

Working Paper: Integrated Financial MIS for Local Government Public Expenditure Management - *A case study of Khajane in Karnataka*

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Abstract

Expenditure Management is critical to effective public service delivery, especially at the local government level. Leveraging on information systems to aid in expenditure management is viewed as an effective method in bringing about transparency and accountability in this process. Past research shows that there are a host of non-technological factors which determine the outcomes of information system implementations. This paper tries to outline these factors by understanding the phenomenon of public expenditure management which has been implemented through an Integrated Financial Management Information System in the southern Indian state of Karnataka –the paper also addresses implications for IFMIS implementation in developing countries in general. The research adopted an interpretative case study approach to study the phenomenon. The theoretical lens used was a combination of actor-network theory and control theory. The analysis shows that in a context where accountability relationships are not well-defined, the absence of control mechanisms leads to instability of networks of stakeholders. Further, the analysis also consistently highlights the importance of alignment of interests of local stakeholders – in a federal, decentralized context like that of India.

Keywords: Public Expenditure Management, IFMIS, local government, interpretivism, Actor-network theory, Control theory

1.0 Introduction

Much has been said and written about the juggernaut called Information Technology (IT) which has been instrumental in ushering in an era of unprecedented economic growth in India. Clocking an average annual growth rate of over 30% in the last one decade, and with a contribution of around 5% to the country's GDP (equivalent to \$47 billion), the IT sector has been instrumental in shaping the way businesses are run and how governments function.

Of particular interest to this study is the role of IT in the Indian Public Sector. E-governance projects in India assumed a mission mode approach in the public sector with the launch of the National E-Governance Plan in 2007ⁱ. Since then, there has been a concerted effort to promote and implement e-governance initiatives in the Public sector in India. E-governance initiatives in India have been well documented through impact evaluation studies ((Zambrano, et al., 2004), (IIMA, 2008)), and other studies have also looked into the causes for success and failures of e-governance projects (Heeks, 2008). All of these studies have documented certain pertinent issues which face e-governance implementations – mostly technological issues. But there are other studies which point out factors which aren't always necessarily related to technology. There are a host of other factors which shape the way a project folds out when it becomes operational; some of them being politics, motivation and other conflicts arising from stakeholder interactions and relationships (Kirsch, 2004).

The particular focus of this paper is in studying the phenomenon of public expenditure management which is being effected using the IFMIS at the local government level. More specifically the paper explores the underpinning factors contributing to its success or failure.

This paper describes the results from the study of Karnataka's experience with the *Khajane*. India is administratively divided into states and each state is further divided into districts. At the sub-district level there are both urban and rural local self governments, while rural local governments follow a geographical hierarchyⁱⁱ, urban local governments do not - their formation depends on certain criteria. The 73rd and 74th Amendment to the constitution created these local governments. Funds, functions and functionaries have been devolved to these local governments though the extent of decentralization differs from state to state. Every year, budget estimates are prepared by these local governments in coordination with state level planning and finance

departments. Funds for programs and schemes are routed through the state's fund to the funds of local governments who in turn undertake expenditure through implementation of various central, state and district sector schemes. This public expenditure management in Karnataka is presently being managed by the Department of Treasuries through an *Integrated Financial Management Information System*ⁱⁱⁱ (IFMIS) implementation called the *Khajane*^{iv}.

First attempts at automating treasury processes were made in 1987 in Karnataka, and by 1991-92 all district treasuries came under the ambit of the computerized system (GoK, 2009). From simple computerization of accounts, the department moved towards online transactions in the year 1999. A committee comprising of senior bureaucrats and external subject matter experts was setup to guide the implementation of *Khajane*. The software design & implementation was undertaken by a private vendor. *Khajane* became operational in 2003. Currently, the *Khajane* has been in operation for well over 7 years and handles on an average over Rs.17000 crores worth of transactions annually. This is widely regarded as a successful implementation^v from the perspective of the State government bureaucrats; however there hasn't been much documentation of the experiences at the local government level.

The particular focus of this paper is in studying the phenomenon of public expenditure management which is being effected using the IFMIS at the local government level. More specifically the paper explores the underpinning factors contributing to its success or failure. This paper describes the results from the study of Karnataka's experience with the *Khajane*.

One of the primary reasons for the choice of this research is that there is wide acknowledgement that expenditure management through IFMIS has the potential to substantially improve governance by providing the right kind of financial information at the right time which can be used to monitor, implement and administer programs and schemes effectively in India, as well as other Developing, transitioning & post-conflict countries ((Diamond, et al., 2005), (USAID, 2008)). Government of India has also recognized the importance of using an IFMIS, and through its National E-Governance Plan it has initiated a Mission Mode Project which will aid in computerization of treasuries in 626 districts which it hopes will bring in improved efficiencies, reduce costs, eliminate redundancies and facilitate the adoption of modern public expenditure management practices (NeGP, 2009).

Very few states in India have adopted IFMIS to manage public expenditure. In fact it is only Karnataka which has implemented IFMIS for the local governments as well. Given the focus on decentralization as a constitutional obligation, we were interested in studying how IFMIS has been implemented at the local government level. Hence, the key questions of our research study were: Has IFMIS been implemented successfully at the local government level? If yes, what are the reasons for the same? If no, why has this been the case? And what are the lessons we can learn from this case which can be useful for other states that are planning to extend IFMIS to local governments – in India and in other developing countries as well. Here, we define a successful IFMIS as one which can reduce information asymmetry leading to better interactions among the stakeholders of the system and subsequently contribute to improved public service delivery.

The research involved a cross-sectional study which spanned over a period of nine months from December 2009 to August 2010. Since we were studying an IFMIS implementation which had been operational for the past 7 years, we expected a certain level of maturity in processes, functionality and understanding of the system by the stakeholders. But, during the initial phases of research, we found that understanding of IFMIS was not consistent across stakeholder groups – this led us to explore the different contexts under which similar groups of stakeholders interacted and operated. Hence, through the months, different sets of stakeholders with similar roles and responsibilities across geographical locations were interviewed.

The paper is structured as follows. First, the research approach employed for this study including details of methodology, theory and methods will be explained. Followed by this will be a section which will give a detailed case description of Khajane tracing its development over different phases. After this, an analysis of the Khajane's role in Public Expenditure Management drawing on the Actor-Network Theory and Control Theory will be presented. In the next section, we trace back to our research questions and in particular we discuss how to effectively “control” IFMIS projects and we end with a discussion on lessons for other developing nations and states in India who are in the process of adopting an IFMIS.

2.0 Research Approach

We wanted to study how IFMIS was being implemented, capture the current phenomena and analyze whether they had been successful in achieving the stated objectives and the associated reasons. In order to do this, we had to fully understand the working of the IFMIS in Karnataka, the various stakeholder groups who were a part of it, the contexts in which the project functioned and had previously transitioned from. Empirical studies that collect such data referred to as “interpretative case studies” (Walsham, 1995). As opposed to positivism, where it is assumed that objective data collected by researchers can be used to test hypothesis, interpretivism is of the view that value-free data cannot be obtained by researchers, as the intended human-subjects are approached with preconceptions which alter the perceptions of both (Walsham, 2001). In the remainder of this section we shall discuss the methods which were employed for this study and also the reasons for our choice.

2.1 Methodology

We wanted to study how IFMIS was aiding governance and accountability through expenditure management. The institutional framework for expenditure management in IFMIS is such that there are multiple sets of stakeholder groups who perform similar functions in different geographical locations in parallel. Hence, we wished to study these interactions between and across stakeholder groups in particular contexts to understand the variety and nature of these interactions. By doing this we wished to establish if these interactions were context dependent or were a result of system design. Hence the methodology we adopted for this study drew on contextualism (Pettigrew, 1987) and methodological triangulation of methods. We designed the study as cross-sectional, in that we collected data over a period of nine months in different contexts from different stakeholder groups. Owing to the nature of the study, and also because there was a need to trace certain interactions to events in the past, we used historical reconstruction mainly through narratives of stakeholders of the system – both of the past and the present, to aid in the research. We also employed methods of observation, informal interactions with secondary & tertiary stakeholders to collect evidences for the study. Thus, employing different methods enabled us to gain more insights on the interactions between stakeholder groups.

2.2 Theory

For the purpose of this study, we wanted to analyze how stakeholder groups within the system interact to manage expenditure and effect budget control. During the initial stages of the study, we used the actor-network theory to study the relationships between the various actors in stakeholder groups. Later on, when we wanted to analyze how control was achieved in the project, we used control theory to describe how these interactions between actors were being managed. In this section we first describe the actor-network theory in some detail and then move on to a discussion on control theory. Lastly, we shall briefly talk about the application of these theories in our analysis.

Sociological and technological determinist approaches to explain networks (of stakeholders) take positions on the extremes which the Actor-Network Theory (ANT) debunks by giving neither a privilege. ANT explores the way in which networks of relationships are composed, emerge and come into being, how they are maintained, how they compete with other networks and achieve stability over a period of time or fall apart. ANT derives from the work of Bruno Latour, Michal Collon and others who propounded that human and non-human actor in a system needed equal treatment since separation between the two is difficult. For example, the result of an IS implementation can be possibly guided by the designers' socio-cultural background. ANT proposes a socio-technological account of network interactions where the network consists of *actants* which can be a human or a human artifact (such as technology or a manual). To treat both the social and technological elements fairly, ANT proposes three principles – agnosticism, generalized symmetry and free association.

One of the concepts in ANT is “*Enrollment & Transition*” which is described as the process of creating a body of allies, both human and non-human, through a process of translating their interests to be aligned with the actor-network (Walsham, et al., 1999). For this process of enrollment and translation, we propound that there should be due control mechanisms through which the outcomes can be achieved. Here, outcomes refer to adherence to organizational goals and objectives. One such tool for achieving organizational objectives by managing relationships between actors is control. Control attempts to motivate actors to behave in a manner which is consistent with organizational objectives (Ouchi, 1979).

Ouchi, in his seminal work, examines and lays down certain control modes such as market, behavior and clan control which is exercised through various control mechanisms such as rules, traditions, prices, incentives, and team-building activities (Ouchi, 1979). Other authors have also looked at trust and organizational structures as control modes (Mills, et al., 2003). Outcome control compares actual outputs of an actor as against desired outputs and a suitable reward follows depending on to the extent to which the adherence has been made. Behavior control is achieved by specifying required behavior which is expected to be demonstrated and followed by the actors, and rewards are based on how well they are followed. To exercise clan control, actors in a network are made to undergo a socialization process post which they are rewarded or sanctioned based on whether or not their behavior is consistent with what is required. Further to this, control modes are usually categorized as “formal” and “informal” depending on who initiates the control mechanisms. Organization driven control mechanisms are referred to as formal modes whereas employee driven mechanisms are referred to as informal mechanisms.

We will be using ANT in our analysis to understand and describe the emergence of networks of actants. The focus will particularly be on the process of enrollment and translation of interests of these actants with that of the objectives of the initiative (being public expenditure management) and the technology used to implement the same. We shall further use the lens of Control theory to understand how these networks are maintained.

2.3 Method

For the purpose of our study, we carried out detailed investigation in four districts of Karnataka where IFMIS was being implemented. Apart from this, we also visited and interviewed officials at the State level who were also a part of this project. In total, we carried out 19 formal interviews in different districts across hierarchies and groups (see Table 1 for more details). Interview guides were prepared for each set of stakeholders and these went through revision after every interview to incorporate relevant changes. Notes were taken during each interview, and were reviewed soon after. Each of these interviews lasted typically for around 30-40 minutes depending on the availability and interest of the interviewee. As most personnel wanted to maintain anonymity, tape recording was rarely used.

Other than formal interviews, secondary sources of data such as reports and studies were also consulted. This was especially required to understand the historical underpinnings of this project as it was into the seventh year of its operation. Other sources of data included formal meetings which were organized on our behalf in every district and also meetings at the state level, where we got a chance to interact with state level bureaucrats. One another source of information included feedback from the state level bureaucrats on initial reports submitted to them of the study. Access to these personnel was coordinated by the Expenditure Reforms Commission, Government of Karnataka. The commission was setup in 2009 to look into issues of expenditure reforms in the state of Karnataka by studying the existing institutional frameworks for service delivery. Expenditure management being an important aspect, the Commission ensured that we got a chance to meet key officials who were the primary stakeholders of this network.

Table 1 Summary of Interviews Conducted

Category of Stakeholders	Number of Interviews					
	Field Trip 1	Field Trip 2	Field Trip 3	Field Trip 4	Number of Interviews	Total Number of Respondents
Finance Department, GoK	2	Formal Meeting			2	11
District Treasury	2	2	1		5	5
Zilla Panchayat	2	2	2	2, Formal Meeting	8	10
Treasury Network Management Centre	1	Formal Meeting			2	1
Rural Development & Panchayati Raj Department, GoK	1	Formal Meeting			1	1
Local Elected Representative	1				1	1

An iterative process was adopted to analyze the data – more by eventuality rather than by design. Over the period of 9 months, various processes, issues and themes emerged. These were refined and modified with every iteration. Emerging issues and themes from previous field visits were included for discussions and interviews in the next round of field visits. The process of identification of actors was also iterative as we did not have a priori information on the structures and processes within the network.

3.0 The Khajane Case Study

In this section we provide the main description of the analysis of our case study - Expenditure management in local governments by Government of Karnataka using Khajane – an IFMIS. In the first part of this section an initial overview of the case is presented where we trace the history of computerization in this field, and explain certain key concepts which are essential to understand the case. After having set the context, we move on to analyze the case from the ANT perspective where we discuss existing networks, actants and their roles in the network. Alongside we also comment on how the process of enrollment and translation of interests is achieved through various control mechanisms.

3.1 Overview of the case

3.1.1 Brief History of Computerization of the Treasury: Initiation and phases of development of *Khajane*

Computerization of treasury operations was first introduced in the year 1987 where annually compiled accounts of the State Huzur Treasury (SHT) – the main treasury at the state level were compiled and sent to the Accountant General (AG). This was followed up by setting up a separate Treasury Computer Centre (TCC) in 1989 where annually compiled accounts of the SHT were sent to the AG's office. In 1990 first attempts at computerization were made at SHT, and by 1991-92 all district treasuries came under the ambit of the computerized system. From simple computerization of accounts, the department moved towards online transactions through an Integrated Financial MIS in the year 1999 with the initiation of *Khajane*.

Khajane – Initiation & Phases of development

Here, an account of the factors that lead to the initiation of the project and as well as the various phases of development has been presented through historical reconstruction. As pointed out earlier, the research period is set in more recent times – at a time when the project has completed seven years of operation. Most of what is presented in this section is drawing from interviews with officials and secondary sources of data – both through published case studies as well as news paper reportage.

Initiation

The initiation of Khajane was a need based one. As one study noted of the Khajane noted, there were many instances of “misappropriation of funds, over-withdrawal of funds, misclassification of expenditure, non-reconciliation, delay in settling accounts and settling claims” (NISG, 2008). Though there were significant computerization exercises in the treasury, owing to the increase in volume of transactions, deficiencies had crept into the system which was handling large number of transactions^{vi}. This led to the creation of a committee headed by the Secretary, Finance Department to study the system in totality. The study was aided by a panel of “experts” from the Indian Institute of Science (IISc), Indian Institute of Management (IIM) and the Software Technology Parks of India. Following this study, a team of officials from both the Finance Department and the Treasury Department visited treasuries in other states to identify best practices. The result of this exercise was re-engineering existing business processes in the treasury which amounted to eliminating redundant procedures and standardization of bill formats. Finally, a computerization manual was brought out in 1999 which detailed all treasury related operations and procedures. This would eventually serve as a starting point for developing the Information System.

Phase 1

A *steering committee* comprising of Secretary, Finance Department and experts from IISc, IIM was constituted to give overall direction to the project and dealt with policy, technical and software related issues. Operational issues were handled by an *implementation committee* which was headed by Secretary (Budgets & Resources), Finance Department with members from the Directorate of treasuries, System & Network providers and the AG.

The bidding for the project followed an Open bidding system, for pre-qualified participants. The pre-qualification requirements ensured that only “capable” bidders participated in the process. The entire process was managed by Karnataka Government Computer Centre, which has been recently rechristened to Department of E-Governance. CMC Ltd. (now a subsidiary of Tata Consulting Services) and STPI emerged as successful bidders for the project. CMC, being the service provider handled the development of the application software, hardware installations,

training of staff and maintenance of facilities while STPI provided the network infrastructure using Wide Area Network and VSAT technology.

Phase 2

In this phase detailed system requirements and design documents were developed – the computerization manual developed earlier served as a guiding document. Also, to ensure the design met the user needs, at every step the concurrence of officials from the implementation committee was sought along with inputs from other treasury officials. An initial pilot application was developed which was field tested in five different implementation sites for a period of six months; the sites included treasuries in both district and sub-district level. Feedback from the treasury staff was used to refine the application.

Phase 3

A Treasury Network Management Centre (TNMC) was setup which now hosts the central server and database. Simultaneously, district and sub-district level treasuries were equipped with necessary infrastructure and were connected to the TNMC via WAN. A training of trainers followed by intensive training for nearly 2000 officials was carried out for all levels of operation including data entry, systems administration, and network management by CMC. A user manual was also developed to this end.

This phase as evinced by many officials was the most testing phase as the transition from a manual system to an automated system had to be made – this entailed revision of roles and responsibilities of the departmental staff.

The project became operational in the year 2003. However, expenditure management in local governments was still being done manually. Delays in availing funds and bill clearance were still common place. *Letter of Credit*^{vii} system was in effect for certain departments. It was in this year that computerization of expenditure management came into effect for local governments as well.

Current Scenario

Expenditure management has been implemented for all Urban and Rural Local governments in the State of Karnataka. Table 2 lists the key actors in *Khajane* in the current scenario. These are -

Table 2 Key Actors in the Khajane

Actor	Description
<i>Directorate of Treasuries</i>	This is the chief agency which manages and coordinates the operation of the treasury in the state through the Treasury Network Management Centre (TNMC) at Bangalore. There are 31 District level treasuries and 216 Sub-Treasuries at the Taluk level (there are no treasuries at the GP Level) and the State Huzur Treasury (SHT) in Bangalore. Each Treasury has a server and several computers which are used for data entry and bill processing. Every district treasury has a District Treasury Officer and Assistant Treasury officers supported by <i>case workers</i> and <i>front desk workers</i> .
<i>Local Government</i>	Every LG has officers (usually the Chief accounts officer and Accounts Officer(s)) who coordinate with the treasuries and state level departments. Every LG also has a computer with <i>Khajane</i> software installed. But these terminals are not connected to the server – they are stand alone machines which are used to generate data which are
<i>Line Department</i>	Every <i>Line Department</i> in the state has a <i>Nodal Officer</i> who coordinates with the TNMC, District treasuries and the sub-treasuries. Also the Head of the Departments function as the Chief Controlling Officer (CCO) for that department. At the district level there is a Controlling Officer (CO) who is the CEO/CAO. Depending on the program, there are Drawing & Disbursing Officers (DDO) and <i>Implementing Officers</i> in district and/or taluks. Line Departments here refer to Activity specific departments such as Agriculture, Water Resources, Finance, etc.
<i>IT Service Provider (Facility Management Service)</i>	<i>IT infrastructure services</i> is provided and managed by CMC Ltd. which has in turn sub-contracted certain functions such as maintaining power supply.
<i>Citizenry of Local Government</i>	Beneficiaries of the various schemes and programs of the government, who elect governments to power

3.2 Analysis

In this section we analyze the details of the case. We initially begin with understanding of the larger system - the actors, the technological artifacts. After this, we use ANT to analyze the current network, and aided by historical reconstruction we also trace the genesis of these networks. We then analyze the causes for failure and success of these networks which manage through the lens of control theory by examining the power and accountability relationships existing in the system – between various groups of actors of the system.

3.2.1 Of Actors, artifacts and networks

Khajane – the IFMIS, is a system comprising the computer network and other hardware, the MIS which is the software and data which enters the system at various levels. Also, each of these components has specific interfaces with human actors. Human actors combined with these technological artifacts comprise the system in totality. There are broadly five groups of human actors comprising the system - the state level bureaucrats, who are part of the project conceptualizing team; the users of the system – directorate of treasuries staff at the state and sub-state level; the office staff at the local governments; the local elected representatives, and finally the citizenry of local governments. The remainder of this section will present an analysis of the genesis and evolution of actor-networks through historical reconstruction.

Starting Block – Initial network creation for project roll-out

In this section we shall explore the process of creation of actor-networks during the course of implementation of *Khajane* in the context of public expenditure management and also analyze the reasons for their successes and failures as the case may be. We first look at the process of creation of the network for initiating the project, and then we analyze how these networks were maintained during the course of project development and deployment. We then explore how the network was expanded to include local governments for public expenditure management. Finally, we end with an account of the present status of these actor-networks and how they are being managed.

The network of aligned interests that enabled the initiation of *Khajane* can be considered to have contained three groups of human actors, in addition to the technology itself as a non-human actor. These groups consisted of officials from the Finance Department, Directorate of Treasuries and experts from IIM, IISc and STPI. We shall now examine the process of enrollment and translation for each of these actor groups which eventually led them to participate in the network of aligned interests.

The Finance department was one of the key actors to initiate the project. As mentioned earlier, to curtail malpractices and to reduce wasteful expenditure, the department was keen on reengineering and upgrading processes and systems of the Treasury. Also, the Directorate of treasuries which carried out the function of facilitating public expenditure management was keen on streamlining its own processes to make it more implementation friendly for its staff. The process of enrollment and the subsequent translation of interests of these actors to be aligned with the technology did not require much effort as the perceived benefits.

A joint committee comprising of officials from the Finance Department and Directorate of Treasuries was created to study and reengineer all treasury processes – they were helped in this process by a panel of experts from IISc, IIM and STPI. For IISc and IIM, this project served their research interests, while STPI as it will be discussed later emerged as one of the two vendors for this project – their interests were aligned as the project posed a potential commercial interest.

The result of the exploratory study and business process reengineering was a *Procedure manual for computerization of treasuries*. This manual now clearly documented in detail every reengineered treasury process. The manual can be considered as a non-human actor at this stage, and since there are viewpoints of the departments and actors inscribed in it, the hand-book can also be considered a *delegate* in ANT terminology, which is having the property to “stand in and speak for” such inscribed viewpoints (Walsham & Sahay, 1999).

Once this process of documentation was complete, bids were called for from pre-qualified vendors. It is perhaps important to take cognizance of the fact that STPI, which was on the expert committee panel emerged as the successful bidder for providing network infrastructure services. Although a market control mechanism was adopted to avail the most cost-effective services, we

see that STPI emerged as the successful bidder. This throws up a few questions on the efficacy of even using a market control mechanism in a highly bureaucratic environment.

A senior treasury official remarked –

We cannot run behind a number of vendors. We prefer interfacing with limited number of vendors. That makes our task easier; this way can we just hold one vendor accountable if something goes wrong.

The officials here made an assumption that control can be ensured and affected by having fewer vendors, however as we will see in subsequent sections this method cannot guarantee better control.

Once the vendors were finalized the process of developing the application began. In this phase, the application design was guided by the manual which had been brought out earlier. Also, it was important that the application adhered to the laws of the state.

The software was built to suit our need....of course, this meant that we had to create exceptions and create additional master databases.....but we were quite confident that the software can handle this level of complexity.

That technology does not fail is a *given* – for the department officials. “*System cannot fail*” is deeply held belief among the officials. In every correspondence that we have had with officials the same attitude has been reiterated. This aspect will be discussed in further detail later on. It is also interesting to note here that the term *system* is used as an abstraction for the software and hardware which goes into public expenditure management.

Since the application was developed on a pilot basis, field testing of the same was done at district and sub-district levels. It was only at this point that staff of the treasury department at the local level came to be involved in the project. The process of enrollment of local level staff happened only post-implementation. Any computerization in the treasury so far was limited to computerization of accounts at the head-office in Bangalore. It was only now that the staff was witnessing a transition from a manual system to an automated system. To facilitate this transition extensive training programs were conducted for staff at all levels.

People became aware that they could use the computer to carry out their work. Now they knew what a printer was. However, there was still a prevailing fear that the computers would replace them.

Even after ten years since the project's initiation, the senior official stated that such a fear still persists among the staff. The “*Us and them*” notion of humans with respect to computers and computerization still prevails.

Maintaining the network through development and deployment

The network was maintained by both the implementation committee and the steering committee. Once the project became operational in 2003, the Department of treasuries took over the functioning of the project. CMC Ltd. was given the contract to maintain the facilities, and they continue to do so to this date.

The functional “system” with inscribed interests - the IFMIS can be considered a *black-box* – in ANT terminology. We see that the IFMIS transitioned from being a *delegate* in the form of a manual to being a *black-box* with properties of “irreversibility”. The property of IFMIS as being “frozen organizational discourse” (Bowker and Star 1994, as cited in Walsham & Sahay, 1999) can be inferred from the following account of the directorate of treasuries which was in response to one of our preliminary findings report –

“...Most of the lacunae are in the nature of human errors rather than systemic deficiencies...”

Another senior official from the department noted –

“The system is “pukka”^{viii}...it is there...tomorrow if someone asks me to change something...I can't do anything about it...the system will do its job” [said in the context of being asked to subvert data]

As early mentioned the abstracted *system* and the belief that the system cannot fail is a pervasive mind-set.

Including local governments in the network

As brought out earlier in this section, the process of decision making and planning is largely top-down. No serious effort was made to enroll officials and elected representatives at the local level.

Only in 2007, when “budget control” (expenditure management) was started for local governments did the officials at the treasury department train the local level Drawing & Disbursing Officers (DDO) and Controlling Officers (CO) of various local line departments. More than three years had elapsed since the time when the project had been rolled out and this was the first instance when the local governments became an active part of the network.

Networks in action – maintaining networks at the local level for public expenditure management

To understand the genesis and dynamics of networks at the local level, it is important that we take cognizance of the prevailing power and accountability relationships that drive decision making in the hierarchies of governance.

B.M & Stodgill (1990) (as cited in (Robbins & Judge, 2007)) define *power* as “*the capacity that A has to influence the behavior of B so that B acts in accordance with A’s wishes*”. The existence of power is largely because of the existence of a dependency relationship which allows the A, in this context, to exert “coercive” and “legitimate” power over B (B.J.Raven, cited in (Robbins & Judge, 2007)). *Khajane* functions in a decentralized governance context and decentralization laws required the state to devolve funds, functions and functionaries to local governments. The degree of decentralization varies from one state to another in India. Karnataka has enacted laws through which all of the listed twenty nine functions have been devolved to the local governments. However, funds and functionaries are still largely controlled by the state government. In a high-power committee meeting, an official of the Planning Department of the Government of Karnataka noted -

Around 9.97% of the state government’s budget goes towards sub-state local governments. There are hardly any untied funds which the local governments can use to develop plans locally. More than 90% of allocation in the state budgets is for schemes designed at the state level...However there are schemes worth Rs.8000 crores which can be handed back to the local governments...but this is the decision for the state to take.

The state government in this way exerts power over local governments by having a control over fund allocation and the local governments are in a dependency relationship with the state as any

decisions pertaining to fund allocation solely rests with the state. This relationship of power also defines the accountability relationships, which will be discussed shortly.

A Social Welfare Department official commented with reference to local governments in a high power committee meeting-

Local governments are a nuisance. No work gets done. There is corruption, and no accountability. The quality of development is also poor. It was better when we were handling everything.

This is a common sentiment echoed by many state level department officials. There is a prevailing fear of “losing-out” on power to these local governments. A testimony to this fact is that of late many of the functions of the local governments are now being handed back to the state’s machinery – and also as mentioned earlier nearly Rs.8000 crores worth of schemes and programs which were earlier been implemented by the sub-state local governments have been taken back.

Even the local government staff shares a similar view – referring to the local elected representatives. The staff in local governments sees themselves being more accountable to the state departments than to the local elected representatives. Here we define accountability as “administrative accountability” as defined by Dwivedi & Jabra(1989). As *Diagram 1* depicts, despite working in the local government, the staff’s administrative accountability is to their respective state level departments who manage their appraisal and recruitment process, and whose confidential reports they write. Adding to this, the local government staff implements both state and district schemes and as discussed earlier more than 90% of the funds at the local government are in the state schemes. This perverse situation has resulted in a loss of control for the local council and subsequently led to weaker accountability relationships at the local government level.

Whilst the local elected representative’s “political accountability” (Dwivedi & Jabra, 1989) is still with the citizenry of the government, they are not in a position to demand accountability from the implementers of the schemes and programs. This is also complicated by the reality that the local citizenry can hold only the local government accountable whereas they hardly have any

interface with the elected representatives at the top of the hierarchy who invariably drive policy and decision making.

Diagram 1 pictorially depicts these relationships.

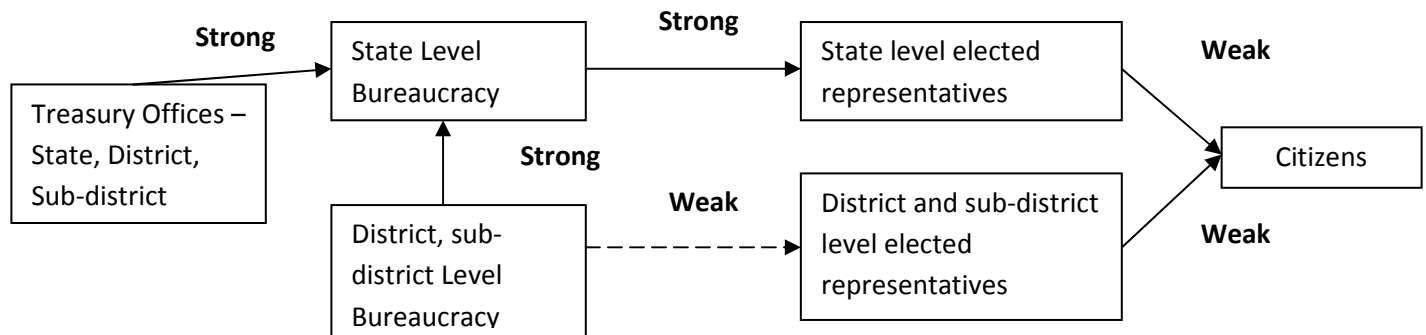


Diagram 1: Accountability relationships in the system

To add to the discussion, during an interview which was shot a film on decentralization^{ix}, a local elected representative noted (although not a part of this particular study) –

Decisions happen in the state level. We are not called for any meetings. One fine day they tell us that a drainage project has been approved. And we are required to raise taxes to meet the expenses partly. How can they take decisions which have political implications at the local level?

What also comes out of this is that the policy making process, of which local governments are an important stakeholder are usually undertaken without due consultation. There is hardly any interface between the state level bureaucracy and the local governments – including the local government staff. As we described even earlier, there was no specific effort to enroll actors at the local level through the different phases during the course of implementation of *Khajane*.

We now set out to analyze see how these relationships among other factors influence public expenditure management at the local government level.

As one District Treasury Officer of a northern district in Karnataka expressed –

We work in coordination with the local government staff...Yes, problems are there but given the state of affairs we know that we have to coordinate well otherwise works will get delayed.

In contrast to this, a local government staff in another district expressed –

See, for any minor correction we have to send our man multiple times over. We are not even in the same building...and sometimes they won't even tell what is wrong properly. Because of the token system we need to keep going back to get our bills passed...and if there is a problem we won't even know unless we ourselves go and check...sometimes if the problem cannot be solved at the district there is know we get can resolve sitting here...we have to make trips to Bangalore.

The networks which have been initiated through bureaucratic control by the state government depend on local accountability and informal relationships for their success. What we saw with the first case was that the District Treasury Office and the local government office were able to find common ground and align their interests. Whereas in the latter case, we see that in spite of the fact that the actors in the local level are the same, the network fails to sustain.

This is another factor which destabilizes established networks. Working relationships are built over a period of time between officials of local governments and district treasury officials. In the Indian Bureaucratic system transfers of officials are rampant¹. Frequent transfer of officials disrupts established networks, and the process of enrollment and translation has to be repeated with every new official due to absence of a control mechanism as the actors do not share a formal accountability relationship.

This also points to the earlier observation that local level actors are not consulted while taking decisions which affect local level stakeholders. The transaction costs involved in maintaining these networks could have been minimized if local level actors had been consulted. A case in point is the design of the software which illustrates this observation.

We have earlier posited that IFMIS brings in transparency which leads to better public expenditure accountability and management. However, the software design does not allow the local government - one of the key local level stakeholders, to even have a read-only access to

¹ Needs reference

their fund allocation status. Their office is not connected to the server and this brings about many issues and constraints which have been partly expressed by the local government staff.

Also, we see that in the past ten years of operations, apart from minor bug fixing and addressing information security related issues there have been no major upgrades to the software. This again goes back to view point of officials of Khajane being a black-box and not open to questioning. On one occasion when the findings of this study were shared with the Treasury department officials, we got a response stating that –

...Most of the lacunae are in the nature of human errors rather than systemic deficiencies...

The increase in the number of transactions has had an impact on the operations of the treasury department especially at the local level. As one senior treasury department official expressed –

The transactions being handled by Khajane has seen a seven-fold increase since its inception...yes we are aware that there are problems, but there is also the issue of budgets...We do not have enough funds to fulfill our wish list...

This throws up a variety of issues. For one, back-up power supply in most of the district treasuries haven't been upgraded to counter the increased work-load. In one of the field visits, there was a power outage which lasted for the entire duration of the interview.

While visiting the treasury department at Bangalore, the official noted –

Around 22 district treasuries are having trouble with power supply. The vendor is mainly the cause for this. He waits for payments from our end to pay the sub-contractor. When that is delayed, the sub-contractor does not do his job. We have our own constraints, why should they (facilities management vendor) wait for our payment.

This brings us back to the issue of control and coordination and points to the role of vendors in maintaining networks at the local level.

It was earlier mentioned that the department had resorted to keeping the number of vendors to a minimum to ensure effective coordination. However, we see that this does not necessarily tackle the issue. The official still had to chase the sub-contractor himself to get the job done. Also, since

the vendor was not under any performance based contract it was difficult for the treasury officials to monitor and levy appropriate fines in cases of non-compliance.

As a district treasury official noted –

Please see that person working on the system...there are no proper chairs to even sit on to work for long hours...power is another huge problem...we have 8 computers now...but the workload has increased by a lot...now with the same 3KV line we get backup power for only half an hour...which is not adequate...and I cannot do anything about it.

At the local level – in District Treasury offices especially, any problem they face with the hardware and infrastructure, the problem has to be escalated to the Bangalore office. The officials at the local level do not have sufficient powers to rectify the situation locally. This often times leads to delays in resolution of problems.

A key issue which also affects public expenditure management at the local level is training and capacity building of local staff. We had earlier mentioned that the process of enrollment and translation of local level actors happened only during the time of training. This is the only time when there is an opportunity of alignment of interests of local level actors with that of the technology. However, there is no designated training schedule for staff working on the Khajane. A senior official also acknowledged the lacunae in this aspect –

Training of staff is usually “on the job”. There are no specific training programs for staff. By the time people get to know the system, they are transferred to other postings...We also have staff who get deployed here on “sympathy grounds”...they rarely have the right skills...We are not a training agency...we have other priorities...It is the state training institutes responsibility to train the staff...Group C and D staff are trained in district training institutes while Group A and B staff are trained in Administrative training institute...

This is also compounded by the earlier mentioned observation of transfers of officials.

There were certain interesting observations which came about during the course of the study which may be worthwhile taking a note of. In the next section we shall discuss some of these and

4.0 Lessons for implementing Public Financial Management Information Systems

We started the research study by asking the question – Has IFMIS been implemented successfully at the local government level? If yes, what are the reasons? And if not what are the causes behind the same? In this section we try to answer these questions. We also delve upon drawing key lessons for other states and developing nations who are keen to implement IFMIS for their local governments.

As far as the success of IFMIS in general goes – in effectively replacing the manual system of public expenditure management – the answer is a clear “yes”. But has the IFMIS achieved its objective in removing information asymmetry at the local level, ensuring transparency and accountability? – the answer is not a straightforward one. While the point of view of the state level departments is that they have effectively been able to manage public expenditure by addressing the issues of the manual system, what seems to have been lost in translation is the fact that the local governments have very limited freedom to manage public expenditure themselves.

This goes back to a much larger issue of how serious the State government is about decentralization. Public Expenditure Management as of today has been reduced to a matter of compliance on the part of local governments. Only 9.7% of the entire expenditure is done through local government schemes – and in even these schemes there is very little flexibility for local governments to plan for local needs.

There are about 8000 crores worth schemes and programs which can be handed over to the local governments...these schemes were earlier a part of these local governments...however handing them back over is a policy decision which has to be taken at the state level...

This was a comment made by a senior official from the Planning department. Local governments have very little “untied funds” which can be used to address certain very local issues and needs. Most of the programs and schemes – around 90% as noted earlier are planned and budgeted for at the state level. So, public expenditure management in its true sense can be a reality if decentralization is implemented more rigorously.

A more serious attempt at decentralization also has the potential to re-shape political and accountability relationships in a manner which is beneficial at the local level. What we have seen thus far is distortion in these relationships which has led to limited accountability. However, such changes imply changing deep-rooted mindsets of bureaucrats and other state level officials; and not excluding politicians at the state level as well. While this change is not impossible, we also acknowledge that it is a slow process. We also need to keep in mind that most of these issues pointed out in our analysis are problems of implementation and not because of a lack of public policy. As a senior director of a state managed institute pointed out –

...See most of the issues that you are dealing with are quite well known...it is not that the government has not made resolutions...I have this order with me which goes back to 1995...if its implemented it can solve some of the concerns which you have brought out...but it still lies in a file!

What comes out as an underlying theme in most of our analysis is the limited involvement of local governments – where they are not seen as an important stakeholder during the process of making key decisions. For alignment of interests, it has to be ensured that local level stakeholders are also consulted. Without this consultative process, new systems are not accepted easily, a case in point is when a local government official pointed out to certain delays in availing funds. While a “soft-copy” of the order was available online, the local government staff invariably waited for a “hard-copy” to be mailed to their department. This is just one such instance. Alignment of interests, which is a pre-requisite for stable network creation, can be achieved if the local level stakeholders’ needs are met. A failure to account for this invariably leads to unstable networks – the success or failure of which eventually comes to depend upon the quality of interactions of human actors. What we are positing is that, network creation and subsequent durability can be achieved if the starting block of alignment of interests is adequately addressed.

Another ancillary issue which came out through the analysis is the need for training and capacity building at the local level. The timely implementation of this serves the dual purpose of alignment of interests of key stakeholders and also acquainting them with the functionalities of the system. But currently, there is no system of training and capacity building in place. What the officials refer to as “on the job training” is more of a euphemism for ad-hoc training with no

clear objectives. Since training and capacity is nobody's child, the quality of manpower suffers. Added to this, Indian bureaucratic system of transfers and rotations brings in an element of uncertainty. These two issues working in tandem contribute to destabilizing networks. Given the fact that changing the way bureaucracy functions requires political will, and since there are no immediate solutions coming this way, the problem of training and capacity building we feel needs to be addressed internally – with a concerted effort coming from both the treasury department and the local governments.

There are other areas of concern which can be addressed through what is known as structural empowerment. Structural empowerment here refers to the “*formal horizontal decentralization of authority such that decisional power flows to employees from formal structures*” (Mintzberg, 1979 as cited in Mills & Ungson, 2003). It is argued that structural empowerment also brings with it the agency dilemma and this could perhaps lead to objectives/goal incongruence. Mills & Ungson (2003) suggest two ways of countering the agency problem – 1) through organizational constitution and 2) through system-wide trust. Here, we argue that organizational constitution can be used as a means of countering the agency problem. Organizational constitution is defined as “a set of agreements and understandings that define the limits and goals of the group (collectivity) as well as the responsibilities and rights of participants standing in different relations to it”(Zald, 1970 as cited in Mills & Ungson (2003)). For example, as we have noted earlier the issue of maintenance of local level infrastructure like uninterrupted power supply. We argue that if local units are empowered to have discretionary power on certain pertinent, local issues and can make appropriate decisions supported by locally available funds to manage their own infrastructure, other related issues can also be addressed more effectively.

So far we have discussed in some depth and detail the lessons for implementing IFMIS in the Indian context, and especially at the local government level focusing on state-local government relationships. The remainder of this section will deal with some of the implications for implementing IFMIS in developing countries in general.

There are some issues which are relevant to any developing country context, while some need local footing.

Table 3 Lessons for Developing Countries - IFMIS Implementation

Factor	Comments
Government Structure	Much of the dynamics presented in the paper has to do with the type of relationships shared between levels of governments. It is important to consider these relationships – both legal and political while designing an IS.
Existing legislation	The existing legal framework needs to be taken into cognizance for IS design. This becomes especially challenging in post-conflict countries where legislation is still fluid.
Training & Capacity Building	A comprehensive training and capacity building program will increase chances of network success. This will help in enrolling stakeholder groups and also align their interests to that of the technology.
Alignment of Interests	It is important that primary stakeholder groups are made to enroll and subsequently align their interests to that of the technology. Specific initiatives need to drive the enrollment process. Participation of key stakeholder groups in a consultative process can go a long way in winning trust and instilling confidence.
Managing Change	The diversity within stakeholder groups makes any kind of change management an important and sometimes a challenging task. Nevertheless, it is best realized that some of these intended changes are deep-rooted psyches which take a long time to come about.

The factors mentioned are relevant while designing not only an IFMIS but any IS in general in a developing country context.

5.0 Conclusions

IFMIS implementations have emerged as one of the key strategies to manage public expenditure in a developing country context. An efficient IFMIS has a positive impact on service delivery. The factors leading to a successful IFMIS implementation is not having access to better technology alone. There are a host of other non-technological factors which govern the success or failure of technology implementation and acceptance. These factors are especially heightened in a developing/transitioning country context.

Here we have presented a case study of *Khajane* – an Integrated Financial Management Information System and its role in expenditure management in local governments. In order to study the system we used the combined lens of the Actor-Network Theory and Control theory to understand and explain the phenomenon. We argued that there is an organic link between network creation and control mechanisms - that the processes of enrollment, translation and alignment of interests occur through adaptation of control mechanisms, and failure to do so results in unstable networks. We especially stressed on the importance of alignment of interests of local level stakeholders – more specifically that of the local government, to better effect outcomes of expenditure management.

We also drew some of the key factors that need to be taken cognizance of while implementing an IFMIS in developing countries. Some of them being- considering the existing legislative framework, having an ongoing training and capacity building exercise by creating “knowledge pools” locally and taking the necessary steps to ensure alignment of interests of key stakeholders with that of the proposed technology.

The study has its own limitations. A key limitation was that we could not interface with the vendors of *Khajane*. Also, due to time constraints we could only investigate a limited number of stakeholders. However we do firmly believe that these do not adversely affect the inferences that we have drawn and presented in this paper. Also, a case study method based on semi-structured interviews has inherent limitations – and we do acknowledge the same.

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Notes

ⁱ National E-Governance Plan (See URL: http://india.gov.in/govt/national_egov_plan.php)

ⁱⁱ Geographical Hierarchy refers to – Zilla Panchayat (ZP), Taluk Panchayat (TP) and the Gram Panchayat (GP) – here GP refers to the last unit of local government. N number of GPs comprises a TP, and N number of TPs comprises a ZP. In this paper the reference to a local government and a local elected representative refers to any of this level unless specifically mentioned.

ⁱⁱⁱ Expenditure management is one of the critical functions of an IFMIS

^{iv} *Khajane* in Kannada, the most widely spoken language in Karnataka means *Treasury*.

^v *Khajane* received the Silver Icon award in the "Outstanding performance in service delivery — professional category" at the ninth National Conference on e-Governance (See <http://www.hinduonnet.com/2006/02/15/stories/2006021509780400.htm>)

^{vi} About Rs.36000 crores of receipt and Rs.46,000 crores of payments annually

^{vii} This enabled the fund releasing officer to issue a Letter of Credit (which is a letter of authority) to the bank where normally government transactions took place and a copy of the same was sent to the treasury. This letter had monetary ceilings for the drawing officers at the local government. The drawing officer would then claim the disbursement by presenting the bill to the bank. This system however did not ensure prudence in expenditure management and it was abandoned through a Government Order in 2007.

^{viii} *Pukka* in colloquial Hindi means a state of being permanent and strong

^{ix} CBPS Media: Video on Governance in Municipality