driving lessons etc., from the county administrative board in the region where he or she lives. The provisional driving license is approved if the applicant is judged to be able to drive a vehicle in a safe way, thus, the permit is an important aspect of traffic security. The main aim of this regulation is therefore to find those who are not suitable to receive a permit. The permit application is today a paper form that is filled in, signed and sent by mail to the agency. The application has to be complemented with a health declaration, a certificate of good eyesight from an optician, and maybe also an application that a parent will be allowed to serve as a private instructor. These documents are received and reviewed by a case officer at the agency, who decides whether the application is complete or not, and if there is any medical information that must be further examined. The case officer also checks if the applicant has been punished for any crimes (such as being drunk in public places, drug possession, or any traffic misdemeanor). This information is registered in a special database operated by the police force and the case officer has access to this information through SRoA's IT system (the Road Traffic Register). When the provisional driving license has been granted, the county administrative board reports this to SRoA through this inter-organizational IT system. When the applicant has completed the driving test and the theoretical test successfully he or she receives the driving license from the SRoA. This indicates that the administration of driving license issues is a true inter-organizational task that involves several Swedish agencies. In 2004, Sweden's 21 county administrative boards together handled over 210.000 applications for provisional driving licenses. In as many as 80 percent of these cases, the decision was very easy to make – the permit was approved without any further examination. These are called "green cases" by the agency. Handling these green cases is an uncomplicated task, but since there are so many of these cases the review process is nevertheless time-consuming. This is the background to the present research project. By developing an e-service that will make an automated decision in all green cases, resources will be saved at the agency. These resources can instead be used for administration of more complex cases. There are other positive effects that the e-service is expected to give; such as a higher degree of complete applications since the e-service will check for missed information before it

is sent electronically to the agency. The 21 agencies will also be able to handle these issues in a standard way and, thus, avoid any regional differences in judgment. Another important outcome of this e-service is that the applicant will not have to know which agency to contact in different phases of the process, as is the case today. Instead, the e-service will be an example of a one-stop government solution (Kubiceck & Hagen 2000), where the borders between agencies are invisible for the applicants.

5   ANALYSIS AND DISCUSSION

5.1   Exploring Inter-organizational Aspects of e-service Development – Analyzing the Case

In the sections below overall relationship characteristics will be analyzed using the industrial/business network approach (e.g. Håkansson 1982; Axelsson & Easton 1992; Håkansson & Snehota 1995) presented earlier in the paper. The inter-organizational relationship between the SCoA, and the County Administrative Board of Stockholm, and the SRoA will be analyzed. First we will analyze the overall relationship characteristics (continuity, complexity, symmetry and level of formality) followed by relationship dimensions (links, bonds and ties) and finally we summarize the identified e-government challenges in Table 1.

5.1.1   Overall Relationship Characteristics

Continuity: the relationship between SCoA and SRoA is rather stable and mature. The present division of labor between the two parties in the driving license area were established approximately ten years ago. The division of labor is regulated by the Swedish government. There are no present signals that the division of labor will change in the short-term.

Complexity: there are a significant number of actors involved in the relation. SCoA is one part that is represented by 21 county administrative boards representing different regions in Sweden (e.g. Stockholm). This complexity is expressed as severe in the interview with the development project leader, with reference to the development project:

The ambition to work all 21 county administrative boards together in this matter implies a severe complexity, there are so many that need to be in the boat. (Development project leader, SCoA, 2005-09-26)

SRoA is, in this study, mainly represented by the Road and Traffic Register Unit (handling e.g. vehicle registration, provisional driving licenses and full driving licenses). There are also a significant number of contacts between the two parties in order to handle over 210.000 applications for provisional driving licenses each year. Types of contacts represented are: face-to-face (in different joint action groups on the operative and strategic level), informal daily phone or email contacts and established email lists for knowledge sharing. Another example of complexity is the difference in case handling procedures and interpretations of the legal framework between the SRoA's in different regions. On this matter the IT strategist stated the importance of dealing with this matter as:

We cannot have services that differ between the county administrative boards in different regions, with respect to equality before the law, this must be improved. [...] That can be achieved with increased cooperation. (IT strategist, SCoA, 2005-09-26)

Symmetry: the SRoA have an overall responsibility for national road traffic issues sanctioned by the government. With reference to this symmetry aspect the IT strategist expressed the subordinate position of the SCoA in relation to other agencies in general as:

A unique characteristic in our relations to other agencies is that we often have a subordinate position or provide services to central government agencies. (IT strategist, SCoA, 2005-09-26)

The SCoA has at the same time a regional responsibility to handle certain issues in a particular part of the country and specific activities in the provisional driving license handling process (e.g. handling the

review process). The SCoA has also got a specific mission from the government to develop the e-service studied in the present project and paper.

Level of formality: there is a high level of formality concerning the division of labor between the parties regulated by the government. This certainly has an influence on the relationship. The division of labor is discussed, and criticised by actors in both organizations. In the interview a case officer at SCoA states that:

There is a rivalry between the SRoA and the SCoA, some people express that our case handling in driving license matters should be organized within the SRoA instead. (Interview with case officer within SCoA, 2005-10-03)

Utterances similar to this are also identified within interviews at the SRoA. The joint e-service development project that we study, on the other hand, has a low level of formality. The low level of formality in the e-service development project, clashes with the SRoA's way of organizing IT development project work. The SRoA has a tradition of structuring large scale development work, and making use of project management approaches in recurrent projects. The SCoA, and the County Administrative Board of Stockholm, have a more ad-hoc way and culture of handling projects often based on the work of real enthusiasts (project champions).

5.1.2   Relationship Dimensions

Links

There is one significant *technical link* in the present relation. The SRoA supplies the IT system (the Road Traffic Register) that the 21 county administrative boards use as an important tool in the daily work handling applications for provisional driving licenses. In the future this will change from supplying the IT system into supplying only strings of data requested from the 21 county administrative boards.

Administrative and activity links: the total administrative process for handling provisional driving licenses is rather disintegrated. The SRoA provides certain prerequisites (e.g. the IT system, application forms etc.), and has the overall responsibility for the road traffic sector. The different county administrative boards then handle important activities in the review process, and the SRoA handles the payment processes and issues the provisional driving license (and hopefully later on the full driving license). Consequently, there are a number of sequential interdependencies between activities in the processes. The disintegrated process also makes the pattern of communication and cooperation complicated. The complexity is also discussed in "Overall Relationship Characteristics" above. One aspect of activity links in the relation is also the level of adaptation to the other party. The SCoA has to adapt to the IT system supplied by the SRoA; but has some free scope for expressing demands on the IT system and the use of the IT system. However, this will change in the future when SCoA develops a new license handling system as part of the e-service project (and only import data strings as described above). In the present project we have also identified that the SRoA's IT division has started to raise the requirement for SCoA to make certain design decisions in a certain time when developing their e-services. This is done in order to get SCoA to adapt to the SRoA IT application needs and way of managing IT development projects.

Bonds

Actor bonds: some activity links are established and organized in order to strengthen bonds between actors from the different parties. There are mainly two joint action groups; one at the operative level and one at the strategic level. The operative joint action group deals with activities in the license handling process and the use of the IT system. The strategic joint action group deals with decision making and plans at a strategic level, concerning the present process and the IT system support. However, the bonds between the two different joint actions groups are weak. The same actors are not represented in the two groups and the communication between them is weak. Bonds between actors are also influenced by the history of the relation between the parties. As mentioned above the division

of labor is criticised and discussed. It is possible to identify different opinions about the division of labor and activities between the parties, partially related to the historical division, but mainly differences in how to organize future processes and e-services. That sometimes makes the social bonds between the actors rather tensed when interacting in the present project.

Economic bonds: as mentioned briefly above the payment process when handling provisional driving licenses is disintegrated. SCoA performs the main part of the work related to handling applications, while SRoA supplies SCoA with IT system support, application forms, etc. and handles payments from the applicants. The SRoA then compensates SCoA for the handling activities and processes by transferring funds to the organization. But the funds only cover the work for handling the completed granted permits, not the handling of the time-consuming and more complicated "red cases", if a provisional driving license is denied. This latter type of cases remains uncompensated.

Legal bonds: as mentioned above the SCoA has a specific mission from the Swedish government to develop e-services. That mission influences the bonds between SCoA and SRoA. The SRoA has to do what it is required in order to help SCoA to complete their effort to develop e-services. The fact that a public authority should provide what another authority needs within the agency area of expertise is also stated in the laws that regulate the work of agencies in relation to other agencies and citizens. At the same time, the SRoA has the overall responsibility for the national road traffic issues sanctioned by the government. This fact also influences the bonds between the parties and the symmetry (above) in the relation.

Ties

Resource ties: the studied parties pool resources (personnel and know-how) in order to develop e-services in the joint development project, which is managed by the County Administrative Board in Stockholm. Although various resources are pooled in the project, there are some asymmetry aspects in this joint effort. First of all, there are few persons in the project representing SRoA, even though the e-service development is depending on SRoA's participation. It would, for example, be impossible to operate the e-service without appropriate changes in SRoA's IT system. SRoA is also the party who designs the application forms and decides what information that has to be present according to Swedish regulations. This know-how is obviously an important resource in the project. Another asymmetry issue is that the project is initiated and managed by the SCoA, who also has the specific mission from the government to develop the e-service. This results in deviating incentives between the agencies, which can be an explanation to the asymmetry in pooled resources as, for example, the project representation. The e-service development project is an example of a joint project between the two organizations. This project ties resources together, is based on actors bonds and develops actor bonds further. The project also aims at developing technical (IT support) and administrative links (re-designed administrative processes) between the organizations further. Both parties are investing financial resources in this project, both in terms of time spent on project related development and money spent on consultants. Investing financial resources in an inter-organizational project implies, however, a risk of disagreeing priorities regarding the amount of resources (e.g. time and money) between the agencies. The project is not the only reason for financial resource ties between the organizations. Another example of exchange of financial resources between the two organizations is when SRoA collects the payment from the license holder (see "links" above) and transfers this resource to the issuing county administrative board. Knowledge is also invested in the joint project that ties the two parties together. SRoA has experiences of earlier e-service development projects that are useful for this project. Knowledge is also developed as a result of the joint project, both as more experienced individuals in the two organizations and as a resource tie between the agencies, i.e. knowledge about this particular inter-organizational process and experience of inter-organizational e-service development projects.

The empirical findings discussed above are summarized as inter-organizational e-government challenges in Table 1 below.

Table 1. Summary of inter-organizational e-government challenges

Overall Relationship Characteristics	Continuity	Stable and mature relationship, which seems to be less challenging than the opposite
	Complexity	Diverse conceptions about the components of the complexity in the relationship (many agency actors and many citizens' applications)
	Symmetry	Goal conflicts between several overarching roles, responsibilities and missions
	Level of formality	Differing apprehensions about division of labor and responsibility
		Variation in project management approaches/cultures
Links	Technical	Inter-organizational IT system; ownership, dependencies
	Administrative	Disintegrated process with many contacts and deliveries between agencies
		Complicated patterns of communication and cooperation
	Activity	Sequential interdependencies between activities in the two agencies
	Commercial	Not applicable in this case
Bonds	Actor	Gap between participants in working groups on different hierarchical levels within and between agencies
		History influences opinions of the present and future division of working task between agencies
	Economic	Complex principles for compensation; some tasks are resource demanding but uncompensated
	Legal	The agencies have several external assignments and both superior and inferior roles towards each other
Ties	Resource	Asymmetry in incentives for the joint project influences the amount of resources spent on the project
		Knowledge is both a resource used in the project and an outcome from the project; i.e. competence development on individual and organizational level

6 CONCLUSIONS AND FURTHER RESEARCH

In this paper we have been working with the thesis that e-government research would have something to gain from looking at inter-organizational research in the industrial/business network area. We had, through previous research, distinguished similarities between inter-organizational development projects in the public sector and the commercial sector, that made us focus on the possibility of borrowing theoretical concepts from the industrial/business network research. With this theoretical lens we have analyzed empirical data (interviews) from an on-going one-stop government e-service development project, in order to examine whether the theoretical concepts would help us explore any interesting findings in our material. Our conclusions are that the theoretical concepts helped us reach further understanding of the empirical case, than would have been the case if we had been analyzing the material without this conceptual structure. In the spirit of the industrial/business network approach we have also been focusing the present situation and been able to give a rather detailed and fine-grained picture of the problems and challenges in this context. This is a difference compared to many other e-government studies that have been focused on future possibilities and solutions. In this paper

we have used empirical statements as our point of departure. These statements represent different views of the challenges in the studied project. The statements have been systematically arranged and discussed as being related to different relationship dimensions. This way of action has provided us with important insights in this particular development project, of course, but the result can also be used as a tool for analysis and evaluation of other future or on-going inter-organizational e-service development projects.

In relation to the described key areas of barriers (Kubicek & Hagen 2000) and the views of requirements on one-stop government (Wimmer & Tambouris 2002), the application of the industrial/business network approach can be very fruitful for generative purposes when analyzing the inter-organizational relationship between cooperating agencies. By applying the industrial/business network approach on this current development project we gained a deeper understanding of history, motives and incentives that bear impact on the challenges in this particular project. Although commonly identified barriers of one-stop government are very important to address, we believe that this approach, focused on inter-organizational relations, helps us focus better on the inter-organizational aspects of fragmented public agency superstructures. By addressing these inter-organizational categories we reached further understanding of the problems associated with this particular case. Experiences from this and coming applications of this approach can, as we see it, provide added value to the discussion of e-government barriers and key areas as discussed by Kubicek & Hagen (2000), Wimmer & Tambouris (2002) and others.

Of course, there is a danger in transferring theories from one field to another. This is obviously not always applicable, and the explanation force in a theory does not necessarily have to be the same when used in another field. Nevertheless, we argue that the relationship characteristics that we have borrowed from the industrial/business network field have been useful in this case. The concepts related to relationship characteristics and dimensions helped us to focus on certain interesting issues in our empirical material and seem to be able to explain some of the challenges that our interviewees mentioned.

By focusing on relationship characteristics and dimensions, we have consciously been neglecting the perspectives of citizens and civil society in favor of the inter-organizational government perspective. This does not imply that a government perspective is enough in order to understand the complexity of the development of public e-services. Further studies are needed where actors outside the inter-organizational relationship are studied as well. We also identify a need for studies of several e-service projects in order to get variation and more experiences of applying the relationship characteristics and dimensions on e-government research. There is also a need to relate more thoroughly to e-government research, in order to take the discussion of the identified challenges further. Another subject for future studies is to expand the scope from analyzing a particular relation (a dyadic relationship) to studying a network of agencies in order to get the full benefit of important perspectives in the industrial/business network approach.

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