Successful e-Governance Projects in Karnataka - A Case Study

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ABSTRACT
The Purpose of this paper is to give an insight into some successful e-governance projects in Karnataka. Karnataka has been very innovative in the use of ICT. Karnataka’s IT policy focuses on using e-governance as a tool and delivering a government services. That is more pro-active and responsive to its citizen. The state of Karnataka is among the very few states in India which as pioneered e-governance initiatives in all possible areas through its project such as Bhoomi, Therige, Khajane etc., for administrative services and also for other services such as education, health, environment, agriculture etc.,

KEYWORDS
ICT, BHoomi, RTC, BWSSB, NIC.

INTRODUCTION
E-governance has gained utmost importance in the world. E-governance means the use of information and communication technology in public administration, which enhances, access to information and delivery of government services, for the benefit of citizens, private organizations and government functionaries. One of the important measures for sustainable development in this shrinking world is governance relating to transparency, accountability, speed and accuracy. The solution to this confusion and failure is ‘e-governance’. It is applicable to all service sectors, governmental and non-governmental. The lack of structural design, effective communication and implementation of activities so often found in both corporate and government activities can be rectified through e-governance which facilitates the speedy retrieval of data in the filed of Banking, Education, Insurance, Health-Care, Resource Management and the like. The importance of e-governance in day-to-day life is in two fold. It facilitates interaction between the Government and Citizens and Government and Business. Good governance can be seen as an exercise of economic, political and administrative authorities to manage the affairs of a country at all levels.

The objectives of e-governance are as follows:
- It helps in bringing about changes in the mode of Administration.
- It helps in business process outsourcing
- It helps improving ability to brainstorm about e-business models and e-strategy in a rapidly evolving technology and environment.
- It helps in understanding any basic budgeting technique.
- It also acts as a tool for investigating any; collaborative research and in their professional development.

BHoomi DESCRIPTION
The objective of BHoomi (meaning land in Kannada), a project of the Revenue Department of the Government of Karnataka are:
- Facilitating easy maintenance and prompt updating of land records
- Making land records tamper proof
- Allowing farmers easy access to their records
- Collating the information to construct database regarding land revenue, cropping pattern, land use, etc.
- Utilizing the data for planning and for formulating development programmes.
- Enabling usage of this database by courts, banks, private organizations and companies, ISPs etc.

As land records are the basis for all land reforms and crucial to the socio-economic life of land owners particularly in rural areas, their maintenance and updating is an important aspect of public administration both from the economic and social standpoints.

The project has resulted in establishment and operation of a computerized land record kiosk (BHoomi centre) in each taluk in the state. Each kiosk is created to provide farmers with details they need regarding their land record. A farmer can access this information on providing either the name or an assigned plot number.

Kiosks are also equipped with touch screen monitors and simple navigation aids to allow farmers to access information themselves. A farmer can check the status of a mutation application on a touch screen, provided on a pilot basis, in twenty of the computerized kiosks. If the revenue inspector does not complete the mutation. Now, mutation requests are to be handled strictly on a first-come-first-served basis. These measures limit opportunities for collecting bribes.

The system of collecting crop data printed at the back of the RTC is also being computerized on an experimental basis. Greater accuracy in crop data would lead to a more equitable distribution of crop insurance claims.

The BHoomi project’s on-line delivery of land records in Karnataka demonstrates the benefits of making government records more open to empower citizens to challenge arbitrary action. It also illustrates how automation can be used to take
discretionary powers away from civil servants at operating levels.

The response from the end users has been overwhelming. Queues can often be seen outside BHOMI centers. There is a huge demand to extend the BHOMI services to the sub-taluk level. The benefits derived from the project include a reliable system that the government and citizens can easily use and instant information – at the touch of a finger, reducing dependency on middlemen. Also, the model is self-sustaining. It is estimated that between Rs.90 and Rs.100 million can be collected each year from charges for Record of Rights, Tenancy & Crop (RTC). Nearly 78.3% of all BHOMI users take an RTC whereas 17.2% apply for a modified RTC (involving mutation) and 4.5% collect a copy of the mutation order. The users of BHOMI collect these documents for a variety of reasons. The largest proportion of users (51%) collects the RTC s for applying for loan from a Bank. Nearly 14% use an RTC to verify the outcome of a mutation request. About 16% use the documents in courts or to verify details of adjoining property.

PRE-PROJECT SITUATION
In the past, under the manual system, 9,000 village accountants maintained land records, each serving a cluster of 3-4 villages. Farmers had to seek out the village accountant to get a copy of the record of rights, tenancy and crops (RTC) – a document needed for many tasks such as obtaining bank loans.

In the old system, the records acquisition process was manual, often with procedural delays, inefficiencies and lack of transparency. The time taken for providing a simple RTC for the current holding ranged from 3 to 30 days where as a request for change to the land records (documents and maps) could take up two years. The bribes ranged from Rs.100 to 10,000 for this service. Land records in the custody of villages accountants were not open for public scrutiny.

Farmers could obtain falsified crop records from village accountants to boost their insurance claims.

CHALLENGES
- Maintenance of equipment at 177 centers some in far-flung rural areas.
- Dealing with isolated instances of fraudulent certificates presented at Banks.
- Mitigating problems of farmers who have to travel long distance to reach a BHOMI kiosk.
- Lack of currency and poor quality of crops survey data.
- Problems of illiterate farmers in filling mutation forms.
- Creating awareness amongst rural population of all the changes that have taken place in processing RTCs and mutation.
- Resistance to change.

STRATEGY
- Mobilizing political will, commitment and funds.
- Forging partnerships with NIC and private data entry agencies.
- Digitization of legacy data through data entry software ‘BHOMI’.
- Withdrawing of manual records in a phased manner.
- Evolving guidelines for the new system and software development.
- Establishing and operating village information kiosks through facility managers.
- Selecting/Training district level officials and village accountants in Hardware, Software, Networking and uptime maintenance.
- Amending the Karnataka Land Revenue Act to provide for the storage of data on storage devices and use of BHOMI software.
- Planning and developing future applications.

RESULTS
- A printed copy of the RTC can be obtained online by providing the name of the owner or plot number at computerized land record kiosks in 177 taluk offices, for a fee of Rs.15. a second computer screen faces the clients to enable them to see the transaction being performed.
- BHOMI has reduced the discretionary powers of public officials by introducing provisions for recording a mutation request online. Farmers can now access the database and are empowered to follow up. After computerization, there is 85% jump in the number of mutation requests.
- Crop data on the back of the RTC is the only document that can be used to back on insurance claim.
- The benefit in terms of man-days saved is approximately 1.32 million man-days per annum, leading to savings of Rs.66 million per annum in wages. The weighted average value of bribe paid in the manual system was Rs.152.46 per person, while that in BHOMI was Rs.3.09. Even if we reduce the saving by the fee that they have to pay, of Rs.15, the net saving is Rs.134.37, and translates to a saving of over Rs.806 million annually.
- Independent evaluation studies have show that BHOMI has significantly reduced corruption and improved service delivery.

Future plans include:
- Uploading BHOMI database from all the 177 kiosks on a central database every evening using a VSAT network
- Opening a thousand kiosks statewide with public private partnership;
- In a pilot experiment, 20 tele-centres have been established in Mandya district by N-Logue using the corDECT technology developed by IIT Madras. These private kiosks can connect to the Mandya database through the N-Logue network; and view, print and distribute the land records;
• In another pilot, around 200 village accountants have been given Simputers for crop updation.

LESSONS LEARNT
• The devotion of 80% of the time of the department head (a 15 – hour day for ever 12 months ) for a tenure exceeding 6 years, has been a very important factor in stabilizing the system.
• Harnessing political support, delivering extensive training along with a participatory style was important in diminishing resistance.
• Project managers need to balance the potential benefits against the risk of implementation failure in deciding how much reform (re-engineering) to tackle at any one time. In BHoomi, significant benefits are delivered in issuing RTCs, but much of the old mutation process remains unaltered. There is no change in the role of the revenue inspector in passing the mutation order.
• The concern in Karnataka about raising the user fees Rs.15 from Rs.2 in the manual system is exaggerated, particularly when services have improved. The response of the farmers at taluk level has been overwhelming.
• BHoomi succeeded because its design is robust and it targeted a critical need for farmers and delivered significant benefits by re-engineering land record processes.
• Projects that are intended to benefit rural populations need to recognize the high level of effort that is needed to make rural population aware of the reforms that have been instituted.

REPLICABILITY
• As a killer application that can make a large number of privately owned rural Internet kiosks economically viable, BHoomi has shown the way to bridge the digital divide in poorer countries.
• The existing database can generate reports on land ownership on the basis of size, type of soil, crops, and demographic data. The government plans to use this information to develop programmes for poverty alleviation, bank loan processing and for solving legal disputes, besides providing a ready input for conducting further land reforms. BHoomi is applicable to other states in India.
• By the end of April 2004, the total use fee collected through issuance of RTCs was Rs.270 million. This amount not only covers the investments made in computerization but also leaves enough surplus for further development making BHoomi sustainable.
• The Government of India is making special efforts to replicate BHoomi in other states of India.

E-GOVERNANCE IN BANGALORE WATER SUPPLY & SEWERAGE BOARD – KARNATAKA
DESCRIPTION
Bangalore is rapidly growing city and its people are demanding improved quality of life through better services and able governance. The Bangalore Water Supply and Sewerage Board (BWSSB) is responsible for the supply of drinking water to the city and conveying, treating and disposing swage. BWSSB has been planning well in advance to meet the requirements for drinking water and disposal of sewage for the present and for the next 25 years. The functions of BWSSB related to water supply and sewage disposal include:
• Operations and maintenance of various pumping stations and sewage treatment plants functioning at far flung locations;
• Distribution of drinking water through its pipelines, maintenance/augmentation of the distribution pipeline network;
• Keeping accurate record of its assets including their location, dimensions, ageing details etc;
• Billing and revenue collection;
• Proper coordination among BWSSB’s Central Office, 5 Maintenance Divisional Offices and 17 Maintenance Subdivisions for the flow of information and control for carrying out its functions.
• BWSSB has pioneered the adoption of latest technologies and successfully leveraged Information Technology for the last five years and many major projects with significant IT content have been completed.

PRE-PROJECT SITUATION
All BWSSB were handled manually thus making them expensive in terms of cost and manpower.

STRATEGY
• Automated decision support system to plan future expansions of water supply and sewerage systems.
• Geographic Information Systems(GIS) of water supply pipelines and sewerage lines of the entire city, their maintenance and updating by an independent management system.
• Creating BWSSB web site.
• Computerizing revenue billing and collection.
• Meter reading with hand held computer and issuing bills at the spot.
• Paying water bill at unmanned ‘KIOSK’ working 24 x 7 hours.
• LAN – WAN for integrated messaging and collaboration.
• Computerization of accounts.
• Water Auditing.
**RESULTS**

- Automation with Supervisory Control And Data Acquisition (SCADA) and Telemetry in Cauvery Stage IV Phase I implemented.
- Two tertiary sewage treatment plants at Yelahanka and Nayundahalli, which are completely automated with SCADA systems commissioned.
- Geographic Information System (GIS) – 2 (southern & eastern with f18 service stations) of the 5 divisional offices are covered under the Computerised Mapping and GIS for the water supply distribution and waste water/storm water:
  - The consumers are getting and details of the water billing on request at present and this will be on the web. The Bangalore Water Supply and Sewerage Board has commissioned a 24 hour Automated Machine for bill payment in 4th Block, Jayanagar. The machine receives payment and generates receipt for cash, cheque and demand draft.
  - The consumers can pay the water bill at any time (24 x 7).
  - The details of Board and important public announcements are available on the web.
  - The details of water supply leaks, sewage blocks, time taken at attend the same in any area is put in GIS and if there is frequent repetition corrective measures can be taken to avoid the same.
  - All the Divisions and Sub-divisions are now connected to Cauvery Bhavan by leased lines (with ISDN lines as backup) facilitating transfer of data pertaining to revenue billing. If also facilitates messaging and collaboration resulting in speedier execution of work.
  - The Board has taken up water auditing by measuring water input and pressure into a area by using electronic meters, loggers, controlling leaks and water supply at minimum pressure to the entire area by Network Modeling in a Point zone.
  - The manpower for the more detailed information data and monitoring the system is reduced considerably.

**REPLICABILITY**

The models of GIS and automation are replicable in similar organizations entrusted with water supply and sewerage disposal functions. Such methods are the need of the hour particularly in big cities where citizens are demanding better municipal services.

**COMPUTERIZED SCHOOL TEACHERS’ TRANSFER SYSTEM – KARNATAKA**

**DESCRIPTION**

There are about 275,000 teachers working in government schools in Karnataka. Teachers selection is conducted at the district level. Over a period, many teachers have been posted away from their home district. Such teachers request a transfer to their home district almost every year until the request is granted.

The Department of Public Instruction in Karnataka has introduced a new method of effecting teachers transfers through computerized counseling. Every year the department receives 10,000-15,000 applications from teachers working in government schools requesting to be transferred to a place of their choice.

Acting upon the various complaints received from teachers, the government decided to streamline the entire teacher transfer activity. Based on guidelines provided by the Department of Public Instruction, the Education Unit of National Informatics Center (NIC), Bangalore developed an application, which was rolled out in all district within Karnataka.

Since all districts were equipped with computer systems, the investment and operational costs were minimal. The Education Unit of National Informatics Centre (NIC), developed the software system at the office of the Commissioner of Public Instruction (CPI). The services of the District Informatics Officers of the NIC and the computer trained personnel of the department were utilized for implementation.

Through computerized counseling, all the requests are now prioritized according to the reasons indicated in the request. Teachers are asked to select their place of posting from among the places available on the computer monitor. The system is transparent and eliminates bribery and corruption prevalent in the earlier manual system.

**PRE-PROJECT SITUATION**

On the receipt of an application for transfer by a teacher, action was initiated at different points, resulting in multiple transfer orders. There were no guidelines for processing transfers. The district authority could not keep track of the vacant posts in the district as transfer orders were issued at various levels. Less desirable locations experienced an exodus of teachers and this created a serious labour force crisis in schools. The process of handling these requests was riddled with corruption and nepotism. In the manual system, transfer took a long time and teachers experienced many delays.

**CHALLENGES**

- The application met significant opposition.
- It took some time to change mindsets of the system. Officials were to give a successful demo of the application.

**STRATEGY**

- Laying down guidelines, prescribing formats and time of application for transfer.
- Prioritizing reasons for teacher transfer through an online application, deliberations/consultations at various levels
- Preparing a database about vacant teacher positions at district level.
- Generating a list in the order of priority as envisaged in the guidelines.
- Publishing a list of transfer candidates along with their rankings (based on the reason for transfer) on the notice
board at the Deputy Director Public Instruction’s (DDP) office and inviting objections if any.

- Calling the candidates in the order of priority according to their position in the list, and allowing them to select their choice from among the vacant teacher posts in the database.
- Printing and handling over the transfer order to the teacher.
- Updating the database by feeding the old posting as a vacancy.
- Publishing a list containing names of teachers counseled, along with the posting details, and a list containing vacant positions after each counseling session.

RESULTS

- The entire computerized counseling activity was completed in a short time and could be scheduling during summer vacation without affecting school activities.
- Only one order was issued for every transfer aspirant.
- Political interference in the transfer process was significantly reduced.
- It took about 2-5 minutes per teacher. 75-100 teachers were counseled in a day, completing counseling of 1,500 teachers in a district in 15 days.
- The teacher transfer application was used for one year (1999). Due to various factors, including a ban on general transfer, the system was abandoned. The application was not resumed even after the ban on transfer was lifted.
- Bribery has decreased significantly after the introduction of this new system.

LESSONS LEARNT

- Computerized counseling for teachers transfer demonstrated the potential benefits of eliminating political favors and the misuse of discretionary power in transfer.
- Technologically simple and inexpensive applications can be very effective in combating deep-rooted problems like corruption.
- It was easy to revert to a manual system after successful use for a year when the minister changed since the decision–support system was standalone.
- The most disgruntled were those with low priority requests but with connections at high places.

REPLICABILITY

- No other department in Karnataka Government or elsewhere has followed suit, even though the software solution is easy to replicate. A strong political will is the key ingredient that was needed to implement such systems.
- The application continues to be successfully used for admissions to teacher training institutions, posting of newly recruited teachers and posting of teachers on promotion.

CONCLUSION

ICT deployment should not only create e-governments but it should entail people participation and thus must be citizen centric by involving them in a decision making process which is the true spirit of democratic e-governance. By implementing e-governance we are moving towards knowledge society. Citizens preferred to be online than inline.

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