Case Studies on e-Governance in India

Khajane – Using Technology for Fiscal Discipline

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About the Initiative

This publication is a part of the Capacity Building initiative under the National e-Governance Plan (NeGP) by NeGD with an aim to draw out learnings from various projects implemented in various States/ UTs and sharing this knowledge, in the form of case studies, with the decision makers and implementers to benefit them, by way of knowledge creation and skill building, from these experiences during planning and implementation of various projects under NeGP.

Conceptualised and overseen by the National e-Governance Division (NeGD) of Media lab Asia/DeitY these case studies are submitted by e-Governance Practitioners from Government and Industry/Research Institutions. The cases submitted by the authors are vetted by experts from outside and within the Government for learning and reference value, relevance to future project implementers, planners and to those involved in e-governance capacity Building programs before they are recommended for publication. National Institute for Smart Government (NISG), working on behalf of this NeGD provided program management support and interacted with the authors and subject matter experts in bringing out these published case studies. It is hoped that these case studies drawn from successful and failed e-Governance projects would help practitioners to understand the real-time issues involved, typical dilemmas faced by e-Governance project implementers, and possible solutions to resolve them.

Acknowledgment

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The case studies are meant for use as a background and quick reference on the topic(s) by e-Governance practitioners, and should not be treated as a guideline and/or instructions for undertaking the activities covered under any e-Governance project/s. It may also be used in a classroom for discussion by the participants undergoing e-Governance related training programs. The document by no means has any commercial intention and is solely developed for the purpose of knowledge sharing.

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Abstract

e-Governance projects across the country face various challenges, starting from lack of planning to lack of proper budgeting to lack of change management & capacity building. Government Strategists across the country have been working to overcome such institutional challenges and rollout successful initiatives. There are cases where such challenges have been surmounted with considerable success. ‘KHAJANE’ is one such major initiative, which in spite of similar hurdles achieved significant success by eliminating all systematic deficiencies found in a manual system. It is today a comprehensive Treasury management system with an approach to saving over drawal of public money, keeping in check fraudulent payments, providing timely MIS reports to the decision makers and also being endowed with many innovative features of financial management.

There are 216 treasuries in Karnataka, the sizes span from large to one-man treasuries, spread across the length and breadth of the State, catering to;

- 23000 Drawing and Disbursing officers
- 3.5 lakh pensioners
- 40 lakh Social security pensioners
- More than 1000 Deposit account operators
- Salary payments for more than 8 lakh state government employees and many Grant-in-aid institutions.
- More than 95 Lakh remitters.

Khajane is an IT system which acts as a lifeline connecting these essential elements of the state financial system. Khajane is primarily a G2G segment e-governance project having a limited G2C interaction; it is so because Treasury Department functions basically as a banker and an accountant for states finances.

Decision to develop Khajane was taken in the late 1990s. The basic premise to computerize the treasury was to have mandatory control over treasury processes and to provide a cleaner, healthier, financially responsible system to the government. Although computerization was considered essential for efficient handling of such a huge financial structure, yet in the absence of any comparative case study it was difficult to hypothesize the possible issues to be addressed during such complex rollouts.

The department was not sure about the type of risks which lie ahead & how such risks would get addressed? Management of Change and the type of capabilities which were required was unknown. Clarity was required about the proportion of such capabilities which had to be developed in-house and the proportion which had to be procured.
Due to lack of any benchmarks it was difficult to perform any cost-benefit analysis, which posed serious challenge during budget planning for this initiative. Without any previous experience the chances of cost-overruns were very high, which could have given detractors a chance to oppose such an initiative.

This case study is an attempt to present mechanism adopted to overcome many such challenges, which the department faced. During the course of this case study we have pointed areas where special efforts were required and have attempted to showcase the strategy adopted to overcome some key challenges.

**Note to Practitioners**

People reading this case may take note of the benefits derived through implementation of the following practices –

- Increasing the competency levels of the treasury staff, to handle computers and perform the required functions on an e-platform.
- Enabling concerned Departmental officers to plan and make budgetary releases through the Khajane system through extensive hand holding by trained treasury department officials.
- Utilization of the system to provide MIS reports of financial importance to enable decision making at the policy and functional level by the Government.
- Ensuring smooth transition from a Manual environment to a computerized working environment for the treasury officials.
- Due diligence exercised during the project rollout ensuring its successful implementation in a record time.
- Identification of Key Performance Indicators and the basis of their measurement in order to evaluate project success.

This case study is an attempt to demonstrate the use of above practices in e-Governance initiative. The key is to involve people in implementing change by making them part of the change and making project success measurable in terms of key benefits derived by the stake holders. If these two factors are adequately addressed, then challenges faced in implementing a project can be controlled.

At the end of this case study, readers will have better understanding of the following points:

1. Types of challenges which are faced while initiating Greenfield e-Governance projects
2. Methods which can be adopted to evaluate success of e-Governance projects
3. Evolving sophistication within e-Governance projects resulting from better service levels and increased stakeholder expectations

Background

Treasuries in the state are responsible for conducting the transactions of Government money (both receipts and payments) and render proper basic accounts of these financial transactions to the Accountant General, who is the chief accountant for the Government of Karnataka. Government’s role, over a period of time since Independence, has grown significantly in terms of its welfare measures and developmental activities, public expenditure has therefore increased manifold, consequently the volume of transactions at treasuries have increased almost exponentially. This increased demand on treasuries led to delay in submission of accounts, inadequate scrutiny, and negligence of validations and procedures which in turn led to increase in time and management deficiencies.

To analyze the deficiencies systematically within treasuries, the Government of Karnataka constituted a committee in August 1997. The committee was headed by the Secretary to Government (Resources), Finance Department and included members from the department of Treasuries and other key officers of Finance Department. This committee went into the various provisions of Karnataka Finance Code and Karnataka Treasury Code, identified systemic deficiencies in its current context and came up with solutions to overcome the deficiencies in the manual system.

The committee submitted the report in June 1998. Based on the recommendations of the committee, Government issued various circulars and orders as corrective measures to plug in the loop-holes which were so identified. The committee in its study report pointed out various gaps in the financial management practices of the state; gaps were pointed out in release of funds, allotments to DDOs, and details regarding the releases not being made available to treasuries and controlling officers. Even if they were informed, they were not in time, which led to over drawls. Appropriate checks were not followed at treasuries to stop such drawls. Also reconciliation at various levels was not taking place on a regular basis and for cases where it was done it was a mere act of compliance rather than a corrective measure.

All these aspects were considered by the committee which suggested implementation of a Centralized Computer based system with a central database and application software which would enable online bill clearance by interlinking treasuries to the central server through a central HUB via VSAT.

The Initiative

The decision to move over to a computerized system was driven by necessity to overcome the problems of Manual system; the initiative was taken by the Government of Karnataka on the suggestion of the Department of Treasuries.
The manual system had become unsustainable, as it had grown into an object of conventional practice, with many redundant processes having crept into the system. It had created discretionary powers for Treasury officers during processing of bills, which resulted in inconsistent practices being used at different Treasuries. Validations were discriminatory; the processing time was erratic, accounts were replete with mistakes leading to rampant misclassifications and a system amenable to fraud and corrupt practices. The entire Treasury system had 27 types of bill forms used for drawl of monies with 30,000 Drawing officers using them on a regular basis. It had 10,000 combinations of head of accounts and 300 object codes. The end result was a huge duplication of work. While accounting was cumbersome and reporting was delayed, monitoring and auditing was a tedious affair.

The committee under the leadership of Secretary (Resources) undertook a detailed study of the deficiencies within the system and checked it against the best practices followed in other places. The committee also studied the patterns of frauds and misappropriations faced by treasuries during its operations.

- The first step taken by committee was to define a goal. The goal was to develop an effective budget control and financial reporting system. The next step was to bring out a manual that contained all the procedures and business rules of the Department which would give a roadmap for the future. A set of Standard procedures were finalized and process reengineering was achieved to a great extent. The concept of budget control through an IT system was put in place, a Government order was issued defining the procedure to be followed by all departments in this regard. Roles and responsibilities of Chief controlling officer, Controlling officer and DDO’s were defined within the budget control process.

- The committee also identified some futuristic changes within the functioning of the Department. Concepts of FIFO (First-In First-Out) and IVRS (Interactive Voice Response System) was incorporated within the new system. These changes were aimed at increasing not only the efficiency and transparency within the departmental functioning, but were also aimed at bringing about an all-round accountability among various departments interacting with Treasuries.

- Officials from agencies external to the state Government were also drafted in to the committee. The members included officials of STPI (strategic partner), professors of Indian Institute of Management Bangalore (IIMB) and Indian Institute of Science, Bangalore (IISc). These members played a pivotal role in evaluating various available technologies. They helped identify the technical model which was to be followed for the proposed technical implementation.

- A thorough business process reengineering was undertaken; the number of Drawing and Disbursing officers were rationalized from 30,000 to 21,000. The head of
accounts were reduced to about 3432 budget lines from a staggering number of 5000 and object codes to 174 from 500.

- In December 1999 tenders were floated to shortlist a technical partner with stringent standards and the emphasis was clearly laid on quality. Bidding was restricted to those vendors who were already empanelled with the Department of IT as ‘Total Solutions’ providers. A two cover system was followed, in the first round of evaluation; some of the firms were eliminated on the basis of capability and quality parameters.

- After completion of the bid evaluation process, M/S CMC Ltd was chosen as the systems provider and STPI as the Network provider. Once the formalities of signing of the agreement with the systems provider and Network Provider were completed, the Software Requirement Specification (SRS) documentation was initiated in December 2001. The function of the department was broken in to 7 different modules. A departmental team comprising of experienced resources having strong functional understanding of each of the modules were attached as domain experts to SRS developer’s team from CMC.

- The department maintained close interaction with the teams of system provider, both during requirements gathering as well as during the development of the software. Major part of the development activity took place within the premises of the Department. The proximity helped in saving time required in acquiring command over the domain by the team of developers. It also helped in following of agile methodology of development, with constant testing and review of software by department officials. A pilot run was made in 5 different sites with a conscious effort to cover all varieties of transactions across different geographic locations. After 6 month of pilot a full phased rollout was initiated this was completed in a period of 5 months. Extended pilot phase was used to learn and improve the application software. Learning from this phase was also used to educate and train treasury employees about the software and its usage. The rollout was followed by sequential & systematic initiation of extended features.

<table>
<thead>
<tr>
<th>Milestones</th>
<th>Start Date</th>
<th>End Date</th>
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<tbody>
<tr>
<td>TRIPARTITE AGREEMENT SIGNED</td>
<td>JAN ‘01</td>
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<tr>
<td>VERSION 1 OF SOFTWARE</td>
<td>NOV ‘01</td>
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<tr>
<td>PILOT RUN 5 SITES</td>
<td>DEC ‘01</td>
<td>TO MAY ‘02</td>
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<tr>
<td>VERSION 2 OF S/W</td>
<td>OCT ‘02</td>
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There were in total 215 treasuries in the state at that time. This included 31 District treasuries and 184 Sub-treasuries (185 now). By November 2002 all the 215 treasuries had switched over to online bill processing within the new computerized system.

**Purpose & Priorities**

The purpose of the implementation of this project was to eliminate the systemic deficiencies in the manual system in a planned manner. The table below shows the deficiencies within the system and their causes, identified through root cause analysis –

<table>
<thead>
<tr>
<th>Deficiencies</th>
<th>Cause</th>
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<tbody>
<tr>
<td>1) Financial losses to the exchequer.</td>
<td>1. Lack of budgetary control over expenditure at various levels of administration.</td>
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<tr>
<td></td>
<td>2. Difficulty in fixing accountability.</td>
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<tr>
<td>2) Inability to identify fraudulent claims on the treasury</td>
<td>3. No centralized information repository which can be used to validate whether the claim is genuine.</td>
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<tr>
<td></td>
<td>4. No institutional mechanisms either within processes or through technology to identify such claims.</td>
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<tr>
<td>3) Inability to validate different forms of claims presented at the treasury scientifically and uniformly.</td>
<td>5. Methodology followed for validating claims, were at the discretion of individual officers which made the entire process subjective.</td>
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<td></td>
<td>6. Lack of control and verifiability over the individuals performing these functions.</td>
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</tbody>
</table>
4) **Inability to ensure correct classification of head of accounts to a particular scheme while accounting.**

7. Lack of knowledge of correct head of account among the treasury staff

8. Lack of time while accounting, due to duplicity in work for maintaining multiple schedules and accounting reports.

5) **Difficult and cumbersome process of reconciliation mechanism.**

9. Lack of proper reconciliation mechanism

10. Lack of proper reporting facility.

6) **Inability to submit monthly accounts and process bill claims in time**

11. Manually writing multiple schedules, recording every transaction into multiple registers being cumbersome and time consuming.

12. No scope for controlling processing time, discretionary powers to the local treasury officials.

While the purpose of the initiative was to address all these deficiencies, the priorities were set to address the causes resulting in these deficiencies. The objective was to perform the following series of activities; the activities are listed as per the priorities set –

**Priority I** – Networking of all the Treasuries with a central database and on-line bill processing facility.

**Priority II** – Elimination of systemic deficiencies through process improvement and improving basic functioning of treasuries.

**Priority III** – Capability for Budget monitoring and Ways & Means support through the application. Ways & Means support would provide a facility for clearance of bills of amounts more than a threshold limit only upon confirmation from the Finance department and after ascertaining the state’s Ways and Means position at that point of time.

**Priority IV** – System based Validations with clear transparency in treasury transactions brought in through regular & rigorous reporting.

**Priority V** – Improving service delivery, with timely rendering of monthly accounts and provisioning of a comprehensive financial MIS system.

**Khajane Architecture**

The Khajane IT system was built around a distributed architecture with each Treasury having own independent IT setup. Each center was equipped with a server which hosted the application and the database in the same machine. A LAN was used to connect all clients with the server. Each client machine hosted client-side application software which would communicate with the server through the LAN.
Ancillary hardware equipment included UPS and printers. Two types of printers mainly LMP (Line Matrix Printers) and DMP (Dot Matrix Printers) were used. Treasuries were allocated hardware based upon the work load they were supposed to handle.

**Project Governance Structure**

The project was named KHAJANE and involved computerization of all treasuries using a decentralized model, where in each of the 215 treasuries had their own servers and separate databases. This model was adopted to address the existing challenges of providing quality bandwidth to remotest corners of the state. The core of this computerization process was application software which was developed in accordance with the new Procedural Manual drafted for detailing all the activities of the treasuries. This manual defined detail of bills, claims, validations and accounting procedures and was brought out in consultation with the Finance Department, Other State Government Departments and the Accountant General.

For the smooth implementation of the project, two committees were constituted to oversee the implementation work;

1) Steering Committee

2) Implementation Committee.

The Steering Committee consisted of representatives from Finance Department, Treasury Department, IT Department, Indian Institute of Management – Bangalore, Indian Institute of Science – Bangalore, Network Provider (M/s Software Technology Parks of India) and the Service provider (M/s CMC). The Steering Committee decided on the technical issues and
the policy decisions at a higher level, helping to steer the Khajane project in the right direction.

The Implementation Committee consisted of representatives from Finance Department, Treasury Department, Other Field departments, the Accountant General, Network Provider (M/s Software Technology Parks of India) and Service provider (M/s CMC). This committee reviewed project implementation and provided guidance for resolution of issues concerning the project.

While Implementation Committee met more frequently and reviewed the progress rigorously, the steering committee met less frequently and was involved in strategic decision making. The role of implementation committee was more operational and any issues dealing with operational problems associated with Khajane was debated at this level. This committee had the right to escalate issues requiring policy level clarifications or decisions to steering committee. Issues having impact on project cost or requiring procedural changes were classified as Policy level issues and the steering committee had exclusive mandate to decide on such issues.

The committees periodically conducted review sessions with all key stakeholders. The project being a G2G applications, following main stakeholders were continuously consulted:

- Finance Department in the Government
- Other Departments in the Government
- The Accountant General
- The Agency Banks
- Social Security Pensioners
- Panchayat Raj Institutions and Urban local bodies
- Departmental Drawing officers.

**Change Management**

Department had experimented with technology even before Khajane was conceived. During pre-Khajane days computers were used at district treasuries by handful of operators for preparing monthly accounts by capturing post-transaction data. With Khajane the entire paradigm changed, it envisaged capturing of data during transaction thus moving from a data entry environment to an online workflow system.

Challenges for embarking on such a change was large and required strategic thinking and advanced planning. Department understood the existing realities such as low level of IT (Information Technology) awareness within Government staff, nearly nonexistent ICT infrastructure and resistance of department personnel to changes beyond cosmetic requirements.
Officers and other staff of the Department were engaged in project implementation from the beginning itself. Periodic sessions were conducted to motivate them by constantly enlightening them with the advantages of computerization. Departmental personnel were impressed upon about the advantages of computerization mainly that it will remove the drudgery of manual accounting, help ease the maintenance of multiple registers and enable preparation of reliable accounts in much lesser time.

The total staff strength of the department was about 2300, categorized under 4 cadres and 9 designations. The capacity building program focused on training & coaching of these staff members on Khajane and its implications on their day to day work schedule.

Training has been the main capacity building tool. Being fully aware of the need for capacity building, training was given primary importance.

- 1414 officials were given training in basics of computers.
- 600 of them were trained in all aspects of the application software.
- 75 selected members of the staff were provided higher level of training as system administrators.
- Two numbers of them were placed as Nodal officers in each District treasury who acted as trainers locally within the district and trained all the staff members in the districts.
- Training on identification and collection of Master data was provided to staff.
- Basic hardware and Electrical equipment related training was also provided.
- Periodical refresher courses were conducted and updated reference materials such as user-manuals were distributed in order to keep their knowledge updated.
- Training the staff, as and when new features were added in to the software application was made part of the curriculum.
- Quarterly meetings at the state level and monthly meetings at the District level were organized to keep staff updated and to know about the problems they were facing both in terms of the software application and functional-administration.
- Facility Management Engineers placed in all the districts were re-trained periodically.
- Departmental Officers were trained on budget monitoring procedures at Taluks, Districts and State levels.
- Hand books, Manuals, Circulars and Government Orders were issued regularly to keep the officials updated about any new features.
Apart from the above steps individual module wise user manuals were prepared and provided to the staff. Concise user manuals and manuals in local language were also made available.

**Process Standardization and Simplification**

A major exercise for standardization and simplification of the existing procedures was undertaken by the department. Many outdated procedures and practices were listed out and removed. Practices of maintaining parallel subsidiary account registers and the concept of Self Drawing Officers, who drew their own salaries and allowances from treasuries through separate bill forms were dispensed with by merging their salary and allowance drawl along with their establishment, thus reducing the number of drawing officers and also the number of bills which were getting generated because of such individual bills being presented. Similarly various types of existing bill formats and Challan formats, numbering about 40, were reviewed and standardized. This resulted in reduction of the number of bill forms to 10 and Challan forms to 5. Some key changes which were implemented are –

1. Number of Drawing & Disbursing Officers (DDOs) was moderately reduced.
2. Separate salary and TA bills for individual gazetted officers were dispensed with.
3. Many redundant validations were removed and standards were set for each bill type and claim type, which were subsequently included in Khajane master.
4. Abstract contingency bill settlement process was changed from mere certification by the DDO to a system controlled feature, thereby avoiding false claims.

As a major step, individual bill drawl system was eliminated. Under such a system each Gazette Officer used to prepare a bill on his own and present it to the treasury for each of his claim. The new system implemented ensured that only the drawing & disbursing officer would prepare and present a bill for the entire establishment reporting to him. This also ensured that all officers under a DDO would draw salary and allowances on a single consolidated bill.

**Documentation**

Documentation was an important activity within Khajane rollout. Being a Greenfield initiative it was imperative to record all details of the project through proper documentation. Following Documents were prepared at various stages of the Project:

1) Procedure Manual
2) System Requirement Specification
3) System Design Document
4) Project Defined Software Process
5) Project's Quantitative Management Plan
6) Configuration Management
7) Acceptance Test Plan
8) User Manuals
9) Network Risk Management Plan
10) Risk Management Plan
11) Budget Monitoring Handbook
12) Data Archival Manual

**Best Practices**

As the level of computerization in treasuries across India was limited at that point of time as such the best practice study did not lead to any ready referable benchmarks. In the absence of such benchmarks the department chose some of the good practices prevalent in the manual system practiced in various States and adopted some of them to create new standards on its own. Study teams visited various states to study the best practices in existence.

Teams visited the states of Maharashtra, Andhra Pradesh and West Bengal before deciding upon the final design. Some of the strategically important features like standardized bill and Challan designs, automated bank reconciliation, elimination of Self drawing officers and budget monitoring were picked up from the best practices adopted in these states.

**Data Security**

Within the project the emphasis on effective crisis management and crisis preparedness has been very high. All the critical components of the project have one-to-one redundancy. The service level agreement envisages 99% up time for both Network and Systems. The Treasury Network Management Centre, Bangalore where the Central Server is situated has its data replicated to Disaster Recovery Centre situated in Dharwad District Treasury a Centre situated about 400 km. away from Bangalore. Periodical backup of Khajane data to Disaster Recovery Centre ensures that risk to the data is minimized.

Apart from this all District Treasuries and Sub-treasuries have a procedure for regular data backup on a daily basis at the end of the day as a matter of regulation. Risk Management Plan Manuals for both Network and Systems are available and mock drills of recovery are conducted periodically.

**The transformation**

- Khajane was designed not only to cater to the needs of the Department of Treasuries but also to the needs of all other state Government departments especially Finance
Department. While state Government departments got a facility to monitor their financial health regularly, Finance Department got a greater visibility over the state finances on a near real-time basis.

- It was designed to meet both the present requirements as well as support any needs that were likely to arise later. It became an integral part of the budget system reforms.

- Budget control became highly successful with all departments getting involved in its implementation. Right from training to its ultimate implementation and utilization, state Government departments played a very crucial role. Uploading of budgetary data, of each and every release, through the system, has provided for the highest value-add of the project to the main stakeholders. This has led the departments to control their budgetary estimates and avoid over drawl. It has also ensured that funds are used by the right office.

- As a management tool Khajane provides information required for decision making from the Drawing Officer’s level to the highest level. Though basically anchored in the government accounting system, it is designed to generate varieties of customized reports for internal and external use, apart from the regular accounting reports. This has enabled in-time decision at the highest level.

- Essence of the system lies in its capacity to accumulate, process, and provide information to all the parties concerned on a continuous basis most accurately and speedily. By automating procedures and internal controls, it has strengthened the financial controls and promoted accountability.

- The systemic changes enforced through this project have enhanced financial discipline and accountability at various levels. Digitized data and possibilities of various types of analyses has ushered in new vibrancy and has received very enthusiastic response from the concerned sections of the government where this information is the key for verifying policy direction and progress.

- The system design is flexible enough to provide user defined management information aggregated at any desired level of detail from within the database. This has resulted in promotion of knowledge sharing and use of such data for regular monitoring and reviewing of progress of various departments. This has resulted in improved quality of governance as closer monitoring is leading to better performance at the field level.
Transparency

- FIFO and IVRS (Interactive Voice Response) has brought in transparency for the DDOs, they are aware that the bills will be cleared on the basis of seniority and can avail through IVRS the status of their bills at the treasury as and when required.

- Speedy, timely and reliable information is provided to the Government thus enabling a proper decision support system to the Finance Department.

- The data in the form of various MIS reports are made available at Taluk, District and State levels thus enabling the Government to know the status of implementation of various plan schemes in the State.

- The system also helps to plan for identified savings, additionalities through supplementary estimates, make re-appropriations in the budget and review annual departmental progress in different periods of the financial year. This became possible because of various expenditure related reports which could be generated and provided to the various administrative departments, who could watch the progress and initiate steps for proper planning of their budgetary resources.

Challenges faced

The project faced almost similar kinds of challenges, which other e-Governance initiatives across the country face. To illustrate the problems faced, we will categorize them in three dimensions –

a. People –

   i. Resistance to change – There was strong resistance to change. Vested interests thought use of such technologies as transgression into their authority.

   ii. Lack of capability & skills – Within the department there was a dearth in the capabilities and skillsets of the workforce. Usually trained to do paper work and do accounts manually, to use computers as part of their work was a big challenge.

   iii. Generally disconnected workforce – Large numbers of officials were of higher age and had never studied or worked with technology, they felt they would be obsolete with entry of computers; they were prejudiced that computers were beyond their learning.

b. Process

   i. Complex business processes – The processes adopted to maintain multiple registers and seeking approval at various stages were essential to ensure accountability within a manual system. With advent of ICT tools the same became irrelevant, yet changing some statutory requirements was not easy and required approvals at various levels.
ii. Co-ordination between various departments – The requirement for co-ordination between various departments has been well emphasized in various sections of this document. To enable each department to be actively involved in the budget control process was a big challenge and bringing them all on board for its successful implementation required an additional effort.

c. Technology

i. Unavailability of similar solutions – When Khajane was planned, financial sector in India was discreetly foraying into IT, and State Governments were planning their own experiments, the successes of which were yet to be evaluated. Khajane did not have any case study to refer. The learning requirement was enormous but real examples were not there.

ii. Challenges with existing technologies – Network proliferation within Government had not been achieved by late 1990s. Telecom sector was still at its nascent stage with high cost for getting quality bandwidth. Connectivity between central hub and all treasuries, achieved first through V-SAT network and currently on KSWAN, was the biggest challenge. Apart from connectivity, availability of uninterrupted bandwidth supply across the network was a key challenge as it was essential for efficient monitoring & enablement of budget control.

The department addressed all these challenges systematically. The policy of passive coercion helped it to overcome people-related challenges. The policy involved continual training of end users along with strong briefing by higher management. Messages were communicated to each official down the line that there would be no alternative to the new Technology driven computerized treasury system. Officials were clearly communicated that if they failed to board on to this system now, then they would be left behind forever.

Process changes were implemented by identifying process re-engineering requirements, adopting the re-engineered processes and subsequently communicating the same to all officials through regular training.

Technical challenges were addressed by following an agile methodology. Application changes were developed incrementally to address new requirements. Hardware was upgraded periodically to facilitate demands of the ever growing data. New servers were added to handle reporting and provide backup facilities.

Though most challenges could be surmounted using focused application of efforts, yet in some cases it became nearly impossible to address certain challenges especially under the prevailing circumstances. One such challenge was reducing the cost of maintenance by proper version management and centralized command & control. In order to maintain proper version management and centralized control a robust network was required. Such a network was expected to provide a dependable direct link containing good quality
bandwidth between a central hub and Treasury locations. Existing circumstances were not congenial for establishing such links. The telecom companies either did not have direct reach to all remotest locations of the state where Treasuries were located or were willing to provide link at high cost and flexible service levels. Only choice left with department was to use VSAT, which provided bandwidth sufficient enough to ensure only data transfer and not HTML content\(^1\).

The failure to create such a WAN system created significant challenges in version control. Each Treasury started having own version of application software which made maintenance very costly. One of the chief reasons for planning Khajane II has been to move to a centralized command and control system.

**Benefits**

Though there are many quantifiable benefits such as faster closure of monthly accounts, greater fiscal discipline and stronger oversight, which have been accrued, the value of benefits that cannot be quantified is tremendously high. There has been no over drawls, since the inception of budgetary control through Khajane, the money saved is a benefit accrued to the Government and the public at large.

Timely Payment of Pensions through electronic money orders and direct bank transfers, resulting in satisfied citizens is another key achievement. Social security Pensioners who used to receive their pensions once in two or three months today invariably gets it in the first week of the month.

Decision support system through various MIS reports to all the departments, help plan the resources adequately and timely.

Some other key benefits which were derived are:

1. Rendering of classified accounts by Treasuries has rendered the work done by more than 300 officials in the Accountant General’s office redundant. These resources have now been deployed for various other functions by Accountant General's Office. On the same lines the treasury department has surrendered 318 vacant posts.

2. Through optimal use of online information on cash inflow and out flow, the Government has been able to monitor its cash management better. The proof is that the Government of Karnataka has not resorted to overdraft in last few years and has been able to manage its ways and means position better.

3. Quite evidently closer monitoring of any project is bound to yield better results. The time gap of 45-60 days for compilation of accounts came down to 2-3 days after implementation of Khajane. Information was provided to the departments immediately.

\(^1\) Web content will be transmitted if centrally deployed application software is deployed centrally and is delivered using Internet Browsers.
upon completion of a month. This helped in empowering departments to take ‘Better 
& Faster Decision’.

4. Due to system controlled entry of data, there is a drastic reduction in misclassification 
this has enabled faster reconciliation of accounts with the use of lesser resources.

5. Khajane has brought in a new regime of budget control for drawing funds from the 
treasuries, hence bringing in the necessary check of having an advanced allocation for 
each DDO to enable him/her to draw from treasury. Any drawl will have legal sanction 
from the government and a corresponding release from the controlling officer; this has 
brught in the necessary check and control against fraudulent drawls.

_Success Measurement_

In order to identify success of the objectives set forth, an assessment of the impact of 
Khajane has been presented below.

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<td>1.</td>
<td>Reduction in Number of fraudulent cases</td>
<td>➢ System check, validations and Budget control has enabled a check on fraudulent claims on Treasuries, thus there is prevention of loss to the state exchequer to a great extent.</td>
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<td>2.</td>
<td>Letter of credit (LOC) system which existed in Public Works, Irrigation and forest departments were dispensed because of the success of Budget control system through Khajane.</td>
<td>➢ State can now monitor and control expenditure under those schemes for which LOC was being released, earlier this was not possible.</td>
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<td>3.</td>
<td>Social Security Pension payments to the beneficiaries reaching them every month before 15\textsuperscript{th} of the month.</td>
<td>➢ Beneficiaries have a dependable treasury system which provides for timely and definite disbursement of monthly pensions, through electronic money order and direct bank transfers.</td>
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| 4.   | The Department is able to handle the increase in number of transactions recorded in the treasuries. | ➢ Karnataka state budget has increased from approximately \text₹ 32,000 lakhs in early 2001-02 to more than \text₹ 100,000 lakhs in 2011-12. Such high growth of budget has resulted in increase in the volume of transactions, which increased from 1 crore to 2.2 crore in the same period. Khajane managed such a substantial increase while maintaining relatively similar service levels. 
➢ It also showcases the fact that the potential for which the system was built for has been realized. |
5. Dependency of various departments on the MIS reports from Khajane.

- All major departments depend on the monthly MIS reports provided through Khajane to monitor and control the progress of implementation of various departmental schemes.

**The Difference**

Khajane made huge difference in the way G2G transactions were performed. Given below is an assessment of the change in service levels pre and post implementation of Khajane –

1. Rendering of accounts:
   - **In manual system**: Average time period taken by various treasuries is from 6 days to 3 months
   - **In Computerized system**: 3 days to 1 month

2. Module wise volume of payments:
   - **In manual system**: Rs.35,000 lakhs
   - **In Computerized system**: Rs. 100,000 lakhs

3. Module wise volume of Receipts:
   - **In manual system**: Rs. 28,000 lakhs
   - **In Computerized system**: Rs. 80,000 lakhs

4. Pensions:
   - **In manual system**: 3.5 lakhs pensioners
   - **In Computerized system**: 8.0 lakhs

5. Social security pensioners:
   - **In manual system**: 15 lakhs
   - **In Computerized system**: 40 lakhs

**Highlights**

- **Recognition for Khajane’s contribution at various forums**: The World Bank on several occasions has appreciated the Project and the changes brought about by the system in bringing about financial discipline in the State and have been recommending other states to emulate the same. Different State Governments of the Country have shown desired interest in the Project to incorporate many salient features of the 'KHAJANE'.
  The project has won numerous awards, most prominent among them are –
  - i. Silver Icon at the 9th National conference on e-Governance (Feb-2002)
ii. Over all Runner up for the best e-governance project at CSI NIHILENT eGovernance awards 2005-06

b. The initiative brought-in great amount of changes in the way processes were being implemented. The initiative resulted in some sub-initiatives which had far reaching impact on the government and created a role model on how two departments can integrate to provide better services to citizens and bring in greater efficiency in citizen services delivery. Some key achievements of the initiatives are presented below –

- Speedy clearance of bills of suppliers & service providers.
- Hassle free salary disbursal to employees through ECS based credits to bank a/c.
- Payment of 40 lakhs social security pensions every month on time.
- Timely disbursal of service pensions.
- Online fund transfer facility.
- Facilities for easy reconciliation.
- Submission of monthly accounts with value addition of classification.
- Improved transparency with FIFO & IVRS

c. **Lessons learnt and enhancements in the extension phase** – The benefits gained from this initiative exemplified the necessity of having such systems in day to day governance related activities. Experience with technology showed that it can provide scope for drastic reduction in mundane manual work; it also creates scope for new requirements and expectations. It also necessitates the need for personnel to understand IT security and other changing IT requirements with change in time. The new lessons learnt during this project have helped for planning the next version of Khajane, the Khajane-II. It has underlined the importance of a single contract for managing end to end operations. It has emphasized integration of all stakeholders and centralization of infrastructure in order to address concerns of security & maintenance. A key aspect of Khajane II would be its exhaustive reporting system. This reporting system is an offshoot of the experience gained from Khajane. With advent of Khajane user expectations about getting information in multiple dimensions became more prolific. Khajane II draws from such experiences and builds up a next-gen system capable of addressing such expectations. Going forward these learning will help us in creation of a more robust and evolved system.

d. **Key Learning** – Process and technology re-engineering is easily replicable across any e-Governance projects across India. Some states have studied this project and have used the learning from Khajane in their local e-Governance implementations. Some key learning which Khajane implementation has for decision makers is related to Khajane’s emphasis on business process re-engineering. Without BPRs Khajane would have not
made such an impact. Before thinking about automation planners at Finance Department went through multiple churnings with main focus on procedural changes required to address the problems faced by them. Technology was just an enabler for implementing such procedural changes. Emphasis was on finding a solution for their problems and not on fitting the problems within available solutions. Another key learning was importance of having proper documentation and version control. Without creating a robust & exhaustive knowledge base it is not possible to sustain a project of any nature. Similarly in the maze of multiple deliverables and multiple changes performed over each of them it is easily possible to lose control over quality & relevance of deliverables. A proper version management policy should be drafted and retained before embarking on any e-Governance project.

Change Management is another key requirement and sufficient funds should be earmarked for handling it in a professional manner. Experts have to be assigned to study the nature of changes required and their impact. Based upon such a study a proper capacity building plan should be drafted and implemented meticulously. E-Governance is not only about automation but it is also about change and any failure to achieve either can create grave risks for the project.

References
2. Kubera – The Khajane Database.

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