Governance Structures in Cross-Boundary Information Sharing: Lessons from State and Local Criminal Justice Initiatives

Theresa A. Pardo, J. Ramon Gil-Garcia, and G. Brian Burke
Center for Technology in Government, University at Albany, SUNY
Tpardo@ctg.albany.edu

Abstract

Governments are increasingly using collaborative, cross-boundary strategies to face complex social problems. Many of these cross-boundary initiatives have at their core the use, and in many cases, the sharing of information and communication technologies. In fact, government managers and researchers alike are now recognizing the value and great opportunities offered by cross-boundary information sharing, in particular. Current research has identified important factors that affect these cross-boundary information sharing initiatives. Governance structures are among those factors found to be important in cross-boundary information sharing. However, there is little research about the determinants of an effective governance structure in these multi-organizational settings. Based on semi-structured interviews with participants in four state and local government criminal justice initiatives, this paper systematically identifies the determinants of governance structures for cross-boundary information sharing initiatives. By doing so, this study contributes to theory, but also supports the development of more specific guidelines for public managers and other individuals involved in cross-boundary information sharing.

1. Introduction

Governments are increasingly using collaborative, cross-boundary strategies to face complex social problems. Many of these cross-boundary initiatives have at their core the use of information and communication technologies. In fact, government managers and researchers alike are now recognizing the value and opportunities offered by cross-boundary information sharing, in particular. As the delivery and management of public services increasingly rely on complex networks of interdependent organizations (O'Toole, 1997) and the nature of governmental work changes from labor-based production and services to knowledge-based symbolic-analytic tasks which should be integrated collaboratively to address public issues (Agranoff &

McGuire, 2003), network governance is becoming increasingly important for public management.

Current research has identified important factors that affect these cross-boundary information sharing initiatives. However, there is little research about the determinants of an effective governance structure in these multi-organizational settings. Recent research highlights the level of policy, management, and technological changes required to create the kind of high-functioning, cross-boundary capability necessary for cross-boundary information sharing as among the most complex, deep functional and institutional changes (Fountain, 2001; Cook, 2004). Previous studies have identified the challenges to efforts to create this capability as ranging from technological in nature such as data and technical incompatibility to more social in nature such as the lack of institutional incentives to collaborate and the power struggles around multi-organizational settings (Gil-Garcia & Pardo, 2005).

The paper is organized in five sections, including the foregoing introduction. Section two summarizes current research about governance, collaboration, organizational networks, and information sharing. It highlights studies focused on the determinants of governance structures for cross-boundary information sharing. Section three explains the research design and methods used in this study and introduces the cases. Section four presents our analysis and main findings. Finally, section five provides some conclusions as well as some guidance for practitioners drawn from the analysis.

2. Network Governance

The concept of network governance has recently emerged as an alternative to market and hierarchy modes of governance (Powell, 1990; Williamson, 1991; Zaheer & Venkatraman, 1995; Rhodes, 1996; Jones, Hesterly, & Borgatti, 1997; Parker, 2007). Rhodes (1996) refers to network governance as self-organizing, interorganizational networks which span the boundaries of the public, private, and voluntary sectors and are characterized by continuing interactions and interdependence between network

members, asserting that "governance is about managing networks" (p.658). Despite the growing interest in network governance both in the public and private sectors, there is no agreed upon understanding of the concept, and there have been relatively few academic studies that empirically investigate the nature of network governance (Uzzi, 1996; Jones et al., 1997; Hajer & Wagenaar, 2003; Jordan, Wurzel, & Zito, 2005; Parker, 2007).

In the field of public administration and policy, network governance can be defined as "formal and informal structures comprised of representatives from governmental and nongovernmental agencies working interdependently to jointly formulate and implement policies and programs" (Agranoff & McGuire, 2003, p.552). Considine and Lewis (1999; 2003) claim network governance is characterized by rationality based on a shared organizational culture, coproduction of service by clients, suppliers, and producers, flexible organizational structure, and services tailored to the need of individual clients.

From the viewpoint of political science, not all network arrangements can be regarded as governance structures. According to a recent study by Parker (2007), a network arrangement must serve the governance functions of collective decision making, social steering of behavior, and negotiation and coordination of activities in order to be considered networked governance. The author presents three preconditions for a network to satisfy such governance roles. First, all nodes in the network should be linked directly or indirectly in order to avoid a critical break in communication and information sharing. Second, the network should incorporate the range of actors and institutions whose activities impact on governance outcomes. Third, trust, mutuality, and common identity should exist between the members of the network.

2.1. Network Governance and IT Success

Information technology (IT) governance can be defined as "the distribution of IT decision making rights and responsibilities among enterprise stakeholders, and the procedures and mechanisms for making and monitoring strategic decisions regarding IT" (Peterson, 2004, p.8). Weill and Woodham (2002) consider an effective IT governance structure as "the single most important predictor of getting value from IT" (p.2). Traditionally, the IT governance literature has primarily focused on three different designs of IT decision-making structures: centralized, decentralized, and federal configurations (von Simson, 1990; Sambamurthy & Zmud, 1999, 2000; Peterson, O'Callaghan, & Ribbers, 2000).

Many researchers agree that the federal configuration, a hybrid of centralized infrastructure control and decentralized application control, is the dominant structure in contemporary organizations (Hodgkinson, 1996; Sambamurthy & Zmud, 1999; Peterson et al., 2000; Ribbers, Peterson, & Parker, 2002). With the emergence of digital convergence, hypercompetition, and new electronic network organizations, however, the need is arising for a new relational structure of IT governance that can replace a monolithic governance arrangement and deliver IT capabilities through dynamic arrays of intra- and inter-organizational relationships (Sambamurthy & Zmud, 2000; Ribbers et al., 2002).

Empirical research on the influence of IT governance on IT success in public organizations is scarce, which is likely due to the recentness of the phenomenon and the lack of clear understanding of the concept of IT governance. An example is a recent study of Malaysian government agencies (Hussein, Karim, Mohamed, & Ahlan, 2007) which finds decision-making structure, defined as "the type of control or delegation of decision-making authority throughout the organization and the extent of participation by organizational members in decision making pertaining to IT/IS" (p.4), significantly and positively influences the dimensions of IS success in public sector organizations. Therefore, recent literature clearly supports the importance of governance structures as a factor influencing collaborative efforts and IT success in organizations. This paper extends this notion to cross-boundary information sharing initiatives (see Figure 1). Drawing on the above literature this paper defines cross-boundary governance as the decision making structures that form within and across the formal and informal networks of organizations that are created to collaboratively formulate and implement cross-boundary information sharing initiatives.
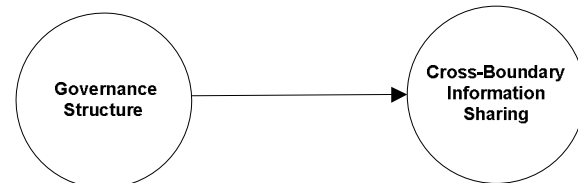

Figure 1. Governance Structure influences Cross-Boundary Information Sharing

2.2. Determinants of Governance Structures for Cross-Boundary Information Sharing

A number of studies have investigated the factors affecting the characteristics of IT governance structures. An influential stream of this research

highlights how contingency factors influence the structure of IT governance and posits that the best IT governance solution for an organization is contingent on several of these factors (Brown, 1997; Sambamurthy & Zmud, 1999; Brown & Grant, 2005). The individual contingency analysis of IT governance focuses on one or more contingency factors that influence the choice of IT governance design in an organization (i.e., centralized, decentralized, and federal mode), without considering the interactions between multiple individual factors (Brown & Grant, 2005). A number of empirical studies have identified organizational governance structure, competitive strategy, and line manager's IT management experience as significant in this regard.

The decision-making structure of an organization, or corporate governance structure, has been found to significantly affect the IT governance arrangements of the organization. A number of researchers find that centralized organizations tend to adopt a centralized IT governance design and that organizations with decentralized decision-making structure tend to decentralize their IT governance structure as well (Ein-Dor & Segev, 1982; Leifer, 1988; Ahituv, Neumann, & Zviran, 1989; Tavakolian, 1989). According to an empirical study of large organizations by Tavokolian (1989), organizations that adopt a conservative competitive strategy tend to have a centralized IT governance structure, while organizations with an aggressive competitive strategy tend to have a decentralized information technology framework. IS researchers also find a negative link between the IT management experience of line managers in an organization and the degree of centralization of IT decision-making structure in the organization (Boynton, Jacobs, & Zmud, 1992; Brown & Magill, 1998; Sambamurthy & Zmud, 1999).

As the size of an organization grows, its overall decision-making structure typically becomes divisionalized and decentralized (Blau, 1970; Blau & Schoenherr, 1971). However, many empirical studies on IT governance have not been able to find a statistically significant relationship between the size of a firm and its IT governance structure (Olson & Chervany, 1980; Ahituv et al., 1989; Tavakolian, 1989; Clarke, 1992). Ahituv et al. (1989) and Clarke (1992) also find that the type of industry in which a firm operates has no significant influence on the IT governance of the firm.

Building on and expanding the approaches of single contingency analysis, multiple contingency analysis of IT governance examines the affects of interacting and conflicting contingency factors on the IT governance structure of an organization. Recent studies that adopt the non-uniform governance framework analyze different structures of IT governance for different IT functions or business units within an organization rather than the overall, uniform IT decision-making structure of an organization, providing a more comprehensive framework for determinants of IT governance (Brown & Magill, 1998; Brown & Grant, 2005). Most previous studies do not take into consideration the nature of public organizations and the inter-organizational aspects of the new way governments operate and, therefore, they do not provide specific guidance for public sector, cross-boundary information sharing initiatives in a systematic way.

This paper explores some of the key factors that exist within the public sector environment that influence the interorganizational governance for cross-boundary information sharing initiatives. More specifically, based on the analysis of four cases of justice information sharing in four different government settings, this paper describes specific determinants that influenced the development of decision making structures across the formal and informal networks of organizations created to collaboratively implement cross-boundary criminal justice information sharing initiatives.

3. Research Methods and the Cases

This paper is based on a study conducted by the Center for Technology in Government supported by a grant from the National Science Foundation. The research included eight in-depth case studies of state-level efforts to create the ground work for sharing information across agencies and across government levels in two policy domains: public health and criminal justice.

Approximately 70 semi-structured interviews and facilitations were conducted with public managers and other actors involved in criminal justice and public health information sharing initiatives at the state and local level. The public health cases were focused on the response to or preparation for the West Nile Virus outbreak in Colorado, Oregon, Connecticut, and New York. The criminal justice cases included cross-boundary information sharing initiatives in the states of New York, North Carolina, and Colorado, as well as in New York City.

Interviews and facilitations were transcribed and analyzed following an inductive logic approach and using grounded theory techniques (Strauss & Corbin, 1997; 1998). The research team used a qualitative

analysis software tool to support coding and analysis activities. Following a systematic iterative process, the research team identified critical factors and processes involved in sharing information across levels and agencies in government. The research team also identified how those factors and processes varied for different types and degrees of information sharing. For this paper the team focused on the subset of variables related to governance structures. Propositions about how multiple variables affect the existence and nature of governance structures in cross-boundary information sharing initiatives were generated and refined through multiple iterations of qualitative data analysis. For this paper, we discuss these factors and the propositions generated in the context of the four criminal justice cases. Each case is described briefly first as background for the analysis. For each description, particular attention is paid to the cross-boundary governance structure put in place to guide decision-making on the initiative.

3.1. New York State

In the mid 1980s, the State Division of Criminal Justice Services (DCJS) undertook a major initiative to assess the administration of criminal justice in New York and identify elements of the criminal justice process where the introduction of standardization and automation would yield substantial improvement in the operation of individual agencies and the effectiveness of the system as a whole. The New York State Division of Criminal Justice Services (DCJS) is a multi-function criminal justice support agency. In addition to providing support to other justice agencies in the state in a variety of areas DCJS is also charged with collecting and analyzing statewide crime data. Among its other responsibilities are advising the Governor on programs to improve the effectiveness of New York's justice system.

In response to the expressed needs of users from other local and state criminal justice agencies, DCJS developed eJusticeNY. When first introduced in late 1999, eJusticeNY was primarily a web-based tool for accessing the State's Criminal History Repository. In 2003, per then Governor Pataki's direction, the Director of Criminal Justice charged the CIOs and IT directors of the state criminal justice agencies to develop a framework to fulfill the vision of "one-stop shopping" access to the information needed by multiple users of criminal justice data.

The initial phase of this initiative involved the creation of a statewide governance structure with representation from the major state criminal justice agencies to fulfill the need for an intergovernmental coordinating body that could manage this complex task. The result was the State's Integrated Justice Advisory Board (IJAB). IJAB is comprised of senior technology managers for all of the State's criminal justice agencies who collectively serve to coordinate interagency technology initiatives and advise the State's Director of Criminal Justice on justice information sharing and systems integration projects.[1]

3.2. Colorado

The Colorado Legislature mandated the development of the Colorado Integrated Criminal Justice Information System (CICJIS) beginning in 1995. House Bill 95-1101 defined the composition of CICJIS to include the Departments of Public Safety, Corrections, and Human Services, and the Colorado Judicial Branch. Of note, in Colorado, the Department of Public Safety encompasses five divisions that include the Colorado State Patrol and the Colorado Bureau of Investigation.

The legislation directed the executive directors of each agency to cooperate in the development of a strategic plan for the implementation and maintenance of an integrated criminal justice information system. The initial focus of the plan was on improving the state's "disposition matching." Disposition matching is the process of connecting the disposed court case with an arrest on the defendant's RAP sheet.[2] Disposition matching represents a cross-boundary criminal justice type business process involving the collecting and sharing of specific data from all of the involved criminal justice agencies related to individuals from the point of arrest to a court decision. The General Assembly adopted the strategy outlined in that plan, formally included the Colorado District Attorneys Council in the governance structure, and funded the effort through Senate Bill 96-221. Another legislative addition to the cross-boundary governance structure included the creation of a CICJIS Chief Information Officer (CIO). The CICJIS CIO was charged with facilitating the coordination of the involved agencies and managing the CICJIS technical infrastructure. System design was approved on September 9, 1996, and development began immediately thereafter. The final phase of CICJIS was implemented in the summer of 1999. CICJIS is an independent program that relies on the equal participation of the five CICJIS agencies. The CICJIS network and middleware link the existing agency databases/platforms and give

---

[1] See http://criminaljustice.state.ny.us/ojis/ejusticeinfo.htm for more information.

[2] See the "CICJIS Overview" document at http://www.state.co.us/gov_dir/cicjis/About.html.

users the appearance of querying one database, when in reality the query goes against databases from five agencies.[3]

3.3. North Carolina

A North Carolina legislative mandate passed in 1996 required state agencies to move from their legacy IT systems to distributed, client/server information systems. In 1998, management at the North Carolina Department of Justice (NCDOJ) began to address these technology and compliance issues related to the Criminal Justice Information System (CJIS). In North Carolina, in addition to providing legal representation and advice to all state government departments, agencies and commissions, the Attorney General and the Department of Justice also provide assistance to North Carolina law enforcement agencies. As early as 1969, NCDOJ was mandated to serve as the criminal justice and public safety gateway to the nation as well as to state and local law enforcement entities. NCDOJ is authorized to collect, store, and disseminate criminal history and criminal statistical information.

NCDOJ's former mainframe environment supported only a proprietary communications protocol that limited the ability to communicate with other agencies. Of note, North Carolina's state IT organization at the time had established the statewide standard requiring agencies to move toward enterprise Message Queuing (MQ). To address this requirement in the context of multiple state agencies with diverse missions and varying degrees of technical capabilities, NCDOJ designed and implemented an open system law enforcement technical architecture. They replaced the proprietary-protocol end user interface with a browser-based interface capable of providing users with access to all currently accessible data. The North Carolina Department of Justice Information Technology Division's migration from their existing mainframe began in 2000. On January 15, 2003, the new infrastructure and the new end-user interface were implemented.

3.4. New York City

The New York County District Attorney's Office investigates and prosecutes over 100,000 criminal cases annually. The Office employs close to 500 Assistant District Attorneys and approximately 700 support staff, making it one of the largest law firms in the nation.[4] In the late 1990s faced with aging computer systems and applications as well as a fragmented IT infrastructure, the office of the New York City District Attorney was determined to design and implement a modernized and integrated IT architecture. Within the DA's office there are three basic units: the Trial Division, which is the largest part of the office; the Appeals Bureau; and the Investigation Division. The Trial Division in particular was very involved in the development of the DA Office's new IT architecture to include one major system that significantly impacted the work accomplished by these attorneys.

Within the Trial Division, there are six trial bureaus comprised of approximately 40-50 people each. The Management Information Systems department of the DA's Office was tasked with coordinating with the Trial Division and the six trial bureaus to formulate and implement the new IT architecture. Prior to the new architecture, there was little in the way of standardized work processes related to the attorney's filling out of subpoenas, witness letters, and motions. The new electronic Work Bench, which was a desktop application for the lawyers, provided access to standardized forms for all attorney's across the six bureaus. In addition, the new system allowed attorney's to search and share previous forms and other documentation generated by fellow attorneys from past and even ongoing cases to support new work.

4. Analysis and Findings

Previous research has established the importance of governance in interorganizational settings. This paper extends that research by systematically analyzing the determinants of governance structures for cross-boundary information sharing initiatives. In this section we present our main findings and a series of propositions about these relationships. Six propositions in all are presented; each is support through the use of quotes from the cases.

4.1. Determinants of Governance Structures

The increased complexity of public problems is becoming a powerful incentive for government agencies to collaborate and share information, forming not only informal relationships, but alto formal governance structures. The inter-organizational governance structures within cross-

---

boundary information sharing initiatives are affected by the particular information needs of the agencies involved and the demands of the problems they are facing. Referring to the statewide criminal justice information system and the governance structure in place to guide that initiative, a state agency level CIO from Colorado explains,

"It was basically designed to do what we are doing and that is to share data. Now the primary thing is to, and the difficult thing is to look at all aspects of data that needed to be captured for each agency involved. And that took a lot of doing..... And so in a design, you try to get all that information that you can and put that together and then build your design of the data transfers from that..... But you do your best to try to identify those data elements involved from each agency that the other agencies have, want or need. And that was part of, a big part of the original design."

The nature of information needs among the participating agencies of a cross-boundary information sharing initiative influences governance in terms of decision making on selecting appropriate technological solutions. According to a state agency level IT Director from North Carolina involved in criminal justice information sharing,

"We're tasked with getting that information to law enforcement .....that information is important to law enforcement for them to have so therefore we eat the costs of doing that. And that's one of the reasons that we picked this [technology approach] 'cause we had this vision to get the information from the jails, get it from the local PDs, get it from all these different places."

P1: Knowledge of information needs affects governance structures in cross-boundary information sharing initiatives.

A good understanding of the general policy, political, economic, and even technological environment surrounding a cross-boundary information sharing initiative and the organizations involved also plays an influential role on the characteristics of the resulting governance structures. Knowledge of the environment helps those that are involved in decision making for an initiative identify emerging problems and potential opportunities and adjust their decision-making accordingly. In North Carolina, after several years into the statewide criminal justice information sharing initiative, it became apparent to program leaders that participating agencies were unable to adapt to the technology

standard established by the state. According to the CIO of the North Carolina initiative,

"Once we got into this, and we're talking three years into this project, then those standards began to break down. And they came to realize that, the other agencies, and I think by and large our state CTO came to realize as well, that we can't standardize on a particular product--we have to standardize on a technology."

In New York City, initiative leaders used the need to upgrade outdated computer systems as an opportunity to rebuild the District Attorney's Office's IT architecture.

"A lot of operational issues were at play as well, just good old-fashioned--we had had very old PCs at the time and were running very old applications. And there was a real need for us, if we were going to do anything better or more sophisticated, to get rid of the old stuff. But then the simple question is, what was essential on the old stuff that had to be done in order to replace it. I mean, there were a lot of wonderful things we wanted to do but the bottom line is what it would have to do to replace. And that became a major driving force."

Both program and IT leadership in the DA's office recognized they had an opportunity to not only modernize the technical infrastructure but also to improve the work processes of the organization. This knowledge resulted in the design of a management plan for the transition that ensured the coordinated efforts of the six bureaus within the trial divisions. The creation of this structure allowed for the full consideration of what needed to be done versus what might be nice to do to get the DA's office up and running on a new enterprise-wide application that allowed for the necessary and also improved information sharing.

P2: Knowledge of the environment affects governance structures in cross-boundary information sharing initiatives.

The degree to which key actors were willing to develop processes to accommodate diversity among participating organizations played a role in determining governance structures for the cross-boundary information sharing initiatives in the cases. While the many state and local agencies involved in the criminal justice policy domain have highly aligned missions, their goals as well as how they

conduct their day-to-day business differ. The cases illustrate varying degrees of willingness to accommodate diversity. In New York, as in many other states, the state police are unique among their criminal justice agency counterparts. Knowledge of these differences and willingness to accommodate them were found to be critical to the creation of an effective governance structure. According to one state-level manager from the New York State Police,

> "We're dealing with officer safety, the cop on the street, you know, a guy pulls a car over-- we need to know right away that that car's been stolen or the person in that car may be wanted. So as much as it's a criminal justice community, there seems to be a little bit of a line between the unique law enforcement needs as opposed to the need to the remainder of the criminal justice community, for the courts, the probations, the corrections."

In North Carolina, a combination of diverse size, business processes, and technological capabilities among state agencies involved in the criminal justice information sharing influenced the formulation and implementation of their initiative. It also influenced how decisions were made, in particular processes had to be in place to ensure that the diversity of participating agencies were addressed and then taken into account during final decision making. Making technology choices for example required processes that allowed for the consideration of a range of conditions existing across all those involved in the network, according to an IT manager working with North Carolina's Department of Justice,

> "But see, the others like DMV, they're still on the mainframe and so is DOC [state department of corrections]. I don't even know that they have plans to move from the mainframe--their business is so big. So they will be also sending us flat files. So that, you know, working with other agencies-- that's the problem, is that the other agency has to be able to send you XML. And generally these two agencies are using large mainframes that don't use, don't generate XML."

P3: The degree of willingness to accommodate diversity of participating organizations and their goals affects governance structures in cross-boundary information sharing initiatives.

Knowledge sharing about other participating organizations became critical in the formation of the governance structures in the cases. What actors in each organization knew about other participating organizations appears to have influenced the ability of those organizations to "work interdependently to jointly formulate and implement policies and programs"; which, as stated above, is a characteristic of network governance. According to a state agency level CIO working on criminal justice information sharing,

> "Again, before CJIS, everybody was producing all this information and throwing it at the other person, not knowing what impact it had on them. And some things were just silly and stupid. When we started CJIS, we had a dispo-match rate of zero percent in Douglas County. And the whole reason was the arrest number was on the second page of the paperwork. We moved the arrest number to the first page; they no longer had to turn the page and they weren't entering the wrong number and their dispo-match rate steadily climbed to where it is today, somewhere in the high eighties, low nineties. And some things were as simple as that. The DA was producing this form, didn't realize that it caused so much [trouble]…"

P4: Knowledge about participating organizations affects governance structures in cross-boundary information sharing initiatives.

Legislation, at both the state and federal level, appears to have had a direct impact on the governance structures in most of the cases. For example, in Colorado, federal legislation created the conditions for better information sharing among state and local level criminal justice agencies in the early 1990s and set the groundwork for future work. According to a state agency level CIO in Colorado,

> "It all began, I guess it was shortly after the Brady bill was passed, the Brady gun check bill, which required some more bilateral data transfers between the courts and criminal justice, police agencies."

Later, in the mid-1990s, in response to a realization that the state justice agencies were not collaborating and sharing information as well as they should the state legislature passed legislation mandating they do so. To ensure the kind of collaboration the legislature identified as necessary to support cross-boundary information sharing, this legislation went into specifics about implementation. The legislation dictated the specific composition, structure, and purpose of such governance. Speaking about the influence state legislation, a state-level CIO explained,

"The State of Colorado in and of itself had been trying for over twenty years to do something with integrated justice. And that there was difficulty in getting the respective agencies to work together. It actually took a legislative mandate for this to happen. They initially mandated a plan. I think the idea was that if they [the executives of the state criminal justice agencies] didn't come up with a plan, the legislature would come up with one for them. And so that kind of made it happen on a higher level, from the standpoint of the executive director saying, 'O.K., you guys need to figure out how to do this.' And I think that was really the start of when what we call the task force now, really started meeting and talking through some things."

P5: Legislation affects the existence and nature of governance structures in cross-boundary information sharing initiatives.

The cases illustrate how the involvement of executives served as a determinant of the governance structure in the four initiatives. The nature of involvement varied across the cases and in some cases the nature of the involvement changed throughout the initiative. In the case of Colorado, the preferences of the sitting governor and the need for administrative support determined the placement of the governance body within one of the five participating agencies. According to a state agency level CIO,

"And that is just so huge and that's why we got stuck putting CICJIS under the Department of Public Safety. We did it because of the current execs at the current time. And the political environment, the governor at the time, did not like creating new agencies. So we had to slot it somewhere; it needed to have a budget, you know, it needed to have someone who could do the budget. It needed administrative support."

Similarly, early in the process in New York a new executive came on board. He was very interested in the IJAB initiative and through his attention the initiative became much more critical to the overall justice environment in the state. According to a state agency IT manager,

"And this new guy comes in and is a complete new personality. And I think they presented where things were coming. And of course we're building governance structure, a governance council. It was going to be a fairly

high thing and I think this guy looked at it.... and he decided he was going to put his stamp on what he thought it should be. So I think it was more like the meteorite strike-type thing, you know, events suddenly, precipitously changed."

The interest of the new executive as well as the realization that something might actually come out of the design process for the new governance structure changed the way current IT executives viewed the process. The role executives played changed when they realized that a workable structure may actually be produced and that they would have to live by it. One state agency IT manager commented in this way about the changing role of executives in the process,

"Well, I think they got a directive that said, 'You will do this', right? So that seems to tell people that they are going to do it. And it was interesting in that effort, in the sense that they kind of sent in the second string to do that. And then when it looked like something real was happening, then the first string kind of came back into the picture. So it started with the first string and they kind of said, well, this doesn't look like it's going to be that important so they sent in the second string. And then they said, oh, shoot, we're going to end up with something here--we better get back involved. So then they came back involved and kind of decided that this is what we're going to do, even though the second string had a little different picture of what we wanted to do."

The "second string" had identified a one-agency one-vote approach to decision making on standards and policies. The "first string" changed this policy and others to put the weight of the authority in the hands of the four large justice agencies and reduced the potential of small agencies, even when working in collaboration, to influence the outcome of decisions.

P6: Executive involvement affects governance structures in cross-boundary information sharing initiatives.

5. Conclusions

The study offers valuable theoretical and practitioner insights into the determinants of governance structures for cross-boundary information sharing initiatives. The six propositions drawn from the analysis of the cases highlight the critical role that knowledge of information needs, knowledge of environment, diversity of participating organizations and their goals, knowledge of participating organizations, enabling legislation and executive

involvement play in the formation of governance structures for cross-boundary information sharing initiatives. In particular, each proposition provides specific knowledge about how diverse factors in the environment influence governance structures and functions such as collective decision making, social steering of behavior, and negotiation and coordination of activities.
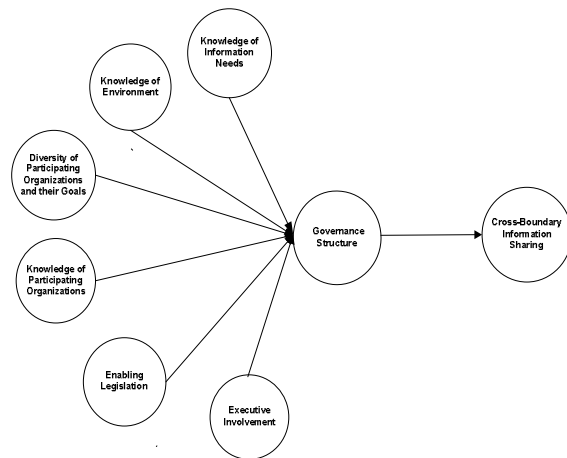

Figure 2. Determinants of Governance Structures in Cross-Boundary Information Sharing Initiatives

The propositions presented in this paper could be refined using additional cases and their transferability to significantly different organizational contexts could be assessed. They could also be tested through the development of a survey and their generalizability could be extended to multiple policy domains. Future research should expand the contribution of this study in these two important ways.

Some practical lessons can also be derived from this study. For example, given the presence and importance of three different types of knowledge – of the environment, of participating organizations, and of information needs – knowledge sharing within networks of organizations becomes increasingly relevant to project success. Investing in efforts to share knowledge about the environment for example, may influence the formation of shared understanding about the needs of users. Investing in knowledge sharing among the collaborating agencies may provide new appreciation of the need for and value of flexible organizational structures. Understanding the interplay between enabling legislation and executive involvement is shown by the cases to be important to efforts to design legislation and to make decisions about the roles of executives as they carry out legislation.

References

Agranoff, R., & McGuire, M. (2003). Governance networks. In J. Rabin (Ed.), *Encyclopedia of public administration and policy* (pp.552-557). New York: Marcel Dekker.

Ahituv, N., Neumann, S., & Zviran, M. (1989). Factors affecting the policy for distributing computing resources. *MIS Quarterly, 13(4)*, 388-402.

Blau, P. M. (1970). A formal theory of differentiation in organizations. *American Sociological Review, 35*, 201-218.

Blau, P. M., & Schoenherr, R. A. (1971). *The structure of organization.* New York: Basic Books.

Boynton, A. C., Jacobs, G. C., & Zmud, R. W. (1992). Information technology management: Just whose responsibility is it? *Sloan Management Review, 4*, 32-38.

Brown, A. E., & Grant, G. G. (2005). Framing the frameworks: A review of IT governance research. *Communications of the Association for Information Systems, 15*, 696-712.

Brown, C. V. (1997). Examining the emergence of hybrid IS governance solutions: Evidence from a single case site. *Information Systems Research, 8(1)*, 69-95.

Brown, C. V., & Magill, S. L. (1994). Alignment of the IS functions with the enterprise: Toward a model of antecedents. *MIS Quarterly, 18(4)*, 371-404.

Brown, C. V., & Magill, S. L. (1998). Reconceptualizing the context-design issue for the information systems function. *Organization Science, 9*, 176-195.

Clarke, T. D. (1992). Corporate systems management: An overview and research perspective. *Communications of ACM, 35(2)*, 61-86.

Considine, M., & Lewis, J. M. (1999). Governance at ground level: The frontline bureaucrat in the age of markets and networks. *Public Administration Review, 59*, 467-480.

Considine, M., & Lewis, J. M. (2003). Bureaucracy, network, or enterprise? Comparing models of governance in Australia, Britain, the Netherlands, and New Zealand. *Public Administration Review, 63*, 131-140.

Cresswell, A.M., Burke, G.B., Pardo, T.A. (2006) *Advancing Return on Investment Analysis for Government: A Public Value Framework*, The Center for Technology in Government, University at Albany.

Dawes, S. S. (1996). Interagency information sharing: Expected benefits, manageable risks. *Journal of Policy Analysis and Management*, 15(3), 377-394.

Dawes, S. S., & Pardo, T. A. (2002). Building Collaborative Digital Government Systems. Systematic Constraints and Effective Practices. In W. J. McIver & A. K. Elmagarmid (Eds.), *Advances in Digital Government. Technology, Human Factors, and Policy*

(pp. 259-273). Norwell, MA: Kluwer Academic Publishers.

Ein-Dor, P., & Segev, E. (1982). Organizational context and MIS structure: Some empirical evidence, *MIS Quarterly*, 6(3), 55-69.

Gil-Garcia, J. R., & Luna-Reyes, L. F. (2006). Integrating Conceptual Approaches to E-Government. In M. Khosrow-Pour (Ed.), *Encyclopedia of E-Commerce, E-Government and Mobile Commerce* (pp. 636-643). Hershey, PA: Idea Group Inc.

Gil-Garcia, J. R., & Pardo, T. A. (2005). E-Government Success Factors: Mapping Practical Tools to Theoretical Foundations. *Government Information Quarterly*, 22(2), 187–216.

Gil-Garcia, J. R., Chengalur-Smith, I., & Duchessi, P. (2007). Collaborative e-government: Impediments and benefits of information-sharing projects in the public sector. *European Journal of Information Systems*, 16(2), 121-133.

Hajer, M. & Wagenaar, H. (2003). Introduction. In M. Hajer, & H. Wagenaar (Eds.), *Deliberative policy analysis: Understanding governance in the network society* (pp.1-32). Cambridge: Cambridge University Press.

Hodgkinson, S. T. (1996). The role of the corporate IT function in the federal IT organization. In M. J. Earl (Ed.), *Information management: The organizational dimension* (pp.247-269). Oxford: Oxford University Press.

Hussein, R., Karim, N. S. A., Mohamed, N., & Ahlan, A. R. (2007). The influence of organizational factors on information systems success in e-government agencies in Malaysia. *Electronic Journal on Information Systems in Developing Countries, 29(1)*, 1-17.

Jones, C., Hesterly, W. S., & Borgatti, S. P. (1997). A general theory of network governance: Exchange conditions and social mechanisms. *Academy of Management Review, 22*, 911-945.

Jordan, A., Wurzel, R. K. W. & Zito, A. (2005). The rise of "new" policy instruments in comparative perspective: Has governance eclipsed government. *Political Studies, 53*, 477-496.

Leifer, R. (1988). Matching computer-based information systems with organizational structures. *MIS Quarterly, 21(1)*, 63-74.

O'Toole, L. J., Jr. (1997). Treating networks seriously: Practical and research-based agendas in public administration. *Public Administration Review, 57*, 45-52

Olson, M. H., & Chervany, N. L. (1980). The relationship between organizational characteristics and the structure of the information services function. *MIS Quarterly, 4(2)*, 57-69.

Parker, R. (2007). Networked governance or just networks? Local governance of the knowledge economy in Limerick (Ireland) and Karlskrona (Sweden). *Political Studies, 55*, 113-132.

Peterson, R. (2004). Crafting information technology governance. *Information Systems Management, 21(4)*, 7-22.

Peterson, R. R., O'Callaghan, R., & Ribbers, P. M. A. (2000). Information technology governance by design: Investigating hybrid configurations and integration mechanisms. *Proceedings of the Twenty-First International Conference on Information Systems, Brisbane, Australia.* 435-452.

Powell, W. W. (1990). Neither market nor hierarchy: Network forms of organization. *Research in Organizational Behavior, 12*, 295-336.

Prins, C. (2001). Electronic Government. Variations on a Concept. In J. E. J. Prins (Ed.), *Designing E-Government. On the Crossroads of Technological Innovation and Institutional Change* (pp. 1-5). The Hague, Netherlands: Kluwer Law International.

Rhodes, R. A. W. (1996). The new governance: Governing without government. *Political Studies, 44*, 652-667.

Ribbers, P. M. A., Peterson, R. R., & Parker, M. M. (2002). Designing information technology governance processes: Diagnosing contemporary practice and competing theories. *Proceedings of the Thirty-Fifth Annual Hawaii International Conference on System Sciences.* 3143-3154.

Sambamurthy, V., & Zmud, R. W. (1999). Arrangements for information technology governance: A theory of multiple contingencies. *MIS Quarterly, 23*, 261-290.

Sambamurthy, V., & Zmud, R. W. (2000). Research commentary: The organizing logic for an enterprise's IT activities in the digital era – A prognosis of practice and a call for research. *Information Systems Research, 11*, 105-114.

Tavakolian, H. (1989). Linking the information technology structure with organizational competitive strategy: A survey. *MIS Quarterly, 13(3)*, 308-318.

Uzzi, B. (1996). The sources and consequences of embeddedness for the economic performance of organizations: The network effect. *American Sociological Review, 41*, 322-388.

von Simson, E. (1990). The "centrally" decentralized IS organization. *Harvard Business Review, 68(4)*, 158-162.

Weill, P., & Ross, J. W. (2004*). IT governance: How top performers manage IT decision rights for superior results.* Boston: Harvard Business School Press.

Weill, P., & Woodham, R. (2002). *Don't just lead, govern: Implementing effective IT governance* (CISR Working Paper No. 326). Center for Information Systems Research, MIT Sloan School of Management. Retrieved June 4, 2007, from Massachusetts Institute of Technology Web site: http://dspace.mit.edu/bitstream/1721.1/1846/2/4237-02.pdf

Williamson, O. E. (1991). Comparative economic organization: The analysis of discreet structural alternatives. *Administrative Science Quarterly, 36*, 269-296.

Zaheer, A., & Venkatraman, N. (1995). Relational governance as an interorganizational strategy: An empirical test of the role of trust in economic exchange. *Strategic Management Journal, 16(5)*, 373-392.