State level Municipal Reforms - a model for eGovernance

by Keerthana Srinivasan, eGovernments Foundation

Introduction

Walking into the Municipal Reforms Cell office, one is taken by a pleasant surprise, to see a setup that is very unlike a regular Government office stacked with files. Instead what you see is a very state- of-the-art data center and an office which could rival any corporate IT office, brimming with activity that is geared to provide citizen delivery services and backend support for 213 ULBs in Karnataka.

Tracing back the history of MRC, the Karnataka state government in 2005 initiated, under the leadership of Mr. Nilaya Mithash, the then DMA of Karnataka, an ADB funded state-wide reform initiative covering the largest 49 municipal bodies in the state. Named as the 'Nirmala Nagara Project (referred to as NN), the objective was to introduce reforms across these municipal bodies in order to improve administrative efficiency, increase the self-sustainability of the ULB's by reducing the vertical imbalance in their budgets, make them more transparent and most importantly, equip them to provide better citizen services. These reforms were further extended to cover another 164 ULBs under the World Bank funded "Karnataka Municipal Reforms Project".

Anjum Parwez, IAS
Commissioner of Municipal
Administration,
Karnataka shares about the
outcomes of the Nirmala Nagara
Program

"Nirmala nagara implementation has helped us create a common platform for all the 213 ULBs to monitor, knowledge share and make comparative evaluation between municipal bodies making our administration much easier"

One of the key components of this initiative was the e-governance component covering the following modules:

1. Property Taxation with GIS
2. Fund-based double-entry Accrual Accounting and Budgeting
3. Public Grievance and Redressal
4. Birth and Death Registration

To implement the above initiative, eGovernments Foundation, a social enterprise, was chosen to develop a state of art solution leveraging web based architecture and centralized deployment.

eGovernments Foundation provided technology thought leadership and partnered with Municipal Reforms Cell to develop an eGovernance solution enabling Municipal Reforms Cell to:

- Streamline the processes and standardize them across all the municipal bodies in the state

- Bring consistency in operations through a standardized software solution covering all the bodies
- Digitize records and make them available to all stakeholders online

The key challenges in this project were the geographical distribution (the municipal bodies are spread all over the state) as well as the different sizes of the municipal bodies (City Corporations, City Municipal Councils, Town Municipal Councils and Town Panchayats).

Nirmala Nagara Project – At the forefront of Innovation

Srikanth Nadhamuni,
Founder,
eGovernments Foundation

"Nirmala Nagara was a path breaking initiative for us to apply state-of-the-art internet based solution for ULBs which was centrally run, taking away the burden of day to day IT operations for each city, but still could be customized for individual city needs".

This initiative was the first of its kind in India where a state-wide model of reforms were implemented. Traditionally, municipal e-governance reform initiatives have been driven and implemented at local levels, which have made them difficult to replicate. The vision was to create a standardized set of systems and processes across the state which would not only provide the benefit of knowledge sharing across the individual bodies but also create a common platform on which comparative evaluation between municipalities could be undertaken. eGovernments Foundation provided key technology and process inputs based on the studies of other large scale projects across the country and the advancement of the technology and network infrastructure.

The server technologies and network infrastructure were improving rapidly at the time of conception. It was decided to create a centralized system which would enable creation of common processes and data models across the state. The centralized approach would enable the technology team to leverage the internet to develop an application that was accessed by the individual municipal bodies over the internet. In a kind of first subscription based model across the country, the applications were hosted centrally at an independent entity (Karnataka Municipal Data Society) and individual municipal bodies would subscribe to the services by paying an annual subscription fee.

eGovernments Foundation created the technology solution adopting the best of breed open source technologies to drive down the costs further. The solution is flexible to allow the changes for individual ULB's by externalizing the rules in configuration files.

The decision to go with centralized deployments based on open source technologies has paid off resulting in huge savings in costs.

The key to successful centralized implementations is to get the buy in of the stakeholders and ensure that the concerns of the stakeholders are addressed by knowledge sharing, including them in the decision making process and augmenting the capacities wherever needed by appropriate training and staff augmentation.

Achievements of the Project

As per Mr.Anjum Parwez, Commissioner of Municipal Administration, the project has had the following achievements to its credit:

1. Successful implementation of a Public Grievance and Redressal module covering all the municipal bodies. This system has processed over 2 lakh complaints, with a redressal rate of over 90% in the last 1 year.

2. Successful implementation of a fund-based double-entry accrual accounting system in all the municipal bodies. In addition, 187 municipal bodies have published their opening balances and their balance sheets for at least one year. This is a major achievement given the historically poor state of accounting practices.

3. Cadastral-level GIS maps were generated for over 2,00,000 sq. km, covering over 25,00,000 properties across the state. This is the largest and most comprehensive GIS implementation in India to date. This will be the basis for a GIS-based Property Taxation system, again a first of its kind in India (this is currently live with complete GIS/MIS integration in 20 municipalities).

4. Adoption of Process and data standards across the state. Starting with the largest corporations and extending to the smallest Town Panchayat, the processes and data records have been standardized. This has created a data platform that can now be leveraged for creating an analytics framework for improved decision making at a state level.

5. The creation of the Karnataka Municipal Data Society (KMDS) as a sustainable institutional structure that will ensure that the systems run and evolve on a continuous basis, setting the municipal bodies on a path of continuous improvement.

6. A centralized software platform delivered over the internet has dramatically reduced the capital costs (hardware, software) and operating costs (in terms of data centre maintenance, personnel costs). The latter is especially significant given the difficulty in finding qualified technical support in the smaller municipalities.

Challenges

An implementation of this magnitude and scope without any precedence in India is bound to have several challenges throughout the project. Mr Ziyaullah – former Joint Director Reforms (MRC) who had been involved in this project, right from the start, reminisces about the challenges. "The key challenge has been to get a buy-in from the administrative heads of the ULBs, create a sense of ownership in them and make them believe that these changes are systemic and not ad-hoc".

Process Challenges:

The municipal bodies (especially the Corporations) were following their own rules and operating procedures. These were standardized through the adoption of standards (e.g. in case of Accounting, the National Municipal Accounting Manual recommendations were adopted across the state) rolled out through a series of Government Orders issued by the DMA (Director of Municipal Administration) office, which was the nodal agency responsible for the implementation.

A multi-year, multi-disciplinary implementation of this nature is very difficult to monitor for progress. To overcome this, a project monitoring mechanism was devised whereby each municipal body reported their weekly progress on a pre-defined set of parameters. These parameters were then modelled to derive a weekly rank of the municipal bodies. This was then published to all the municipalities and subsequently, used as a basis for the performance monitoring of the Commissioners.

People Challenges:

It is a well-known fact that any e-governance driven change throws up capacity challenges. This was true in this case as well, even more so given that there were significant changes in processes that were rolled out. To overcome this, the Municipal reforms cell of the DMA along with Survey of India and eGovernments Foundation conducted a series of training sessions to the ULB staff, where-in administrators became the trainers. In addition, whole new cadres of accountants and IT engineers were added to augment the capacity at the local government level.

Several e-governance initiatives in India have failed because they have been individual centric. To mitigate this, the DMA office setup an independent society (Karnataka Municipal Data Society) which was setup with a self-sustaining revenue model by which the municipal bodies are expected to pay an annual subscription fee to the KMDS for accessing the applications (similar to a SaaS – Software as a service model).

Technology Challenges:

One of the key decisions taken was to adopt a centralized implementation of the software with the municipal bodies accessing the systems over the internet. This meant that the municipalities spread across the state had to be provided with high-speed internet connectivity. This was resolved by the DMA office contracting out the ISP provisioning for all the 213 bodies to BSNL as a turnkey contract. This is further addressed by the KSWAN – Karnataka State wide area network which ensures a high speed dedicated lease line for connectivity, is available for the ULBs. Also centralized solution still had to accommodate ULB specific needs and data isolation. eGovernments Foundation harnessed the power of Enterprise Java and open source technologies to architect a solution which provided isolated data for each ULB and standardised business logic implementation across the state. This significantly improved the acceptance of the solution by ULBs.

The DMA also invested in sophisticated data centre infrastructure and monitoring tools to monitor the usage and performance of the applications and ensure that the network and servers are upgraded appropriately.

A model for other states

This programme is already serving as a model for other states. Some of the key "best practices" that have been recognized from this initiative and can be leveraged in other municipal level e-governance projects are:

It is best that State-wide implementations follow an internet-based centralized approach in terms of software applications and server infrastructure. This dramatically reduces the total cost of ownership both in terms of hardware and also in terms of software maintenance and releases.

Process re-engineering and standardization of operating procedures across the state must be the driving force behind any e-governance initiative. This has a huge benefit of standardizing the processes across all the municipal bodies in the state.

Investment in capacity building is one of the most important determinants of success in any e-governance initiative. Capacity building must go beyond training and also include capacity augmentation, especially where there is a requirement for new skills.

The necessary institutional arrangements can go a long way in creating accountability and ownership for e-governance implementations that span across several years. The Karnataka Municipal Data Society (KMDS) setup with a self-sustaining revenue generation mechanism has created a model structure that can be replicated across the country.

Anjum Parwez, IAS
Commissioner of Municipal Administration,
Karnataka outlines the next level vision for municipal governance

"Having established a strong foundation of egovernance, we are now well positioned to move to the next level of reforms by using mobile technologies to connect better with citizens, i.e., move to m-Governance"

What lies ahead

Urban data is becoming critical for planning and decision making, that credible ways of collecting and authenticating the data should be evolved.

The future of urban governance will be to provide citizen services at their doorstep, without them having to approach municipal office, thereby reducing the physical interface between the citizen and the municipal officials. Mobile governance would play a key role in the future to achieve this.