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The Role of Institutional Logics in the Design of E-Governance Systems

Anuradha Mundkur
Murali Venkatesh

ABSTRACT. E-governance is premised on the notion that information technology can be used to reconfigure relations among various government departments as well as between governments and other stakeholders such as the private sector and civil society. This study uses social construction of technology (SCOT) and institutional theory as the lenses through which to deconstruct the process involved in using information technology to enhance transparency and accountability of an urban local government in India. It highlights how diverse stakeholders, by tapping into existing notions of good governance, articulated the project as resolving the need for timely, accurate, and structured information for decision-making. This problem definition led to the recognition that fundamental to transforming how the urban local government works was a reform in its financial management systems.

KEYWORDS. E-governance, institutional logics, institutional theory, social construction of technology

The speed and cost effectiveness of disseminating large volumes of information to those who have access to information and communication technology (ICT) has led to the belief that investing in e-governance will lead to more efficient, transparent, and accountable governments. The technology push argument suggests that there are significant cost efficiencies that can accrue from joined-up government or a government based on cross-agency functioning and dependency on public–private networks (Boston, Martin, Pallot, & Walsh, 1996; Hood, 1995; Ingraham, 1997; Nye, 1999).

A review of the available literature suggests a lack of emphasis on studying how e-governance systems are designed. Since such systems encapsulate the structures, routines, norms, and values implicit in the rich contexts within which they are embedded (Benbasat & Zmud, 2003, p. 186), the development trajectory of such a project is not predetermined but contingent upon broad social contexts.

By locating the development of an e-governance system in a historicized field of inter-organizational relations and describing the microsocial developmental setting, this study is able to clearly

Anuradha Mundkur is a Lecturer at the Centre for Development Studies, Flinders University, Australia, where she is also the Associate Director of the Gender Consortium. Anuradha is particularly interested in exploring issues related to the sustainable use of information and communication technologies for development and good governance and the use of new technologies to strengthen knowledge processes within organizations working on women's issues.

Murali Venkatesh is an Associate Professor at the School of Information Studies, Syracuse University, where he also heads the Community & Information Technology Institute (CITI). Murali's research interests are in the design and use of broadband telecommunications technologies.

Address correspondence to: Anuradha Mundkur, Lecturer, Centre for Development Studies, Flinders University, GPO Box 2100, Adelaide 5001, South Australia (E-mail: anuradha.mundkur@flinders.edu.au).

explain the networks of interests that affect the outcome of such projects (Heeks, 2004). To highlight this dynamic relationship, the study takes the deployment of an information technology (IT)-enabled financial management system by a city-level administration in India as its case. This system was part of an effort to create a simple, moral, accountable, responsive, and transparent (SMART) government (Sachdeva, 2002).

The article is structured as follows: It begins with a critical review of the literature, highlighting issues that have been investigated under the rubric of e-governance and the tendency to treat e-governance systems as unproblematic and objective, and external factors that bring about organizational change. The next section delineates the theoretical frameworks, social construction of technology (SCOT), and institutional theory that guided the study and which the research design employed and includes a description of the case. The results of the research are presented, and the article concludes with a discussion on the theoretical and practical implications of the study.¹

A CRITICAL REVIEW OF THE LITERATURE

The literature abounds with different meanings for the terms e-government and e-governance. Scholl and Pardo's (2002) overview of definitions shows that some definitions focus on service provision and the benefits that derive from it, while others expand the concepts to include citizen participation in administrative and political processes. The understanding of e-governance in this study is based on Paquet's (1999) notion of governance. According to Paquet, governance is concerned with guiding processes in an organization that will determine how it steers, coordinates, and shapes its evolution when resources, power, and information are distributed. It is the full set of relationships between the organization's management, employees, and stakeholders, and the formal and informal structures that shape those relationships (Paquet, 1999). Thus e-governance refers to the use of ICTs by state and nonstate actors to (a)

facilitate decision-making and policy-making and (b) to interact with different stakeholders, such as private sector, civil society, citizens, other national governments, or international organizations on a wide range of activities such as service delivery, procurement of services, voting, or public deliberation. This broad definition encompasses four dimensions, namely e-services, e-management/e-administration, e-democracy, and e-commerce (Sakowicz, 2003). The case presented in this article falls under the category of e-management/administration, which is concerned with the use of ICTs to support the management and administrative functions of public institutions, including data and information management, electronic records maintenance, and cross-departmental flow of information. Here e-governance initiatives are focused on improving the management of government through techniques such as streamlining business processes (Sakowicz, 2003).

Most research in e-governance has focused on the output of these efforts—the use of the Internet to deliver services; the potential of the Internet to create a networked structure for interconnectivity; interactivity (DiCaterino & Pardo, 1996); decentralization and transparency (La Porte, De Jong, & Demchak, 1999); and accountability (Ghere & Young, 1998; Heeks, 1999; McGregor, 2001). Other studies have focused on plotting the course through which governments have approached the introduction of ICTs (Gant & Gant, 2003; Layne & Lee, 2001; Margettes & Dunleavy, 2002; Porter, 2003) and how countries fare in the extent and types of services offered by government portals (Holliday, 2002). A variation of these studies analyzes how information is organized on government portals (Ho Tat-Kei, 2002). Research has also analyzed factors that affect the adoption of e-governance (Allen et al., 2004; Fountain, 2001; Heeks, 1999, 2001; Landsbergen & Wolken Jr., 2001; Margettes & Dunleavy, 2002; Moon, 2002; Peristeras, Tsekos, & Tarabanis, 2002; Prattipati, 2003).

Together, these studies have focused on events occurring *after* the introduction of the information system. There has been much less systematic study of how information systems used by

governments are designed. Like any other information system, those used by governments are inscribed with implicit or explicit values that have a bearing on how and for what purposes they are used and who uses them. As Fountain (2001) herself points out, the ways in which information technologies interact with ongoing social relations, organizational structures, and processes have yet to be adequately conceptualized (Fountain, 2001, p. 9). Her Technology Enactment Framework is an attempt to address this gap in the literature. Using institutional theory from sociology as her theoretical framework, she attempts to show that government actors, embedded in cognitive, cultural, social, and institutional structures, influence the design, perception, and use of the Internet and related information technology in government. The underlying assumption is that some organizational actors implement ICTs in ways that reproduce, or even strengthen, institutionalized sociocultural mechanisms (Fountain, 2001). While Fountain's work is one of the early attempts to deliberately theorize the use and impacts of information systems within governments, McLoughlin et al. (2004) point out that since the focus is on implementation and effects, the concept fails to show in detail how technology, in its developmental phase, rather than its implementation and use, can be enacted in different ways.

This is better illustrated by an emergent perspective, which holds that the uses and consequences of information technology emerge unpredictably from complex social interactions, rather than attributing "[organizational change] to actor intent or exogenous technology [the focus is on] the dynamic interplay between actors, context and technology" (Markus & Robey, 1988, p. 588). Walsham and Sahay's (1999) use of actor network theory to understand the development and use of geographical information systems (GIS) to aid district-level administration in India is an example of a study that emphasizes the emergent perspective.

THEORETICAL FRAMEWORK

In keeping with the emergent perspective, this study brings together the social construction of

technology (SCOT) perspective (Bijker, Hughes, & Pinch, 1987) and institutional theory. SCOT emphasizes the centrality of choice in both the design of artifacts and the trajectory of innovation programs. It explores how technological artifacts are determined by the interpretations of those who participated in their development (relevant social groups, or RSGs). According to the SCOT perspective, technological frames, such as goals and key problem-solving strategies, influence interactions within RSGs and lead to the attribution of meaning to artifacts, and the wider sociocultural and political milieu in which RSGs are embedded plays a minor, almost insignificant, role. The narrow conceptualization of these groups conceals the complex interactions between them (Winner, 1993) as well as asymmetries of power, which enables some to be more influential than others (Klein & Kleinman, 2002; Kleinman & Kloppenburg, 1991). In addition, SCOT ignores the question of how existing groups were able to come into being and mobilize for collective action, since groups may confront significant barriers to organization and participation (Lukes, 1974; McAdam, 1982).

To address these limitations, social constructivists need to take into account the particular social-historical milieu, dominant cultural logics, and organizations that directly or indirectly influence emergent forms of an artifact. Sociological institutional theory² is concerned with the political *process* by which cultural abstractions, such as dominant cultural logics,³ acquire organizational form and are stabilized in a social structure. Institutional change and/or creation are sociopolitical processes (which are also shaped by and derive from cultural logics) reflecting the power and interests of actors who spearhead collective attempts to infuse new beliefs, norms, and values into social structures (Rao, Morrill, & Zald, 2000, p. 240). In doing so, they look to frameworks that incorporate the assumptions, beliefs, and rules that give meaning to social reality (Leca & Naccache, 2006). These institutional logics (Friedland & Alford, 1991), as they have been called, provide the means by which actors can articulate their claims and act as guides to their actions. The concept of institutional logics augments

SCOT's view on technological frames. It helps position technological frames in relation to schema. Actors acquire assumptive schema through socialization, and schema derive from institutional logics that embed organizations and practices. Actors make sense of new artifacts and social phenomena by using assumptive frames, and their sense-making is adjusted through social interaction and by their use of the artifact. Therefore, technological frames must be seen in relation to organizational schema. They are institutionalized resources individually held by actors as well as social products shared with other actors. Although Bijker suggests that the construction of the artifact, the formation of relevant social groups, and the emergence of frames are all linked processes, he does not explore how these processes are linked in distinctive ways. Institutional entrepreneurs and their discourse are vital to understanding this linking because, unlike what Bijker suggests, frames are more than just analyst-constructed instruments for theoretical purposes. Institutional entrepreneurs discursively construct frames as a way of building coalitions, and they often rearrange or modify available frames so that they resonate with the actors they wish to persuade.

Based on the above theoretical framework, this article is guided by two research questions: (a) Who proposed the system and why? and (b) What institutional logics initially shaped the system, and where do these logics come from?

RESEARCH DESIGN

Description of the Case

This study adopted a case study approach. The case under study was the adoption of a new financial management system by City X⁴ in the south of India.⁵ In the last decade, City X has emerged as a global technology center. The administration of the city is undertaken by the City Corporation (CC),⁶ which represents the third tier of government, after the Central and State governments. The CC's assigned obligatory functions include the maintenance of roads and street lights, sanitation, water supply,

registration of births and deaths, public immunizations, and regulation of buildings, and its discretionary functions include formation and maintenance of parks, schools, libraries, and hospitals.

In 2000, the CC began reforming its financial management practices. The introduction of an e-governance system, which combined a modern accounting system with a management information system (MIS), was an integral part of the reform. To achieve this transformation from an archaic, manual, cash-based accounting system, the CC partnered with the Task Force (TF). The TF was a voluntary group of IT companies and other eminent citizens constituted of the ex-Chief Minister⁷ of the state where City X is located. The TF's mandate was to upgrade and enhance the managerial and administrative capabilities of various civic and administrative bodies. Working with the CC to streamline its financial management system was one of the TF's first projects. For the purpose of this article we will refer to the system as F-MIS.

The impetus for change came from a severe resource crunch faced by the CC in 1999. The manually driven cash basis of accounting was not equipped to account for receivables and payables. In addition, the system was not capable of tracking the progress of urban development projects in different parts of city. The lack of standardization combined with unwarranted data redundancy resulted in a distorted picture of the CC's financial condition, which severely impacted the collection of revenue and disbursement of funds on urban development projects. In addition, the CC had earned a reputation for being slow moving, inefficient, and corrupt. The lack of transparency and accountability; inefficient resource mobilization and utilization; and the lack of access to timely information for an effective control over expenses, revenue, and assets rendered the organization incapable of tapping into capital markets for funding its activities. The solution seemed to lie in the development of a modern accounting system backed by a MIS (NIUA, 2004; Vithayathil, 2004).

The new MIS-backed system features a single database that allows all levels of

management to access information in a timely manner by eliminating delays in compiling information from various sources. It facilitates the parallel movement of information, that is, across departments at the same level, as opposed to only a vertical movement of information within the department. The F-MIS also provides a base for reviewing and monitoring past decisions taken by management and has enabled the CC to move away from a silo-based approach to its work by linking all the functional areas. This linkage allows the CC to easily understand and evaluate its overall financial position and plan its future activities. The system has been designed such that all types of users, from citizens to policymakers, can access information in formats that they can easily understand and interpret. For instance, citizens can access information about the revenue planning, actual collection, and details on budgeted projects and their status; employees can access information regarding the status of various financial records they update and manage, thereby reducing their workload on routine items; decision-makers can access various reports needed for planning; and policy-makers and funding agencies can access reports to evaluate the performance of the CC.

Methodology

The primary data collection technique was face-to-face, semi-structured interviews with staff in the accounting and engineering departments of the CC, the CC commissioners (past and present), the assistant commissioners in the three zones, the elected local representatives, people from the software company who built the data-capture system, people from a consultancy hired to design and implement the system, members from the TF who partnered the project, and members from civil society organizations who tried to utilize the opportunity presented by the system to interact more closely with the government. In order to increase validity, secondary data sources were used, which aided in the historical reconstruction design, development, and implementation processes. This included 20 relevant media reports, 17 reports/studies/policy documents that included

a mix of national and international documents cited by the informants, one manual, six frequently used MIS reports, two presentations made by the CC focusing on this project, and 10 written reviews and updates made during the implementation.

All data collected was textual, so Nvivo 8 was used to conduct a content analysis. The purpose of coding was to look for themes within and across the data set with the codes being developed inductively. It is important to mention here that in this study, a single coder was used. This is not unusual for a study that uses an inductive approach to coding. The inductive coding process assumes a single coder, as the process necessitates the development of codes based on a close reading of the text and a constant checking of the codes against the research questions (White & Marsh, 2006). In order to ensure validity of the codes generated, Lincoln and Guba (1985) emphasize four criteria. The first is truth value, or the confidence that the findings are true as far as the particular study is concerned. This criterion was met by sharing the findings with the interviewees during the second round of interviews and allowing them to validate the conclusions reached. The second, third, and fourth criteria, credibility, transferability, and dependability, respectively, are met by the creation of a memo that details the corresponding research questions, interview protocol questions, and the codes generated so that the reader can judge for him- or herself the validity of the coding scheme. This memo can be made available to the reader upon request.

Limitations of the Data-Collection Process

While most of the informants were cooperative and willing to share their experiences, some difficulties were encountered during the data-collection process. Some of the management-level staff in the public works departments were under scrutiny for corruption charges, and, given the intense media scrutiny, they were unwilling to be interviewed.

A rotational change in lower-level staff appointments meant that most of them were new and had already been trained in the use of

TABLE 1. Interviewees and Their Role in the Project

Organizational affiliation	Role in the project
Member of the TF	Project leader—F-MIS
Chief Executive of the consulting firm	Project leader—F-MIS Implementation
Commissioner of CC April 2002–June 2004	Overall supervision
Commissioner of CC April June 2004–June 2006	User of the new system
Additional Commissioner of Finance, CC	CC's representative on the F-MIS design team
Chief Executive the software company	Building the software
Special Commissioner, CC (June 2002–April 2003)	Overall supervision
Member of the software development team	Building the software
Member of the consulting firm	Project implementation
Special Commissioner, CC (May 2003–June 2004)	Overall supervision

the new financial management system, and were therefore not in a position to answer questions concerning the situation before the introduction of F-MIS. In addition, during the five years it took to design and implement the system, City X had seen five commissioners. Since they had been posted to other states by the time of this study, it was not possible to get in touch with them either on the phone or via e-mail. Table 1 documents the list of people interviewed.

Results reported in the next section are drawn from the retrospective reconstruction of the design process as articulated by those who participated in the project.

RESULTS

To answer the question “Who proposed the system and why?,” interviewees were asked to identify groups and/or individuals involved in the design and development of the system. They identified two groups, the CC and the TF. The consultancy firm hired by the TF to help implement the system and the software

company that built the system were also seen as playing important roles.

The TF acted as a catalyst to enable the CC to reform its financial management system. It provided the CC with the financial resources needed to design and implement the system, as well as the intellectual capital, such as knowledge about accounting reforms and generally accepted financial management practices, to do so effectively. Finally, the CC provided the manpower to engage in the reform process. As one interviewee said, “The TF’s role was that of a catalyst enabling the CC to reform itself. TF brought together the city corporation, the state government, and the private sector and interested citizens to bring in reforms.”

Interviewees felt the financial resources committed by the TF were significant, as without the commitment of resources, the CC would have found it difficult to undertake a project of this scale and justify spending resources on itself as opposed to urban development projects:

I think the CC would have been reluctant to come up with that kind of money for something like acquiring a new system of accounting. The changes that such systems bring about are not very tangible, and for an organization to spend that kind of money at that time, in 2000, would have been difficult. But when [the TF] said that they would underwrite the expenditure there was hardly any obstacle in the way of doing this.

The CC and the TF perceived citizens, their organizations, and the elected representatives⁸ as belonging to a group of stakeholders outside the CC. That is, these groups were grouped along with the State and National Government and other financial institutions outside the organization to which the CC must disclose its financial position.

The CC's Point of View

The emergence of City X as an information technology hub brought the provision of basic services under severe pressure. The crumbling

infrastructure coupled with an acute resource crunch forced the CC to consider reforming its planning and resource allocation processes. The resource crunch was compounded by the fact that both the central and state governments had cut back on funding infrastructure projects following the 74th constitutional amendment, which envisioned local governments, such as CCs, to be self-reliant entities. This meant that the CC had to resort to market borrowing, which in turn implied the need to be in a position such that the market could assess the risk involved in lending to the organization. The traditional accounting system followed by the corporation was hardly in a position to provide the kind of information needed for such analysis:

. . . the city was becoming a global city. Therefore, better infrastructure was needed and global population wanted better service delivery. But, our resource mobilization was poor. As a result, we were not able to match the demand. It was sort of a mismatch . . . and if you want to borrow or tap the capital market you get a better rate of interest only when you have good systems in place.

According to the state's Municipalities Act of 1976, the CC was required to maintain records of all monies received and paid. The Act also permitted the CC to have its own accounting system. However, the CC had not designed any specific system of accounting, preferring to follow one based on convention and convenience—a manually processed single-entry, cash-based system. The main issue with the information generated by the manually based system was that it was meant more to account for transactions and ensure compliance than to provide information for the purposes of decision-making and financial analysis:

The CC had a weak financial position. We did not know the accurate position of our funds. We were working on guesswork, and this was disastrous for financial management. We had no clue about the status of our assets and liability. On any given day, we had about 7000–8000 public work projects taking place around the city.

In addition, the CC was finding it difficult to keep track of its spending on various schemes and projects. There was a dire need for a monitoring tool that would enable the organization to regularly check on its investments and issue any corrections if needed:

. . . a monitoring tool was a key issue for the CC, because it is such a large organization with so many departments each having so many schemes. There was no single system that could capture what was happening in the entire organization. A monitoring tool would give us the opportunity for mid-course correction. There is no point knowing two years later, when the audit points out (usually you have a time lag of two–three years before the audits are ready), that some projects were not doing well and the money could have been re-allocated.

Further, the laborious process of making entries in different registers and then compiling all the information was time-consuming and prone to errors:

The process of compiling information was very labor-intensive. Since the process was not computerized, any information that you requested would take days, and in some cases weeks, to materialize. We found that the lack of computerization meant that a simple task like payroll management would take an entire month to complete. Management decision-making was based on just experience, guesswork, and some kind of wisdom. This is not good for growth of any organization.

To add to the problem, accounting was done at the departmental level by the accounts officers assigned to each department. These accounts officers reported to the head of the department. Thus, information flow was restricted to a vertical movement within the department and not available to the top management for planning unless requested through the department.

Equally important, the CC had received bad press with several reports of corruption making

regular headlines. The CC had gained the image of being nontransparent, partisan, and accountable to no one. Citizen polls conducted by civil society organizations found high levels of dissatisfaction among citizens regarding how the CC conducted its business. According to the CC, while corruption was an issue that needed to be dealt with, it was also important to recognize that the lack of transparency was related to the lack of information about what was happening within the departments. While some officials were just unwilling to share information to protect their turf, it was also an official's lack of confidence regarding the accuracy of the information that served as a deterrent to sharing:

Nobody could say or believe this information that was being put on our table. As a result, there was a lack of transparency and accountability. Nobody wanted to share information because they were scared. They did not know whether the information they had was correct or not correct. Therefore, we would find reason for not divulging the information being requested. Once you know that the information you have is accurate and reliable, then ideally a person will have no hassles in sharing it.

Thus, the key issues the CC wanted to address were related to improving its financial position, such that it would be in a position to tap into capital markets for loans to enable the development of infrastructure in the city and improve service delivery to citizens. Secondary concerns were related to exercising greater internal control.

The TF's Point of View

The TF was driven by the ideal of participative governance. Inspired by Porto Alegre's participative budgeting experiment,⁹ TF members were keen to see citizens play a significant role in decisions regarding the allocation of resources for the city's development projects in a manner such that accountability and transparency in decision-making could be achieved: "So to us, it is about the citizen's participation.

It's like a silver bullet. It gives you anything. It gives you government accountability, efficiency, and decentralization." A formal platform that enabled citizen participation was seen as a means to hold government accountable for its decisions as well as ensure the individual accountability of each citizen:

. . . we are asking for citizens' participation not only because that would make the government more accountable to the citizens, but also because it would make the citizen more accountable to himself, since for the first time the citizen has a formal role to play. Therefore they have to stop whining. They cannot blame anybody else.

For the TF, Porto Alegre provided the most valuable insight into how such platforms could be achieved:

What I liked about Porto Alegre, and what we are hoping to do here, [was that] it gave a tangible, quantitative outcome for participation by focusing on enabling citizens to contribute to finalizing the budget. What we found appealing about Porto Alegre was that it was a collective decision-making process . . . and the single document that captures government decision-making is the budget. So, it is critical to get the voice of the people in that budget.

By linking citizens' participation to the budget, two important things could be achieved. Since the budget is produced every year, citizens' participation gains continuity as opposed to being a one-off event, and, secondly, accountability is brought into policy-making and implementation.

The TF's interaction with the CC also brought to its notice the fact that the organization's internal systems were stifling officials, some of whom were inclined to (and had the authority to) act as change agents transforming the organization to a more effectively managed entity. The poor quality of decisions made by the officials was directly linked, according to

the TF, to poor quality information on which decisions were being made. What the CC suffered from was the lack of a structured system through which information could flow and be readily accessed by whoever needed it:

Why is it that good quality people are not being good change agents? Some of the answers lie in how public decisions are taken. The quality of decisions is driven by the quality of information, and in public institutions there is very poor quality information coursing through the veins of the institution. As a result you have a very high caliber individual making very poor decisions because he got very poor information supporting that decision. So there is no institutional mechanism for information to flow. There is no plumbing.

Different Motivations, Same Solution

The above discussion suggests that the motivations of the CC and the TF were different. The CC needed to address the key issue of improving its financial position with secondary concerns related to exercising greater internal control. The TF wanted a governance system where citizens could play an active role in making decisions regarding the budget and monitor the CC's performance. However, there was a degree of convergence in the recognition that the root cause of the CC's problems was lack of information, including its collection, access, and use for the purposes of decision-making. The TF wanted a system that would enable citizens to participate in government decision-making in an effective manner. This would only be possible when citizens had access to financial information relating to revenues, expenditures, assets, liabilities, and the budget of the CC. The CC needed the same information to plan and monitor its programs and activities; present a stronger case to potential lenders for funding; and institute internal control systems to curb corruption and move towards a performance-related administrative system.

The solution, therefore, was to devise a system that collected and disseminated information in a

systematic manner, thereby enabling the CC to make better quality decisions as well as satisfy other requests for information that the organization receives from other stakeholders. This focus on financial management was in keeping with ideas put forth by international organizations that identified public expenditure management as "a key instrument to ensure sound development management. Public expenditure management . . . is the core business of governments and links macroeconomic policy decisions to budget priorities" (Asian Development Bank, 2000, p. 6).

The rationale offered by the actors involved in making the accounts department the locus of the reform stemmed from the fact that money was the one thing binding all the different departments together. Almost all departments of the CC are involved in either receiving or spending money. Hence, the reasoning was:

The only common ingredient among all of them [citizens, public health, education, etc.] is money. Either it [departments] is receiving money, property taxes, building receipts, or it is spending money. So if you could somehow start cleaning up how money got managed, you are doing two things. You are cleaning up the money flow, and you are also cleaning up the plumbing. So along with the money, I can get the metadata as well, which the information needed for decision-making. So for instance I collected property tax. How much did I collect? Who did I collect it from? So the revenue officers can start adding on the extra information that upper management can use to make their decisions and better supervise the work being done.

The outdated accounting system was identified as the root cause for the CC's inability to efficiently provide services for the city's citizens: ". . . the more we learned, the more we realized that fixing the financial systems was important to do because it was completely dysfunctional. . . . So we said that the first phase of this process would be about fixing the internal processes." Having a system in place that would efficiently

gather and disseminate financial information was not only essential for decision-making, but was also important for enabling citizens' participation in making decisions about the allocation of resources and measuring the CC's performance. The TF recognized that citizens' participation in decision-making rested on the CC being in a position to share financial information with the citizens:

So when we were sitting in circa 1998 and saying, "Wow, won't it be great to do a Porto Alegre in [City X]," the first thing that struck me was, "If we can mobilize all these citizens, can the government really respond? Does it have the tools to respond?" It then struck me that they didn't have the tools to respond. So it would be kind of unfair to the government to go around building all this citizen energy without providing them the tools. So we said, "Let's fix the supply side first." . . . I had a fairly clear sense of what it is I wanted to do in terms of a sequence—implement a good accounting system and once that is done bring in the citizens. This had to be done sequentially, otherwise it would become a very frustrating exercise.

The key problem that the CC was trying to address was the need for "timely, accurate, and structured information to help us make better decisions." For the TF, the central issue that needed to be addressed was figuring out how to "link citizens' participation to decisions about public money." The solution that worked for both groups was reforming the CC's financial management system:

A robust accounting system acts like a solid foundation on which various elements can be assembled. . . . If you cleaned up the financial information, it becomes the carrier for the meta-information. So restructuring the financial information system, if you look at the architecture of any institution, is at the heart of it.

This meant a fundamental change in the way the accounts department was viewed within the

CC. Traditionally, accounting was a terminal activity done at the completion of a project or scheme or at the end of the financial year. As a result, the business processes in the CC were designed such that accounts was seen as a control function: "Whereas in our view of the world, accounting is a control function but it is also an enabling function for better quality decisions to be made. So it is actually a service centre for information flow. We call it is an enterprise view of the government."

Influences on the F-MIS Project

A question of particular interest to this project was where these ideas about participation, accountability, and transparency in governance came from that form the rhetoric behind introducing the F-MIS. This refers to our second research question—what institutional logics initially shaped the system, and where do these logics come from? In order to investigate this, interviewees were asked about the books, people, publications, and organizations that most influenced them. The sources they listed fall into two main categories: (a) national and state policy publications or statements such as the 74th Constitutional Amendment, recommendations for a National Action Plan For Good Urban Governance, and the state's Right to Information Act of 2000 and (b) international strategy and/or funding-related publications such as the United Nation's Good Governance Campaign and the World Bank's Report on Public Financial Accountability in Urban Local Bodies in the state.

National and State Policies

National policies identify mobilization of municipal finance, transparency and civic engagement, and better municipal management as the key issues facing urban local bodies such as the CC. The introduction of generally acceptable accounting principles linked to an "effective management information system [for] reliability and accuracy in financial information" (UNHabitat, 2001, p. 13) was seen as an effective way to ensure high levels of accountability and transparency, and improve the efficiency of

the municipal administration. To encourage city administration to improve urban governance and management, the national government also instituted several funding programs that explicitly linked the introduction of reforms to funding infrastructure and development projects. These reforms included, among other things, the adoption of modern accounting systems and the introduction of e-governance using information technology applications such as GIS and MIS. Similarly, international financial institutions lending money to the CC for infrastructure projects, such as the World Bank and the Asian Development Bank, linked funding to reforms that included computerization of accounts and the establishment of expenditure monitoring systems. At the state level, two acts, the state's Right to Information Act of 2000 and the state's Local Fund Authorities Fiscal Responsibility Act of 2003 (the latter was being drafted during the implementation of the project), were cited as being influential. These acts call for "openness, transparency and accountability in administration and [ensuring] effective participation of people in the administration thus [making] democracy meaningful" (Right to Information Act, 2000, p. 1). This can be accomplished by "introducing performance linked budget policies, providing effective and sustained fiscal monitoring systems . . . disclosing sufficient information to allow the public to scrutinize the conduct of fiscal policy" (Local Fund Authorities Fiscal Responsibility Act, 2003, p. 4).

International Organizations and Their Strategies

International strategy and/or funding-related publications consistently echo the theme of good governance defined as "among other things, participatory, transparent and accountable. It is also effective and equitable. And it promotes the rule of law" (UNDP, 1997) The main theme of the UN HABITAT's Good Governance Campaign is the promotion of an inclusive city "because inclusive decision-making is at the heart of good urban governance." The campaign emphasizes transparency and accountability, calling them the fundamental tenets of

good governance. Their absence is seen as undermining a government's credibility and deepening urban poverty.

Within this framework of good governance, the World Bank has explicitly raised concerns about public financial accountability in India. Extolling public financial accountability as the litmus test for good governance, the Bank highlights that public institutions can be reformed and governance strengthened by focusing on public expenditure management: "The attention that public expenditure management is receiving suggests that it is a useful entry point and that we need to work with clients to leverage this attention into broader and deeper governance reforms" (World Bank, 2000, p. 97). This point of view is also reflected by the Asian Development Bank. In its attempt to promote good governance, the organization's funding priorities focus on public expenditure management programs and public accountability projects, since they believe that "Public expenditure management is important to ensure sound development management" (Asian Development Bank, 2000 p. 19).

The CC's and the TF's Understanding of Good Governance

The concept of good governance that the above documents and policies highlight underpins the efforts to modernize the CC's decision-making process. The F-MIS was seen as more than just an accounting tool. It was commonly referred to as a tool that enabled urban governance, a view also shared by the TF. Governance was defined as the process by which decisions are made:

. . . to me a lot of governance, while it could be interpreted in many ways, is about decision-making. It's not about if we should have a fly-over here or not. Those are practical indicators of decisions. But what is the way in which decisions are made? Based on what information do you make these decisions and what processes do you adopt that is what governance is about.

Good governance was associated with efficient administration, transparency, accountability, and the active participation of citizens, civil society, and the private sector in decision-making and service delivery. According to the Additional Commissioner of Finance, “Good governance is after all about being transparent and accountable to the people and to ensure that you are doing your work in an efficient manner.” When broken up into their constituent parts, these broad categories revealed that at the heart of each concept was the need for information, especially information related to public financial management. Transparency was seen as sharing information on expenditure and the process by which decisions are made with the public: “. . . Transparency is sharing information on the achievement of certain specified objectives and achievements and also on process by which decisions are made.”

Accountability is about the ability to hold a person responsible for his/her actions. This requires information on who is making the decision and the basis on which decisions are made: “Accountability is the ability to account for the path by which decisions are taken and fixing responsibility on people for their actions.”

An efficient administration was one that could respond in a timely manner to demands made by citizens in the most economical way:

. . . to efficiently do your job, you need information. For example, there is no point in knowing, at the end of the year, that I have not spent the money that was allocated for some activity. If I know this earlier then I can reallocate that money so that I am more efficient and can better plan my activities.

Finally, in order for citizens to participate in decision-making, they need both access to the decision-making process as well as information on government policies, budgets, etc.: “. . . disclosure by itself is not a sufficient condition for good governance or citizens’ participation. To motivate the common man to participate in the process, you have to start sharing information with the public.”

DISCUSSION AND CONCLUSION

E-governance literature, both academic and anecdotal, has pointed to the important role played by e-champions in pushing e-governance projects such as F-MIS to their logical conclusion (Narayan, Nerurkar, & Mehta, 2006). An e-champion or small group of e-champions are leaders with vision who put e-governance onto the agenda and make it happen (Heeks, 2001, p. 20). E-champions can be likened to institutional entrepreneurs, defined as “socially constructed actors who motivate others for collaboration by creating a shared meaning and identity within social practices characterized by several institutional logics” (Westenholz, 2006, p. 183). These institutional entrepreneurs are carriers of the social process, bundling material and symbolic properties in a certain recognizable form (Kyung & Kim, 2002, p. 27) and enabling the development of technological artifacts such as the F-MIS. They include institutions, organized or unorganized groups of individuals, and organizations (Bijker, 1995). In this case, the TF, along with the consultancy firm that was hired to design and implement F-MIS, played the role of an e-champion. The limited involvement of other stakeholders, particularly citizens, civil society organizations, and elected representatives, is significant. Looking at who was excluded brings into focus interests that are not inscribed in the system’s design. Thus, for instance, F-MIS does not have a Web interface, which means that every time an elected representative, citizen, or civil society organization wants information, he or she must approach the Additional Commissioner of Finance and place a request before him. This perpetuates a dependency relationship that keeps existing structural power centers in place. The project was deliberately conceptualized as an administrative reform—a cleaning up of internal systems. The exclusion of elected representatives is problematic, because they play a significant role in the allocation of funds to different schemes and projects and act as links between citizens and the CC (Benjamin & Bhuvaneshwari, 2001; Ghosh, 2005; Vijayalakshmi, 2004).

According to SCOT, technological frames or frames with respect to technology, including goals and current theories, play a crucial role in the interpretations of the artifact, and the existence of competing characterizations points to an interpretive flexibility that needs to be resolved through a process of negotiation before the development process can proceed. In the case of the F-MIS project, as we have pointed out, the CC and the TF came to the table from different points of view. For the CC, the need of the hour was a system that would enable it to present an accurate picture of the corporation's financial position. The TF, on the other hand, wanted a system that would enable citizens to participate in government decision-making in an effective manner. Closure and stabilization were achieved as the two groups coalesced on defining the central problem as a lack of information. As a result, the system that was to be developed was seen as one that could provide timely, accurate, and structured information. This demonstrates the value of using SCOT to analyze the development of e-governance systems. Even though Fountain (2001) acknowledges that the interactions between technology and social relations, organizational structures, and processes are missing in e-governance research, her Technology Enactment Framework has tended to black box the development of e-governance systems by viewing them as objective technologies. Thus, this case study builds on her model by unpacking the way these objective technologies develop through a process of negotiation between different relevant social groups.

Institutional Logics and Framing

The wider sociocultural and political milieu provided the e-champions with concepts and frameworks to legitimate the push for a change in CC's financial management practices. National policies emphasized the need for a decentralized administration to be set up so that urban local bodies like CCs could better serve their citizens. With greater devolution of functions, planning responsibilities, and new systems of fiscal transfers, urban local bodies were being called upon to play a greater role in

preparing plans for economic development and social justice, as well as in the implementation of various development schemes. There are two implications that emerge from the changing role of urban local bodies. First, they now have the ability to prioritize and allocate financial resources for economic development, and second, since they are conceptualized as units of self-government, their access to financial resources is no longer restricted to grants provided by state governments. Coupled with the fact that state grants to urban local bodies for infrastructure development projects have been steadily decreasing, these bodies have been forced to resort to market-based financing. However, this requires urban local bodies to be creditworthy. It is this notion of being creditworthy that the e-champion latched onto. It is impossible to assess whether or not an organization is creditworthy unless there are modern financial management practices that enable such an analysis. The outdated system of accounting practiced by the CC would, therefore, have to be replaced by a more rigorous system that could provide access to financial data on revenue, expenditure, assets, and liabilities. In addition, any funds that the urban local bodies received would have to be managed in a structured manner, as there are now multiple sources of funding with each financial institution having its own reporting formalities.

SCOT neglects to look at this wider social context in which the agency of the relevant social groups is embedded. As a result, it fails to provide tools to understand the strategies and tactics used by members of relevant social groups to achieve closure and stabilization and to explain why some members, and their cultural frames, prevail over others. Institutional theorists Brint and Karabel (1991) suggest that the reason one form is chosen and another is not hinges on larger constellations of power and social structure. Our data suggests that organizations like the TF that are in tune with cultural logics enjoying currency at a historical moment are likely to emerge as culturally influential power centers that are able to influence the actions of other actors through direct interventions and/or by changing the context within which actors operate (Brint & Karabel, 1991,

p. 359). The TF reconfigured the operating context within which good governance would be enacted by making transparency and accountability in bureaucratic decision-making the issue; the CC, in particular its accounting department, was accorded a position of centrality in good governance. Despite their repeated positive invocation of Porto Alegre and democratic political participation, the TF actors bypassed elected officials during the formative phase of solution development and relegated the role of citizens—rhetorically the target of their empowerment—to the role of auditors.

Institutional entrepreneurs borrowed from Porto Alegre the well-recognized and accepted concept of participative budgeting and used it as a justification for the need to bring about changes in the CC's financial management system. The argument was that in order to succeed, experiments such as participative budgeting would require that the CC be in a position to proactively engage with citizens. Since the focus is on the allocation of resources in order to engage proactively, the CC needs to be aware and in a position to disclose its financial health. Consequently, the project needs to focus on building a robust financial management system. Participative budgeting is only one way in which citizens can participate in governance. However, institutional entrepreneurs in this study use the term as a synonym for participative governance. This therefore drove the kind of project they developed.

By interpreting the concerns that citizens expressed with regard to corruption as a need for greater transparency and accountability, institutional entrepreneurs conceived of citizens playing the role of auditors. The public might or might not have cared for this role. They might have been willing to give up some auditing control if they could contribute to determining broader policy decisions that impact how resources are allocated to projects within the budget. However, this tradeoff finds no expression in the present setup, because institutional entrepreneurs framed the project in a manner that fixed the role that citizens would play, thereby defining the terms on which the CC and citizens interact.

In the case of the F-MIS project, the creation of the TF introduced a new apolitical player in the context of urban governance, which until then was under the purview of the CC and the City Council. Confining the role of elected representatives to observers (and later to users of information generated by F-MIS and placing them as an external stakeholder of the CC) reflects an attempt to change their contextual influence. The TF may not have been in a position to directly influence the actions of the CC. But as an entity that was backed by the Chief Minister of the State, comprising eminent individuals, and with extensive resources, the TF was able to exert considerable influence on how urban governance was interpreted, understood, and implemented. This is evidenced by the pivotal role played by the TF in shaping the discourse around good urban governance. As advocates of change, the discursive exercise of institutional entrepreneurs is aimed at providing complementary cognitive and normative arguments to discredit “the [existing] institution and demonstrate the necessity and desirability of its reform or destruction. This challenging discourse is intended to undermine the [existing] institution's mechanisms of reproduction” (Skogstad, 2005, p. 534).

This undermining, however, is seldom radical in intent or expression. Rather, the strategic action of institutional entrepreneurs is akin to bricolage—a reassembling and recombining of available cultural materials designed to garner support from heterogeneous target groups (usually resource controllers) and allay fears. Bricolage entails negotiation and compromise, and institutional entrepreneurship, in this case, like politics, was an exercise in the art of the possible. Elected officials were kept out of the formative problem definition and solution design phases, because there was a feeling that they would politicize the issue and delay its implementation.

The compelling institutional logic, in this case, was a particular, historicized interpretation of good governance based on imported and local models. Institutional logics act as organizing principles that are accessible for organizations and individuals in terms of further development of microprocesses through which the meaning

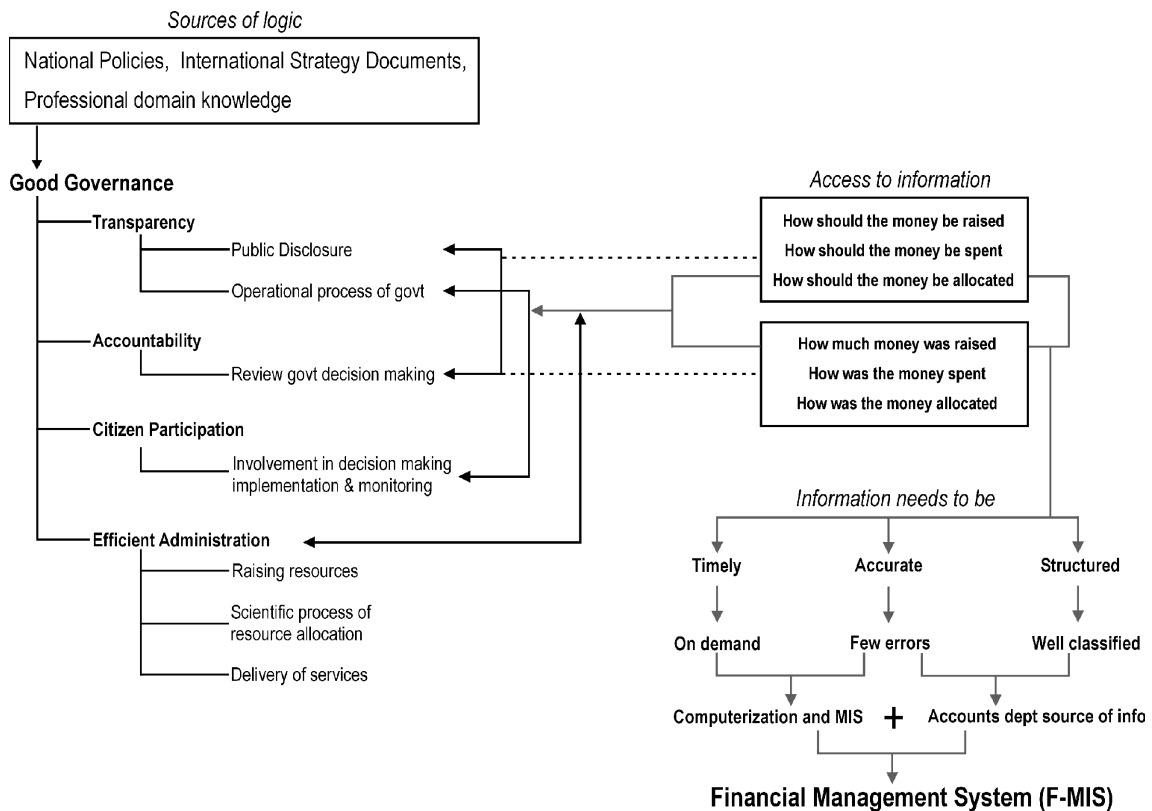
of what has happened, what is happening, and what is going to happen is constructed (Hwang & Powell, 2006, p. 196). Drawing on existing notions of good governance, as put forward by organizations such as the World Bank and Asian Development Bank (definitions that were intimately tied by provenance to the financial and banking logics and appropriate derivative recipes for success espoused by such institutions), the institutional entrepreneurs in this case believed that good governance could be achieved through effective management, whose dimensions included public sector management, accountability, the legal framework for development, information, and transparency (Asian Development Bank, 1995).

What is even more significant is the extent to which finance-related information is made central to each of these dimensions. Thus accountability is facilitated by evaluation of their economic and financial performance and efficiency in resource use (Asian Development

Bank, 1995); participation implies that government structures are flexible so that they can provide citizens with an opportunity to improve the design and implementation of public programs by voicing their priorities in budget allocations, and transparency, which refers to the availability of information, is especially relevant in the case of those sectors that are intrinsically information-intensive, such as the financial sector (Asian Development Bank, 1995).

The diagram in Figure 1 depicts the line of reasoning adopted by the e-champions. Thus, e-champions are not disinterested altruistic agents of greater systemic effectiveness or efficiency. To the contrary, their advocacy of institutional change is impossible to separate from their own particular material and ideal interests. Though they rely on myths and institutional formulas to articulate and legitimate their proposals for structural change, they do so in innovative ways, while simultaneously challenging

FIGURE 1. Institutional logics influencing the design of F-MIS.



and critiquing existing arrangements, rules of thought, and standardized practices (Colomy, 1998, p. 271). The solution offered by the institutional entrepreneurs identifies the social field in which change is sought (Colomy & Rhoades, 1994), in this case public financial management. It specifies the functions, purposes, and goals to be fulfilled by the change (Colomy, 1998, p. 272), such as enabling the availability of information in a timely, accurate, and structured manner so that decisions can be made based on fact rather than convention and promoting citizens' participation in governance through the dissemination of information used by the CC in decision- and policy-making. By setting the agenda early on, institutional entrepreneurs set where the groups are going and what their collective identity is likely to be (Fligstein, 1997, p. 399). By linking the poor quality of decision-making to poor-quality information, institutional entrepreneurs were able to focus their efforts on improving the existing decision-making processes rather than move for a radical change to the institutional environment that dictates how decisions are made.

This case study highlights how the social construction of e-governance projects such as F-MIS plays out when different groups with differing institutional logics come together to initiate such projects. Who is involved and consequently who is not involved, and what logics are brought to the table and what are not have implications not just for the system design but also for their potential impact. At the time of doing this study (2006), the CC was experimenting with a GIS-enabled property tax management system feeding information into the F-MIS. However, the mapping only covered legitimately owned properties that can be taxed. Slums for instance are not mapped. This serves to delegitimize such areas even further. Worse, if they are not mapped and not officially part of the CC's database when the time comes for planning, F-MIS reports will not reflect what is happening in these areas. So if technology by its design can be excluding, in combination with other technologies, they can exacerbate the feeling of alienation.

Despite the limitations, this study has contributed to a deeper understanding of how the relevant social groups working within an existing structural framework influence the design of e-governance systems such as F-MIS. The study points to the significant role played by institutional entrepreneurs in the process of design and suggests the usefulness in using SCOT and institutional theory as a theoretical framework with which to approach research on e-governance.

With many more city corporations adopting the F-MIS system, these new cases can be used to probe deeper into the role played by institutional entrepreneurs in bringing about institutional change by drawing on organizational discourse theory, which "refers to the structural collection of texts embedded in practice when talking and writing" (Westenholz, 2006, p. 6). Discourse not only defines what is "normal" and "acceptable," but provides a framework within which people can make sense of events happening around them. Therefore, future research can examine the narratives used by institutional entrepreneurs to bring about changes in existing structures. The construction of these narratives takes the form of negotiations between various players in the organizational field. We know little about the nature of these negotiations (Westenholz, 2006). The existence of multiple cases can be used to construct a matrix of the different narratives that institutional entrepreneurs use and the resultant outcomes.

NOTES

1. Due to confidentiality agreements, the data used in this study cannot be made available in the public domain. However, the authors are willing to share the data on a case by case request upon checking with the organization in question.

2. Henceforth, for the sake of convenience, sociological institutional theory will simply be referred to as institutional theory. I acknowledge that institutional theory also has its roots in economics.

3. Cultural logics are symbolic representations and material practices (Friedland & Alford, 1991) that embed organizations and shape their distinctive form—that is, their mission, interests and identity, structure and functions, and everyday practices.

4. In order to maintain anonymity we are using pseudonyms.

5. At the time this research was undertaken, the CC was negotiating with an e-governance system provider to replace F-MIS with a full suite of municipal e-governance modules, including one that would focus on financial management.

6. In this article, when we refer to the CC, we are referring to the executive wing of the organization. The City Corporation is run by a City Council (the legislative wing headed by the Mayor and composed of elected representatives) supported by a bureaucracy (the executive wing headed by the Commissioner, a senior member of the Indian Administrative Service). The City Council is the main policy-making body that discusses and recommends policies and passes resolutions that are implemented by the executive wing. The executive wing is functionally organized with departments such as Health, Education, Engineering (public works), and Solid Waste Management, which focus on the implementation of various projects and schemes. These departments are supported by service departments such as Finance and Accounts, Human Resources, and IT Services.

7. A Chief Minister is the leader of the ruling party in a state.

8. Elected representatives comprise the City Council the legislative wing of the City X's administration.

9. Porto Alegre's participative budgeting initiative has received international recognition for institutionalizing the participation of citizens and civil society organizations in the formulation (and follow-up) of the city's municipal budget. The consultative process of reviewing the past year's expenditure, jointly prioritizing projects that need to be undertaken in the current year, and allocating funds for these projects has enabled the government to deal with issues related to corruption, unaccountability, and the lack of transparency. (See also United Nations Human Settlements Program: http://www.unhabitat.org/downloads/docs/2115_40209_inclusive_cities_WHD.doc.)

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