PUBLIC EXPENDITURE MANAGEMENT THROUGH KHAJANE – AN INTEGRATED FINANCIAL MIS

Teaching Cases

Sandeep M.S.1
School of Business & Economics
Loughborough University
Leicestershire, UK
LE11 3TU
s.m.sandeep@lboro.ac.uk

M.N.Ravishankar
School of Business & Economics
Loughborough University
Leicestershire, UK
LE11 3TU
m.n.ravishankar@lboro.ac.uk

Abstract

Public Expenditure Management is critical to effective public service delivery, especially at the local government level. Leveraging on information systems (IS) to aid in public expenditure management is viewed as an effective method in bringing about transparency and accountability to governance processes. Past research shows that there are a host of non-technological factors which determine the outcomes of information system implementations. This teaching case tries to tease out a few such crucial factors in the implementation of a IS project for public expenditure management. The case is set in the southern Indian state of Karnataka where an Integrated Financial Management Information System called Khajane is used to manage the function of expenditure management.

Keywords: IFMIS, Public Expenditure Management, Decentralization, Khajane, Electronic Government

1 Please contact this author to obtain the teaching note
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 Gross Domestic Product (equivalent to $47 billion), the IT sector has been a major contributor in shaping the way businesses are run. In addition to this, the IT sector also has the potential to play a significant role in the functioning of government and to improve governance. Public Management Information Systems (PMIS) (Sundgren, 2005) are one such initiative in this sphere which has had considerable impact on governance processes.

PMIS in India assumed a mission mode in the public sector with the launch of the National E-Governance Plan in 2007. Since then, there has been a concerted effort to promote and implement such initiatives in the public sector in India. Such e-governance projects in India have been documented through impact evaluation studies (Zambrano, et al., 2004; IIMA, 2008; ARC, 2005), 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 information system implementations – mostly technological issues. However, there are other studies which point out factors which aren’t always necessarily related to technology. There are a host of other drivers which shape the way an information system project folds out, right from initiation to operation; some of them being - politics, motivation and other conflicts arising out of stakeholder interactions and relationships (Kirsch, 2004). This case contributes to the existing discussion on how these non-technological factors affect PMIS by examining the case of Khajane which is an Integrated Financial Management Information System (IFMIS) operational in the Government of Karnataka, which is a southern Indian state.

Khajane is one of the most successful, precedent-setting PMIS initiatives in India. It was implemented at a time when mal-practices were rampant, and inefficiencies in public expenditure an accepted phenomenon. It is typical of many PMIS implementations in developing countries where information and communication technology applications are increasingly seen as powerful instruments to improve governance. Among other functions, Khajane is used to manage and control public expenditure. This case-study explores in particular, this function of Public Expenditure Management (PEM) of Khajane. PEM is known to have been a key function which is essential for a transparent and accountable government. Given the huge amount of monies being transacted, and the dependence of millions of beneficiaries on the timely and effective management of funds, the function of PEM assumes importance in the public sector.

PEM through an IFMIS, such as the Khajane has been regarded to have 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 such information systems following the success of Khajane and other e-government projects. Through its National E-Governance Plan, it has initiated a Mission Mode Project with the objective of computerization of treasuries in all of the 626 districts of the country. This move is believed to bring in improved efficiencies, reduce costs, eliminate redundancies and facilitate the adoption of modern PEM practices in the country (NeGP, 2009).

After being in operation for nearly a decade, a number of issues have surfaced with Khajane. Against this background, the Government of Karnataka state in India has decided to upgrade the existing Khajane to address the present inefficiencies in the system. Now a new system needs to be conceptualized which will not only addresses these issues, but will also achieve higher levels of efficiency, eventually leading to an even more efficient PMIS.

The main learning goal of this case study is to understand the nuances of non-technological factors such as power and accountability relationships in a decentralized context of a PMIS implementation. The case also points the reader to other factors such as end-user level coordination issues, as well as training and capacity building, and change management issues which govern the extent of the success of this PMIS.

2 Khajane in Kannada, which is the local language of the state of Karnataka, translates to Treasury
We hope that researchers, students and practitioners alike will gain useful insights by studying this case study. This study is particularly purposeful for government bureaucrats and IT vendors who are engaged with similar public management information systems implementations.

The main source of primary data was face-to-face open-ended interviews with 40 informants, all of whom are closely involved with different aspects of the implementation of Khajane. The interviews were conducted by the first author over a 9 month period (December 2009 to August 2010). All of the interviews were recorded and transcribed. During the study, we were given access to a number of official documents, reports and minutes of meetings relating to the history of Khajane and to the various issues confronting the project since its initiation. Our fieldwork also benefited from the feedback provided by the state’s senior bureaucrats on the initial reports we submitted to them. Other sources of data include formal meetings which were organized to facilitate the study in chosen districts of the state and official meetings of government agencies at the state level, where we got a chance to interact with senior bureaucrats and local officials entrusted with the implementation of the project. In developing this teaching case, we have drawn on relevant material from these sources and combined it with our analysis of the face-to-face interviews.

Teaching Case

Organizational Background

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 hierarchy\(^3\), urban local governments do not - their formation depends on a number of criteria. The 73\(^{rd}\) (GoI, 2005) and 74\(^{th}\) (GoI, 2006) Amendment to the constitution created these local governments. Funds, functions and functionaries have been devolved to these local governments, although the degree of decentralization differs from state to state, given the federal system of governance. Every year budget estimates are prepared by these local governments in coordination with state level planning and finance departments. A majority of these funds for programs and schemes are routed through the state’s fund to the funds of local governments who in turn book expenditure through implementation of various central, state and district sector schemes which are meant to benefit over a billion beneficiaries.

Table 1 provides a brief summary of the key stakeholder groups who are involved in the implementation and usage of Khajane. These stakeholder groups work and interact across different levels of governments.

<table>
<thead>
<tr>
<th>Stakeholder Group</th>
<th>Description</th>
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<tbody>
<tr>
<td>Directorate of Treasuries</td>
<td>This is one of the line departments of the Finance Ministry. This department’s final accountability lies with the Finance Department. This is the chief agency which manages and coordinates the operation of the treasury in the state through the Treasury Network Management Centre at Bangalore. There are 31 District level treasuries and 216 Sub-Treasuries. 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 case workers and front desk workers.</td>
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\(^3\) Geographical Hierarchy here refers to – Zilla/District, Taluk and Gram/Village. Gram is the last unit in the smallest unit in the hierarchy. A number of Gram/Villages constitute a Taluk, and similarly taluks constitute a Zilla, and finally a number of Zillas/District makes up the State. Zilla Panchayat (ZP), Taluk Panchayat (TP) and the Gram Panchayat (GP) are the local governments established at each of these levels. In this paper the reference to a local government and a local elected representative refers to any of this level unless specifically mentioned.
State Government and its Departments

State Government is involved Policy Making and implementation of programs. The state government has a number of ministries, each with a department called Line Department. In every Line Department in the state has a Nodal Officer who coordinates with the Treasury Office in Bangalore, District treasuries and the sub-treasuries. Also the Head of the Departments function as the Chief Controlling Officer for that department. At the district level there is a Controlling Officer who is the Chief Executive Officer/Chief Accounts Officer. Depending on the program, there are Drawing & Disbursing Officers and Implementing Officers in district and/or taluks. Line Departments here refer to Activity specific departments such as Agriculture, Water Resources, Finance, etc.

Local Government

Every local government has officers (usually the Chief accounts officer and Accounts Officer(s)) who coordinate with the treasuries and state level departments. Every local government also has a computer with Khajane software installed. But these terminals are not connected to the server – they are stand alone machines which are used to generate data which are then carried over manually using floppy-disks to the nearest treasury office. Every local government finally reports to the Rural Development and Panchayati Raj Department of the State Government.

Since the time decentralization came into effect, there is a common sentiment echoed by many state level bureaucrats - which is a prevailing fear of “losing-out” to local governments. More recently, this has led to, rolling back many of the functions of the local governments which were earlier devolved back to the state’s machinery. A Planning Department official noted:

“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...”

At the local government level, the administrative staffs see themselves as 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 Figure 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 sector schemes, more than 90% of the funds at the local government are in the state sector schemes.

Whilst the local elected representative’s “political accountability” (Dwivedi & Jabra, 1989) is still with the citizenry of the government, they are not empowered enough to demand accountability from the implementers of the schemes and programs. This is also complicated by the fact that the local citizenry, on a day to day basis, can hold only the local government accountable whereas they hardly have any interface with the elected representatives at the state level who are the ones who drive policy and decision making.

![Figure 1. Stakeholder Groups Accountability Relationships](image-url)
Khajane functions in this decentralized governance context. PEM in local governments was brought into effect only in 2007 through Khajane. During that time, no other state in the country had implemented PEM for local governments. PEM in the state of Karnataka is presently being managed by the Finance Department with the coordination of Directorate of Treasuries (DoT) which manages the PEM related transactions via Khajane. Other than handling PEM, The DoT also (1) handles receipts (2) deposits of various departments/local governments (3) pensions of retired government employees (4) Stamps (5) Strong-rooms for safe keeping of government assets (6) old-age social-security pensions. The DoT has its offices in nearly 218 locations spread across the state and head-quartered in Bangalore. It has been estimated that it processes nearly US$200 billion worth of transactions every year, with nearly 22,000 officers from all tiers of governments using its service.

Figure 2. Screenshot of Khajane home screen
Source: http://www.karnatakatreasury.gov.in

Khajane was the first of its kind PMIS implementation in the state and the country. Made operational in 2003, it significantly transformed the way DoT handled its operations. A government official noted:

“The system is “pukka”…it is there…tomorrow if someone asks me to change something…I can’t do anything about it…the system will do its job…it has been very successful”

Operating on Very Small Aperture Terminal (VSAT) technology, each of the 216 treasury offices across the state is connected to the central server and satellite hub at the Treasury Network Management Centre in

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4 Pukka in colloquial Hindi means a state of being permanent and strong
Bangalore. The DoT is equipped with its own cadre of officers. The department interfaces with officers of various government departments across all tiers of governments through transactions via the Khajane.

Given the depth of transformation which Khajane brought about in the public sector activity in Karnataka, in 2006, it won the “Silver Icon” award at the ninth annual e-governance conference in India.

While these facts seem encouraging and are a testimony to Khajane’s success in meeting the said intentions, the state of affairs prior to the implementation of Khajane was one marked by inefficiency and corrupt practices.

**Public Expenditure Management prior to Khajane**

PEM prior to the implementation of the Khajane has largely been described as ineffective and prone to malpractices. As one study 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” (DoT, 2007). As a local government Executive Officer recollected about the older system:

*It used to be far worse... the practice of disbursement of funds at district level was chaotic. Allocations were made on first come-first served basis. Added to this there was no accountability...you never knew for what purpose they were being used for...you could not get hold of them once the disbursement had happened.*

In a bid to curb these deficiencies, several measures were taken to correct the system – mainly through systematic business process re-engineering. This began with the computerization of treasury operations in the year 1987. Here, 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). The next step was setting up a separate Treasury Computer Centre in 1989, where again annually compiled accounts of the SHT were sent to the AG’s office. In 1990 first attempts at computerization were made at the SHT, and by 1991-92 all district treasuries came under the ambit of the computerized system.

Though there were significant computerization exercises in the treasury, owing to the increase in volume of transactions and the practice of manual procedures, the system was riddled with flaws. At this point, during the late 90s, the system was clocking an average annual transaction of around $90 Billion (both receipts and payments) (DoT, 2007).

**Initiation of Khajane**

From plain computerization of accounts, the department moved towards an era of online transactions only in the year 1999 when the idea of Khajane was born. The initiation of Khajane was a need based one. Despite significant computerization exercises in the DoT, issues of malpractices and inefficiencies prevailed. One of the main reasons for this was the manifold increase in volume of transactions. Also owing to the manual nature of work, the understaffed DoT found it difficult to deliver.

A committee headed by the Secretary, Finance Department was formed to undertake a comprehensive study of the system. The study was aided by a panel of institutions regarded as pioneers in their respective domains. This included: the Indian Institute of Management, the Indian Institute of Science, 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 procedures. The result of this was a *Procedure Manual for Computerization of Treasuries* which was brought out in 1999 (see Figure 3). This document detailed all treasury related operations and procedures. This would eventually serve as a starting point for developing the information system.
Phases of Khajane Implementation

Phase 1: Vendor Selection – Late 1999

In early 1999, the process of developing information systems was kick started. Vendors who met certain preset criteria were allowed to participate in the process of bidding for the Khajane project. The pre-bid criteria for vendors ensured that only capable bidders participated in the process. This bidding process was managed by the E-Governance department of the State. Computer Maintenance Company Ltd. (which is now a subsidiary of the Indian software services IT giant, Tata Consulting Services) emerged as the successful bidder to provide both hardware and application software solutions. CMC was also given the responsibility of initial training of staff and the maintenance of the software and hardware facilities. For providing the connectivity through Wide Area Network and VSAT (Very Small Aperture Terminal), STPI emerged as the successful bidder.

An official of Directorate of Treasuries remarked on the issue of having minimum number of vendors for the project—

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

The department officials believed that having minimum number of vendors would ensure a greater degree of control.
Phase 2: Khajane Implementation and Roll-out – Early 2000 to 2003

In this phase, detailed system requirements and design documents were developed. The procedure manual for computerization of treasuries conceived earlier served as a guiding document. 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. Also, there was a requirement on part of the government that the information system adhered to the laws of the state. A senior official of the DoT commented:

*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.*

Rules and regulations prescribed by the state government had to be mandatorily followed for every government transaction and *Khajane* was no exception. This majorly guided the application design. Few procedures were automated, but many of them remained unchanged.

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 department staff was used to refine the application.

Following the completion of the testing phase, the project moved towards complete roll-out. A Treasury Network Management Centre (TNMC) was setup which hosted the central server and database. Simultaneously, district and sub-district level treasuries were equipped with necessary infrastructure and were connected to the TNMC via Wide Area Network (WAN). A training of trainers followed by intensive training for nearly 2000 officials was carried out for all cadres of staff including data entry, systems administration, and network management by CMC. A user manual was developed in the local language of Kannada to assist the staff in day to day operations.

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. To facilitate this transition extensive training programs were conducted for staff at all levels. A department staff member recalled the effect of information systems on the employees:

*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 project became operational in the year 2003. However, PEM in local governments continued to be done manually. Delays in availing funds and bill clearance were still common place.

Phase 3: Extending Public Expenditure Management to Local Governments - Mid 2007

It was in 2007 that public expenditure management through *Khajane* was implemented for local governments as well – an accomplishment which was the first of its kind in the state and in the country. This was also the first instance when local governments interfaced with the *Khajane* system. To facilitate this process, officials from the DoT trained the local level Drawing & Disbursing Officers (DDO) and Controlling Officers (CO) of various line departments (Such as Health and Education) on the functional aspects of the system.

Even though PEM was implemented at the District and sub-district levels, malpractices and inefficiencies continue to persist. A local government official commented on the state of affairs:

*Look, you just saw what happened. The clerk from that department is asking me to clear this bill for the purchase of an SUV costing INR 18,00,000...I won't do it. He had tried to get it cleared directly at the treasury without my knowledge...but I have put systems in place to check such malpractices...every clearance has to go through me, and I have instructed the treasury department to not pass any bills*  

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5 INR refers to Indian National Rupee. Approximately, US$1 = INR 45
without my consent…but this depends on the officer…there is no budget control at all at this level of government…even now funds are allocated on first-come-first-served basis

The common grouse among the local government representatives is that they are not consulted by the state government on issues which affect them. In an interview for a film on decentralization, a local elected representative noted:

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 implications at the local level?

The conceptualization and the management of roll-out of Khajane were primarily driven by state government bureaucrats. Local government officials or elected representatives were not a part of this process. It was only when the system was extended to the local government that they began to experience it for the first time. Both treasury department and local government staff pointed out issues in the present schemes of things. An official at a local government said of the same issue:

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.

To overcome limitations of Khajane, the stakeholders involved in PEM at the local level had to forge informal alliances. But, these alliances depended a lot on the initiative of the local officials. 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.

The Khajane software is also designed in such a way that the local governments do not have any kind of access to their own data. The local government offices are not connected to the central server and this brings about many issues and constraints which have been partly expressed by the local government staff.

Officials at the State level also noted the issue of certain deep-rooted psyches at the local level which hampers efficiency. Fund release orders are usually sent via snail mail to the concerned departments whenever a release is due. Only on receipt of this mail, the local government office approaches the local treasury office seeking for a fund transfer. An official from the state government noted:

Sometimes there are delays in receiving the hard-copy of the GO [Government Order]… but we also upload a soft-copy of the same order on our website… they never download and use it… they always end up waiting for the hard-copy to arrive via mail!

Also, 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. The view of the officials in the treasury department is that the Khajane, as a system, is perfect. They attribute the current issues to that of human resources or vendor related. A treasury officer replied to reports which pointed out deficiencies of Khajane:

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

While that is the view of the department at the State level, the story at the local level as narrated by a sub-district treasury office paints a different picture:

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.

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6 Documentary Film on Governance in Municipalities (http://www.youtube.com/CBPSMedia)
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 of the DoT. The officials at the local level do not have sufficient powers to rectify the situation locally. For instance, 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.

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...

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.

A key issue that also affects PEM at the local level is training and capacity building of local staff. As of now, there is no designated training schedule for staff working on the Khajane. A senior official at the state level 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"[ on grounds of the employee been incapacitated to carry out his/her functions, and a relative of the employee takes their place]...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...

While many issues concerning implementation of Khajane at the local level have been pointed out and acknowledged by stakeholders, there is a prevailing sense of optimism among the department staff, especially at the state level about what the future holds for Khajane.

Phase 4: Khajane 2 – Late 2009 to Present

With a view to overcoming the current gaps, and improving governance processes, the idea of Khajane-2 was put forth and has since gained considerable support by the stakeholder community. Khajane-2 aims to make the next leap towards a transparent and accountable system by moving to a completely paper-less transaction system.

Stakeholders have acknowledged that many of the issues, which have been mentioned in the case, especially those that were affecting the process of PEM at the local government level, will be addressed in Khajane-2. During a recent high power committee meeting, a senior bureaucrat from the E-Governance Department noted:

Khajane 2 will go a long way in fixing the current inefficiencies. The issues of budget control at the sub-district level and inaccuracies of the system which you have brought out will be dealt with...

Currently, a leading software services vendor is in the process of preparing the technical bid (Request for Proposal), which will be called for in mid 2011. The design and development of Khajane 2 will be initiated in late 2011 – the plan is to have 4 pilot districts where Khajane 2 will be pilot tested. The estimated cost of the project is said to be around $45 million.

The press reportage surrounding Khajane-2 indicates that the project has already created a buzz and generated a huge amount of interest. Nearly fourteen vendor companies are said to have already responded to the Expression of Interest floated by the Government of Karnataka last year (Business Standard, 2010).
Discussion

The case brings to light some of the key factors, which have had considerable impact on the success of Khajane implementation. The emergent issues largely touch upon themes of structural issues such as power asymmetries and accountability relationships.

What follows is a discussion of some of the key points that can be used to stimulate classroom discussion.

**Stakeholder Consultations: Accountability Relationships and Power Asymmetries**

Most of the interactions, which took place prior to the project roll-out, were among the stakeholder groups at the state level. Local level stakeholders were not consulted during project conceptualization. Only the DoT staff at the local was involved in testing the information system during the initial stages.

When the information system was extended to Local governments, again stakeholders at that level were not consulted. The project planning and implementation was mostly top-down. For information systems, which have end-users spread across different levels of hierarchies, the interactions across which are governed by complex accountability and power relationships, the process and nature of stakeholder consultation during the time of project conceptualization may have considerable impact on project success or failure. In this regard, the following points may be explored and deliberated upon:

1. Making the process of decision making and consultation more of a participatory process
2. Implementation of the decentralization amendments to the full extent: to enable local governments to function as true governments
3. Empowering local level DoT administrative and operation units to give more power to solve local issues locally

The trade-offs associated with addressing power asymmetries either through structural changes, or incorporating the same in project design, is worth exploring.

**Training and Capacity Building**

The current practice for training and capacity building is largely ad-hoc. There is no structured training program for officials and other end-users of the system. Predominantly, new entrants undergo on the job training, with very occasional department managed trainings. This state of affairs is often blamed on the lack of capacity in the department to take on training activities.

Khajane being an information system, and given the fact that the end-users do not have adequate training on dealing with new technology such as computers, managing change from a completely manual system to something more automated was a clear and present challenge. Some officers reckon that it continues to remain a challenge given the varied background of the staff that uses the system. Given this background, it would be interesting to see how the question of capacity building can be tackled – in an environment where, there are frequent transfer of officials, recruitment of personnel without any prior background, and lack of institutional capacity to train its own personnel.

**Change Management**

Another interesting challenge the case has thrown up is, how a system can deal with change, such as the one brought about by Khajane: one from a completely manual system to a certain degree of automation. In addition to this, the next cycle of change which Khajane-2 seeks to bring about, is by moving to a completely paperless transaction system.

Indian bureaucratic system has a strictly defined, bureaucratic and often cumbersome process of decision making. There is always of trail of “files” (a physical record), which records the development of the
decision making process. Moving to a completely paperless transaction system has the potential to discomfort long-held psyches. Like it was pointed out earlier in the case, there is a certain fixation in dealing with hard-copies and resistance to change will be a potentially sensitive issue to deal with. The technology therefore ideally needs to find both social and political acceptability. In fact, prior to rolling out of Khajane, the departments did face political resistance.

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