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IMPLEMENTING CITIZEN-CENTRIC STRATEGIC IS PROJECTS: AN INDIAN CASE STUDY

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Abstract

In this paper, we report on the implementation of a public information systems (IS) project in Bangalore, India. Our analysis of the Bangalore One (B1) project demonstrates the deployment of both formal and informal control mechanisms at different stages of the project. The use of informal control mechanisms to establish control over several crucial processes serves to highlight the contextual aspects of the project. The findings suggest that unique local contexts within the emerging economies in Asia drive the adoption of informal control modes even if highly influential western theories of management and organization propose more formal methods. However, the information asymmetries which underpin informal control modes inevitably raise questions about transparency even if the project is largely a success. The findings also draws attention to an important fact: the notion of transformation, particularly in the case of developing nations in Asia is context dependant and project evaluation mechanisms therefore need to draw on broader sociological frameworks when assessing transformation.

Keywords: Public IS, India, Transformation, Case study

1   INTRODUCTION

Public management information systems (IS) or public information systems refer to "computer-based IS used by public organizations to collect, store, and disseminate information to support such management functions as decision making, communication, coordination, and control" (Lee 2008, p.181). Increasingly, governmental agencies also showcase many of their public IS projects as e-governance projects wherein IS investments are linked to more effective governance (Helbig et al. 2009; IIIT-B 2005; Irani et al. 2008; Tan & Pan 2003). Broadly, the objective of a public IS project is to improve, and in some cases to bring out a transformation in the delivery of public services. It needs to be noted that transformation does not necessarily mean the introduction of cutting-edge IT infrastructure. A more accurate indicator of transformation is perhaps the positive difference a project actually makes to the citizens as evidenced by the project evaluation mechanisms assessing this difference. It is therefore important to examine how public IS projects are institutionalized in different political, social and cultural contexts, and to analyze the methods adopted to ensure that citizens experience the promised benefits and improvements (Krishna & Walsham 2002).

A key component in the institutionalization of any IS project is the establishment of control over different stages of the project, starting from the conceptualization stage and extending to the implementation and post-implementation stages. This is particularly so in the case of public IS project implementations given the anticipation of political and legal hurdles, reduced incentives for performance (Rocheleau & Wu 2002), requirements of greater accountability and public scrutiny (Bozeman & Bretschneider 1986). In the context of emerging Asian economies, these issues echo even more given that the regulatory frameworks and structures to su2pport such implementation are still evolving. It follows that inability to exercise firm control over the trajectory often contributes to such projects' failure to meet objectives (Ciborra & Navarra 2005). Against this background, we present a case study of Bangalore One (B1), a public IS implementation project currently running successfully in Bangalore, India. This project is seen to have transformed the ways in which citizens access essential government services. Our study attempts to answer two questions: 1. What are the important processes that come into play at various stages of institutionalization of a public IS project? 2. How are the important processes and contextual factors controlled during the different stages of institutionalization?

2   LITERATURE REVIEW

A vast body of literature has looked into the processes of exercising control within and across organizations. Control broadly refers to any 'attempt to motivate individuals to behave in a manner consistent with organizational goals and objectives (Kirsch 2004, p.374). Cardinal (2001) argues that while it is useful to examine the fit between particular controls and specific types of tasks, a more realistic picture of control can be obtained by understanding how organizations control multiple stages of the transformation process that takes place when moving towards goals and objectives. It is also evident that any process of exercising control involves a controller and a controllee. At the controller's disposal are different types of control such as structural or behaviour control (Ouchi & Maguire 1975), market control (Ouchi 1979), cultural control (Wilkins & Ouchi 1983), input control (Mintzberg 1983) and output control (Merchant 1985). The control literature considers controls to be of two classes or modes, formal and informal (Jawroski & Merchant 1988; Kirsch 1997). Formal modes refer to control strategies implemented formally in the course of a project by managers while informal modes refer to less mechanistic control strategies, which are rooted in the informal socio-cultural settings of the organization.

Within IS implementation research, the methods by which control is exercised over projects has for long drawn the attention of researchers (Kirsch 2004). Studies have typically considered the presence in organizations of two formal modes of control, namely behavioural and outcome control and two informal modes of control, namely clan and self control (Kirsch 1997). Behavioural control involves controllers who specify formal rules and procedures to be followed during a project and subsequently, reward or take punitive action against the controllees depending on the extent to which the procedures are followed (Jawroski & Merchant 1988; Kirsch 1997). In other words, through these formal rules

and procedures control is exercised over controllees' behaviour during the implementation of a project. Similarly, outcome control refers to pre-specifying the outcomes of a project (or outcomes of incremental stages of a project) and rewarding controllees depending on the degree to which the outcomes are realised (Kirsch 1996).

In the case of clan controls, controllers exercise a form of cultural control within a clan or group by invoking common values and beliefs, which then motivates the clan to behave in a manner consistent with the goals of a project (Ouchi 1979). For example, in implementing long-term IT offshoring projects the values and norms associated with the client organization are often invoked, which motivates employees in vendor project teams to identify strongly with the client organization and work enthusiastically for the project (Ravishankar & Pan 2008). Finally, self-control which is based on the principles of intrinsic motivation refers to controllees monitoring and regulating their own behaviours in tune with the demands of a project (Jawroski & Merchant 1988). In the deployment of these formal and informal modes of control, a number of different mechanisms often called control mechanisms are used. For instance, in a recent study Kirsch (2004) demonstrated the successful adoption of both formal control mechanisms such as project-management tools and informal control mechanisms such as ad-hoc meetings and discussions.

2.1   Control and Contextual Barriers in the Implementation of Public IS Projects

Studies of public IS project implementations have emphasized the importance of the unique embedded contexts within different countries and organizations, which can potentially pose challenges for exercise of control over project trajectories. For instance, in the case of e-governance projects, studies have highlighted contextual factors including social and cultural factors (Irani et al. 2008), political factors and factors concerning access to technology (Singh & Sahu 2008). In a study of public IS adoption in Korea, Lee (2008) show how bureaucrats' use of public IS depends on their power in the hierarchy and on their ICT capabilities. Singh & Sahu (2008) highlight the difficulties associated with low access to internet and low penetration of PCs in India and the corresponding implications for public IS projects. A few studies also draw attention to the tensions that exist between exercise of control through centralised processes and the demands for decentralised processes during the implementation of public IS projects (e.g., Azad & Faraj 2008; Ciborra & Navarra 2005; Kimoro & Sahay 2007). Further, in many public IS projects the target controllees often extend beyond a single entity and include partner organizations from the private sector (Madon et al. 2004). This could pose additional challenges from a control perspective since implementation teams may also need to deploy control mechanisms to ensure that the objectives of the private partners do not conflict with the larger goals of the project.

In summary, a review of the existing literature suggests that many contextual factors present crucial barriers for the exercise of control over different stages of a public IS project. While the key contextual variables in the remote and operating environments of different public IS implementation projects could be completely different from one another thereby introducing challenges for generalizability, we believe that taking a control perspective adds an important dimension to our understanding of such projects. Further, although studies have emphasized the role played by contextual factors and recognized the importance of exercising control during the institutionalization of a public IS project implementation, very few studies have empirically examined the various control mechanisms deployed to counter and overcome the contextual barriers. Our study is a modest first attempt to address this gap within academic research.

3   METHODS

We adopted the case study method and conducted fieldwork for six months in Bangalore, India. The fieldwork was conducted over a two-year period in three phases with each phase lasting two months. In conceptualising the institutionalization of a public IS project, we draw upon Tolbert & Zucker (1996) who view the institutionalization process as consisting of four stages. Inspired by their model, in our study we view the process of institutionalization of a public IS project as consisting of four

stages: the innovation stage, during which on account of influences in the operating and remote environments the idea of a project becomes an attractive and feasible option for a government body; the pre-institutionalization stage, where new structural arrangements to support the project are generated and then formalized; the semi-institutionalization stage, where based on some degree of social consensus among key decision makers concerning the value of the project, there is a clear pattern of increasing adoption; the full-institutionalization stage, where the project gets well-integrated into citizens' lives and gains close-to-complete acceptance.

3.1 Bangalore One (B1)

Bangalore One (B1) is a public IS project launched by the Department of E-Governance (DEGOV), Government of Karnataka (GoK) [1] in late 2005, which focuses on providing integrated citizen-centric services. Within DEGOV, a implementation team called the B1 project team takes responsibility for the project. Citizens can access the services provided by B1 in two ways – by transacting at the citizen service centers (CSCs) located in different parts of Bangalore city or/and via the B1 online portal. In effect, the citizens of Bangalore are the customers of the B1 project, which follows a Public-Private-Partnership (PPP) model and is run by a private consortium of two information technology (IT) companies - CMS Computers Ltd. and Ram Informatics along with a commercial bank called AXIS bank. The government organizations and other business organizations whose services are offered to the citizens via the B1 project are listed in Appendices A and B.

3.1.1 Integrated Services through the B1 Portal

The B1 web-portal is designed using Microsoft's .NET platform-based e-Governance framework. Any citizen can register on the B1 portal and is provided with a user name and password, using which all the services (see Appendix B) can be accessed. B1's IT systems have been integrated with the IT systems of the participating organizations whose services are offered through the project. Whenever a customer requests for a service from a participating organization through the B1 portal, the integrated B1 records management system searches and retrieves the customer details from the corresponding organization's IT system, allows the customer to complete the transaction and prints a receipt. The updated record of the customer subsequently gets reflected in the corresponding organization's IT system.

3.1.2 Integrated Services through the CSCs

Citizens can also access the services provided by the B1 project at integrated walk-in CSCs. Currently, there are 38 CSCs located strategically at different locations in the city. Current statistics of citizens' transactions with B1 highlight the relevance and usefulness of the CSCs. Records show that relatively few citizens have transacted through the B1 portal since its launch. In contrast, an average of 2000 transactions takes place everyday at each CSC. Each CSC is headed by a manager, who is assisted by about 20 customer service representatives (CSRs). The CSRs sit at transaction counters, which are equipped with computer terminals connected to the central B1 data center. All CSCs are equipped with an electronic queuing system and a help desk. Customers walking in to a CSC collect a queue number at the help desk and are directed to one of the counters, where CSR will be ready assist the customer and help them. Whenever customers request for a particular service, the CSRs through their respective terminals link up to the central B1 data center, retrieve the customer records, collect payments from customers (where relevant) and update the records. The customer is given a receipt and as with the payments made via the B1 portal, the updated records are sent electronically to the concerned organization and are soon reflected in the organization's systems. All payments made by customers are transferred to AXIS Bank on a daily basis. The services provided to citizens through the CSCs are summarized in appendix A.

3.2 Data Collection

We contacted the director of the B1 project team in early 2006 with an informal proposal to study the implementation process. While Bangalore is known globally as the IT hub of India and more generally Asia, it is also suggested that this competence in IT has not really filtered down to the

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[1] Karnataka is a state in Southern India with a population of 70 million. Bangalore city is the state's capital.

government organizations and that the services offered by these organizations to citizens have failed to capitalise on the improvements in the IT industry. This made the B1 project, which claimed to be the first project of its kind for the citizens of Bangalore all the more interesting from our perspective. The director offered his support for our fieldwork and put us in touch with a number of other stakeholders including members of his team, managers of the various CSCs and the technology team of one of the private partners. Subsequently, three phases of intensive fieldwork followed during which we conducted 45 interviews. In addition to the key stake holders mentioned above, the interviewees also included CSRs at the various CSCs, and customers. While some of the interviews were audio-recorded and transcribed, detailed notes were made immediately after interviews where the informants did not consent to the recording. Additionally, we also accessed a number of secondary sources of data such as the B1 website and reports about the project in the leading national and regional newspapers.

Part of the fieldwork was auto ethnographic (Karra & Phillips 2008) in that the author also hails from Bangalore and took this opportunity to be a customer and access the services offered by the B1 project a number of times during the fieldwork. Notes from such experiences were made and triangulated with the rest of the data. The fieldwork also included 'participant observation' where the we observed CSRs interacting with customers at the various CSC. Also, we visited some of the customer-centres of the government organizations whose services were offered in an integrated manner at the CSCs and observed interactions between customers and officials. This helped in comparing the service levels B1 offered with the service levels offered by the organizations individually.

3.3   Data Analysis

Based on our data collection process, which allowed us a longitudinal view of the B1 project, we identified four successive stages in the project, which fit very well with the four stages Tolbert & Zucker's (1996) model of institutionalization. It was also obvious from the data that the four stages were not completely distinct in chronological time, and that there were some overlaps between successive stages. For instance, the pre-institutionalization stage and the semi-institutionalization stages overlapped to a degree. However, adopting this conceptual model allowed us to focus more clearly on the data corresponding to the various control choices made by the B1 project team during the course of the project. We consolidated the primary and secondary data corresponding to each stage of the project and came up with themes, which were subsequently abstracted to identify the key processes that dominated each stage of the project. The data from the interviews and the recorded participant observations were subsequently open-coded to identify themes corresponding to the control mechanisms used in the context of the key processes. Travelling back and forth between these themes and the control literature helped us recognise the nature of the control modes used during the course of the project. An informal presentation of our preliminary analysis of was made to the director of the B1 project team at the end of each phase of our fieldwork. His feedback during this process was incorporated into the subsequent rounds of fieldwork and also used in triangulating the analysis.

4   RESULTS

In this section, drawing on Tolbert & Zucker's (1996) four staged institutionalization model, we present an analysis of the important processes during various stages of the B1 project and their control by the B1 project team.

4.1   Innovation Stage

The need to innovate and provide more effective services to citizens was acutely felt by the DEGOV in the wake of reports of projects being implemented successfully all over the world. Further, even neighboring states within the country were reported to be doing well on this front, which provided further impetus to the DEGOV's belief that it needed to bring about a transformation in the ways in which citizens accessed services in Bangalore. However, senior officials in the government also knew that it would be a big challenge to effectively control the trajectory of any public IS project that they

hoped to launch given that they had no previous experience of implementing similar projects. Also, they were conscious of the fact that the aims of the proposed project were well-meaning, but still ambiguous initially and therefore, its operationalization had to be carefully controlled. At this stage, the DEGOV created the B1 project implementation team and decided to proceed cautiously by first selecting the technology platform that was to underpin the project. Following this decision, an MOU between Microsoft and the GoK was signed during the Microsoft's chief mentor Bill Gates' visit to Bangalore in 2002. It was decided to implement the B1 project as a citizen service portal, using Microsoft's *.NET* platform based e-Governance framework. The Director of the B1 project explained:

> *"After careful consideration and several rounds of debate about the platform, during which open source was also considered, Microsoft's .Net software, which was offered to us at 45% of the actual cost, was finally chosen due to its ease of use."*

Microsoft also agreed to partially assist in the design, development and deployment of the citizen-centric IT portal without charging any fee. In charting the course of the project further, the B1 project team decided to seek out a private partner from the IT sector. To select the private vendor organization, which would be entrusted with the responsibility of implementing the project, advertisements were placed in all the leading newspapers in India. Seven vendor organizations submitted their bids for the project and after various rounds of scrutiny a joint bid by a private consortium of two IT companies was selected. CMS computers, the main partner and prime bidder was to provide the IT infrastructure for the project, while a second IT company, Ram Informatics was to take care of the software components of the IT infrastructure. An agreement was also reached with AXIS Bank, which agreed to provide banking services for the project.

In deciding which services to offer citizens initially, the B1 project team was constrained by the IT-preparedness of various government organizations whose services needed to be integrated with, and offered through the IT portal. Only those organizations whose back office processes were already automated could be covered in the project. Also, the B1 team had a tough time convincing various government organizations to share their customer databases for the project as they believed they would be losing autonomy and control to the DEGOV:

> *"It was quite a sensitive issue. We had a number of meetings with the organizations to explain to them what we were doing and how the B1 project only served to complement their operations. To get some of them on board, we needed to pull a number of strings in the government. This process took almost two years!"*

4.2   Pre-Institutionalization Stage

During the period leading up to the launch of the citizen service portal, the B1 team increasingly felt that while the portal may take public services online, the interests of the citizens would be best met if integrated services were also offered offline. In other words, the worry was that the B1 portal-based model, although futuristic and IT-centric, may turn out to be irrelevant to a majority of the citizens given that less than 5% of Bangalore's 7 million citizens own a computer. It was therefore decided to offer the planned services both via the portal and through customer service centers to be set up at convenient locations in the city:

> *"We were worried that the project would drift without focus if it was only online-based. We wanted to take control of it and shape it in such a way that it would benefit the majority. Of course this meant we had to convince our partners to get involved in a big way in the CSCs plan. They had their worries, given that their strength was in IT and not in running CSCs. But we told them that in addition to being a business opportunity, they could truly make a difference to the people of Bangalore by getting involved in the CSCs"*

After various rounds of negotiation, the B1 team managed to convince CMS, the private partner, to operate the various CSCs. The marketing of the project was to be handled by the B1 team in co-ordination with CMS. On the lines of a build-own-operate-transfer (BOOT) model, it was decided that CMS and Ram Informatics, in coordination with the B1 team would take up responsibility for the project operations for a period of five years with AXIS bank handling all the customer transactions. Over the five-year period, efforts were to be made to increase the number of CSCs in Bangalore and

to also expand and 'move beyond Bangalore' by implementing similar projects in other cities and towns of the state.

In other words, the project was to be a commercial venture for the two IT companies, with CMS, the leading partner managing the back-end data center operations and also employing 20 CSRs at each CSC, who were to be paid a nominal salary by UTI Bank in return for the project funds parked with the bank. In accordance with the service level agreement (SLA) signed, a transaction-based service charge, typically paid by the participating organizations or the citizens depending on the nature of the transaction, was payable to CMS. The project was to be evaluated periodically through independent agencies to ascertain that objectives such as scalability, replicability and cost-effectiveness were met. Appropriate methodologies like the Project Assessment Framework (PAF) designed by the Department of Information Technology, an agency of the federal Indian government, were to be adopted for evaluation purposes. The B1 project was officially launched in late 2005 with 14 CSCs in different parts of the city. Over the last three years this number has increased, and at present there are 38 CSCs in Bangalore.

With the decision to set-up the CSCs, the B1 team had to also deal with the process of selecting and training the CSRs, who would interact with customers and serve them at the CSCs. The process of selecting and training the CSRs was conducted in collaboration with the private partners. In addition to training the CSRs on the technical aspects, such as developing a basic understanding of the workings of the different organizations whose services were offered through the B1 project, particular attention was paid to their "soft skills". Indeed, it was evident during our interviews with customers that this was a crucial part of the training program. One of the main reasons customers preferred B1 over transacting at the individual organizations was the friendly 'customer service', something they believed was completely lacking when they transacted with the participating organizations directly.

4.3   Semi-Institutionalization Stage

A year or so after the launch of the B1 project, it was felt that the systems and processes related to both the B1 portal and the CSCs were operating smoothly. In the words of many citizens, transacting with government organizations even for the most basic of services was time consuming, troublesome and involved a great deal of uncertainty. Against this background, they felt that a project like B1 made such transactions much simpler and convenient. However, many customers suggested that the project was not marketed well among the citizens:

> *"Personally, I think this is a very good initiative we have. Given the general chaos in the government organizations I think an initiative like this introduces a sense of predictability into the system. But I am extremely surprised by the fact that this initiative has not at all been marketed well. The first time I came to know of B1 was not through any media. Rather it was when I took shelter from rain in a building where a B1 center was located! So if B1 is not on everybody's lips, I am not surprised."*

Interestingly, this point was echoed by the director of the B1 project who observed that the project needed to be controlled better and given better direction by effectively marketing it among the citizens. According to him, while a lot of time and effort had gone into getting the IT back-end ready and working, by comparison, less effort had gone into communicating the benefits of B1 to the general public:

> *"Over the past 12 months, we have tried our best to make the implementation effective in every possible manner. The idea was to get as many services up and running before we talked about it to the citizens. I can now say that we are confidently able to answer the questions raised by the citizens about B1. But, yes, we have not really had a fully fledged marketing campaign."*

According to a manager at one of the CSCs, for the first few months after the B1 project was launched, the number of transactions handled in a day was very few and the CSRs often had no customers to attend to for hours at a stretch. Subsequently, the B1 project team gave the various CSC mangers freedom to come up with their own innovative marketing strategies to ensure that citizens are made aware of the project and its benefits. In response, many managers and CSRs visited citizens' houses,

explained to them the services offered at their centre and invited them to make use of these services. This 'direct marketing' strategy coupled with the goodwill generated by 'word of mouth' publicity increased the project's popularity among citizens:

> "We now have close to 2000 transactions everyday and a number of our customers are very surprised at the ease with which things get done here. I sense that they almost expect something to go wrong and are pleasantly surprised that it does work."

During this period, the B1 team also contacted a few other government organizations, who were reluctant initially to be a part of the project. These organizations were presented with details of the initial successes of the project, which convinced many of them to agree to be a part of the B1 project. In fact, the successes of the project also encouraged a number of organizations in the private sector to request B1 to allow B2C services to be offered as part of the B1 project (see Appendices A and B).

4.4 Full-Institutionalization Stage

The goodwill generated among the citizens as reflected in the increasing number of customer transactions everyday and in the positive feedback from interviews we conducted with people who transacted at the CSCs suggests that the B1 project has become an integral part of citizens' everyday life. Now, plans are being made by the DEGOV to replicate the project in other cities of the state and to also formulate mechanisms to better evaluate the transformation the project has brought about:

> "So far we have evaluated the performance of the project based on the Department of IT's project assessment frameworks. This assesses parameters such as the number of everyday transactions, the average waiting times for customers after they enter the CSC and so on. We also know which CSCs are doing better than others when it comes to service standards. Everything suggests we are doing OK. But moving ahead, we are focused on finding out how we can evaluate it better, both formally and informally, not only from a project perspective but also from a citizen's perspective."

Within Bangalore, the increasing popularity of the project has led various citizen-interest groups to demand the opening of more CSCs to help citizens. An official at the DEGOV noted in response:

> "We do want to open CSCs at new locations, but given the real-estate situation and the rental market in Bangalore, finding a good commercial space to operate from is almost impossible. So, we are struggling a bit on this issue. But I think it is a good problem to have because it shows we have been able to do something good for the people through B1."

One criticism of the project has appeared on a few occasions, particularly in the electronic media and on various internet blogs. It has been pointed out that public IS projects in developed countries offer services that are quite advanced when compared to projects offered through B1. According to a senior-manager in the DEGOV:

> "Positive changes in our situation have to take place in an incremental fashion. Without understanding the context, if we fight global battles on our turf, ultimately the citizens will suffer. So it is important that we make a start, which we have done. If someone is unhappy with the lack of sophisticated services or whatever, it is their choice. We are more focused on bringing out a transformation in the way citizens access services and in this, I think we have succeeded to an extent."

5 DISCUSSION

Our analysis above highlights the key processes within each stage of the B1 project's institutionalization process and the mechanisms through which the key processes were controlled. This analysis is summarized below in Table 1. While the use of both formal and informal modes of control (see Table 1) in itself is not surprising given that the control literature has often demonstrated the use of both types of control at various phases of a project (e.g., Kirsch 1997, 2004), it is noteworthy that some of the most critical processes were controlled informally.

STAGE	PROCESS	CONTROL MODE	CONTROL MECHANISMS
Innovation	Technology platform selection	Informal	Internal discussions, debates
	Project partner(s) selection	Formal	Tendering process
	Project offerings' selection	Informal	Negotiations with participating organizations
Pre-Institutionalization	Contextual interventions	Informal	Negotiations with project partners
	Project (re)structuring	Formal	Service level agreements (SLA)
	Employee training	Formal	Mandatory training workshops
Semi-Institutionalization	Marketing & Branding	Informal	Decentralized improvisation
	Project ramp-up	Informal	Negotiations
Full-Institutionalization	Project evaluation	Formal	Project Assessment Framework (PAF) designed by the Department of Information Technology of the Government of India
	Project expansion	Formal + Informal	(Ongoing process: Control mechanisms being deliberated upon by the B1 project team)

Table 1. *An Analysis of the various Stages of the B1 Project*

Control was exercised over the process of deciding and selecting which services were to be offered mainly through long-drawn out negotiations with the respective organizations. In a sense, this informal mode of exercising control through negotiating and convincing was inevitable given that all the potential participating government organizations enjoyed a great degree of autonomy within the government. In these negotiations, fears of the politically powerful senior-officials and employees that they were going to be controlled more centrally had to be assuaged. Further, the low IT-preparedness of most of the organizations constrained the B1 project team even further. Theoretically, this process of controlling the choice of services to be offered through the project highlights the complex nature of the localized political contexts in India and suggests that informal control mechanisms may be the only option in certain circumstances. Although, implementation teams may prefer a more centralized and formal process for exercising control, the very nature of a politically charged set-up might render such a process unfeasible.

The marketing of the project was also controlled informally (see Table 1) with the managers of the CSCs being given considerable leeway to improvise when marketing the project among citizens. It was evident that the managers and the CSRs identified themselves very closely with the project and felt a great degree of ownership towards it after being encouraged to sell the project to citizens. As a manager of one of the CSCs noted: *"To be honest, it was just a job for me to start with. But after our director spoke to me one day and explained how we could make a big difference to citizens' lives by marketing this project well, everything changed. I felt I owned the project and saw how I was directly responsible for its success"* This process demonstrates what (Ouchi, 1979) referred to as clan control wherein promoting common values and beliefs (*eg: we all work for the greater good of the citizens*) within a clan (or group) influences the clan to show greater commitment to a project, leading to better control over the project's path. Interestingly, the invoking of common values also appeared to foster

in the managers and CSRs a greater degree of self-control as they regulated and monitored their own behaviors in-tune with the demands of the project (Jaworski 1988).

This exercise of self-control by managers and CSRs also needs to be viewed in the larger context of their socio-economic backgrounds and career aspirations. Many of the managers and CSRs came from a rural, rather than an urban background and did not possess the kind of cultural and career capitals, which was required to find employment in the much sought-after IT sector. However, they had very basic IT skills and were desperate to find 'good' jobs in Bangalore. They considered themselves very fortunate to have found employment within the B1 project (the B1 team adopted a policy of social inclusion in its recruitment of managers and CSRs) and were very dedicated to their jobs, constantly striving to impress their managers. Their dedication at work naturally had a positive impact on overall project control.

The process of marketing the B1 project also emphasizes the scope for decentralization within a centralized public IS project (Kimaro & Sahay 2007). It suggests that while the demands for decentralization potentially clashes with the underpinning aims of the project, decentralizing some processes may actually help exercise better control over certain aspects of the project. In spite of the effectiveness of the informal modes of control, data from our case also suggests that deploying them can raise questions about the transparency of the project. There is a increasing body of research that has examined issues of nepotism and corruption in public IS projects (e.g., Puri & Sahay 2008). Although it may not always be realistic, stakeholders more often than not expect to see formal control modes being deployed. This can create a tension in the institutionalization process of the project.

For example, the process of selecting the Microsoft (MS) technology-platform for the project was controlled informally (see Table 1). This decision to choose MS was questioned in a court by a citizen who wanted the project to be based on an open-source platform. The B1 team had to then expend considerable resources to explain how the MS platform was more effective in getting the project on its feet, both from a cost as well as from a compatibility point of view, given the prevalence of MS based IT infrastructures in most of the participating organizations. Similarly, questions were also asked at one point about why the project was not formally marketed among the citizens through an advertising agency. In short this tension between formal and informal modes of control, reiterates a crucial point often made in the literature: citizen trust has to be managed very carefully during the course of a public IS project (Grimsley & Meehan 2007). This point has particular resonance to the emerging economies in Asia where citizens are known to not trust their government's ability to provide essential services in a transparent manner. In addition to effectively adopting informal mechanisms of control, the B1 team also successfully adopted formal control mechanisms in the process of selecting partners, structuring the project, training the employees and evaluating the project (see Table 1). This is in tune with studies of control in IS research, which have demonstrated how successful projects often employ both formal and informal modes of control during specific phases in a project (e.g., Kirsch 2004).

5.1 Theoretical Implications

Our case suggests that the notion of transformation in a public IS project implementation is context dependant. A successful transformation in the way services are accessed by citizens in a developing country context such as India may not even qualify as a transformation in a different national and social context. As Krishna and Walsham (2002) note, lessons from successful public IS projects need to be carefully adapted to local contexts. A truly transformational project from a citizen's perspective in one context may only provide services that are taken-for-granted by citizens in a different context. It follows that project evaluation mechanisms, particularly in Asian developing countries need to creatively incorporate the 'context' aspects of a project in its assessments of transformation. As Irani et al. (2008) observe, 'soft aspects' that factor the perspective of the citizen are crucial in evaluating the nature of transformation and improvements in service delivery.

In their seminal study of public IS, Bozeman and Bretschneider (1986) offered a series of guidelines for implementation and evaluation of public IS. Two of these guidelines are particularly relevant to our discussion above of the B1 project. Firstly, they argue that a public IS 'is generally not a useful

means of enhancing managerial control' (p.484). In contrast, our study suggests that the deployment of a careful blend of formal and informal control mechanisms can actually improve managerial control over delivery of citizen services. Secondly, findings from our study echoes Bozeman and Bretschneider's assertion that (1986) planning for a public should be incremental rather than holistic keeping in view the potential political and legal uncertainties surrounding the project implementation.

6   CONCLUDING REMARKS

In our study, we highlighted the important processes that came into play at various stages of institutionalization of a transformation seeking public IS project in Bangalore, India. We also examined the ways in which these processes were controlled by the implementation team. The longitudinal nature of our study helped us get a process perspective of the B1 project. Although, our study is based upon a single case, we wish to draw attention to its adoption of the principles of analytical generalizability (Yin 2003). Nonetheless, our study has a number of limitations. Firstly, in our study exercise of control is considered from the perspective of the implementation team only. It is obvious that other stakeholders in the project (e.g., the project partners) too aimed to exercise control over the B1 project team at various stages during the project. Our study would be strengthened by including this perspective. Secondly, the key processes that we identified at each stage of the project are not an exhaustive list. Applying other research methods may help identify some more processes that are crucial at different stages of a public IS project. Further research is needed to empirically analyse the unique contexts of public IS project implementations in Asian countries to better understand both their potential for transformation and the likely barriers therein.

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Service offered	Department/organization	Service type	Details
Issue of birth/death certificates Payment of property tax	Bangalore Mahanagara Palike (BMP) – the local municipal corporation	G2C	A birth (death) certificate is issued to certify that the birth (death) has been registered with the municipal corporation. Citizens require the certificate for various reasons, such as property inheritance issues. Citizens can pay the tax due on their properties, which are registered with BMP.
Preliminary processing of passport applications	Regional Passport Office (RPO)	G2C	Citizens can submit applications for issue of fresh passports and for renewing existing passports. Using the unique file number, associated with each application, citizens can track the status of their application online.
Issue of monthly bus passes	Bangalore Metropolitan Transport Corporation (BMTC)	G2C	Citizens can buy monthly bus passes valid on different types of city buses.
Estimation of property value	Departments of Stamps and Registration	G2C	On requesting, details of the estimated value of a property in the city will be fetched from the department's database.
Fine payment service	Bangalore Police Service (BPS)	G2C	Citizens fined for violating traffic regulations can pay their fine at any CSC by bringing along their issued notice.

Appendix A. A representative list of citizen Services at the CSCs

Service Offered	Department/Organization	Details
Viewing and paying of monthly bills	BESCOM	Electricity bill payments online.
	BWSSB	Water bill payments online.
	BSNL, CellOne , Spice Telecom Tata Tele Service	Telephone bill payments of different land line and mobile phone service providers.
Renewal of Life Insurance policy	ING Vysya	Citizens can pay their insurance policy premiums online.

Appendix B: A representative list of services through the B1 portal