E-Governance in Public Financial Management: An Overview

Krishna Rupanagunta

Developing countries, particularly India, are investing heavily in e-governance, driven largely by the promise of efficiency and transparency. While there are no definitive estimates, it is generally believed that the e-governance spending will run into hundreds of crores over the next few years. While the first generation of e-governance spending focused on hardware, the focus is increasingly shifting to leveraging e-governance for better information management, improving operational efficiencies and of late, improved transparency. Underlying this paradigm shift is a growing realisation that e-governance is more of a means than an end in itself. More importantly, it is increasingly obvious that for e-governance initiatives to succeed, they need to be viewed as more than computerisation efforts – in fact, there is a need to approach e-governance in the framework of larger, more comprehensive changes in the areas of policy/legal framework, technology standards, application standards and perhaps most importantly, distribution channels.

This paper begins with a definition of e-governance and proceeds to offer a holistic framework to define and evaluate e-governance projects. This is followed by a case study of the implementation of ongoing municipal accounting reforms in Karnataka with a focus on the role of e-governance in the implementation. The overall thrust of the argument is that a clear e-governance framework with a stress on standards and disclosure norms, combined with a clear implementation roadmap, is critical to a sustainable implementation of e-governance solutions.

Krishna Rupanagunta is Chief Operating Officer, eGovernments Foundation, a technology non-profit organisation.
krishna@egovernments.org

E-Governance: A Definition

E-Governance is a much used (and often abused) term to describe the entire spectrum of investments in Information and Communication Technologies (ICT) by the government. Needless to say, e-governance is much more comprehensive than a technology investment.

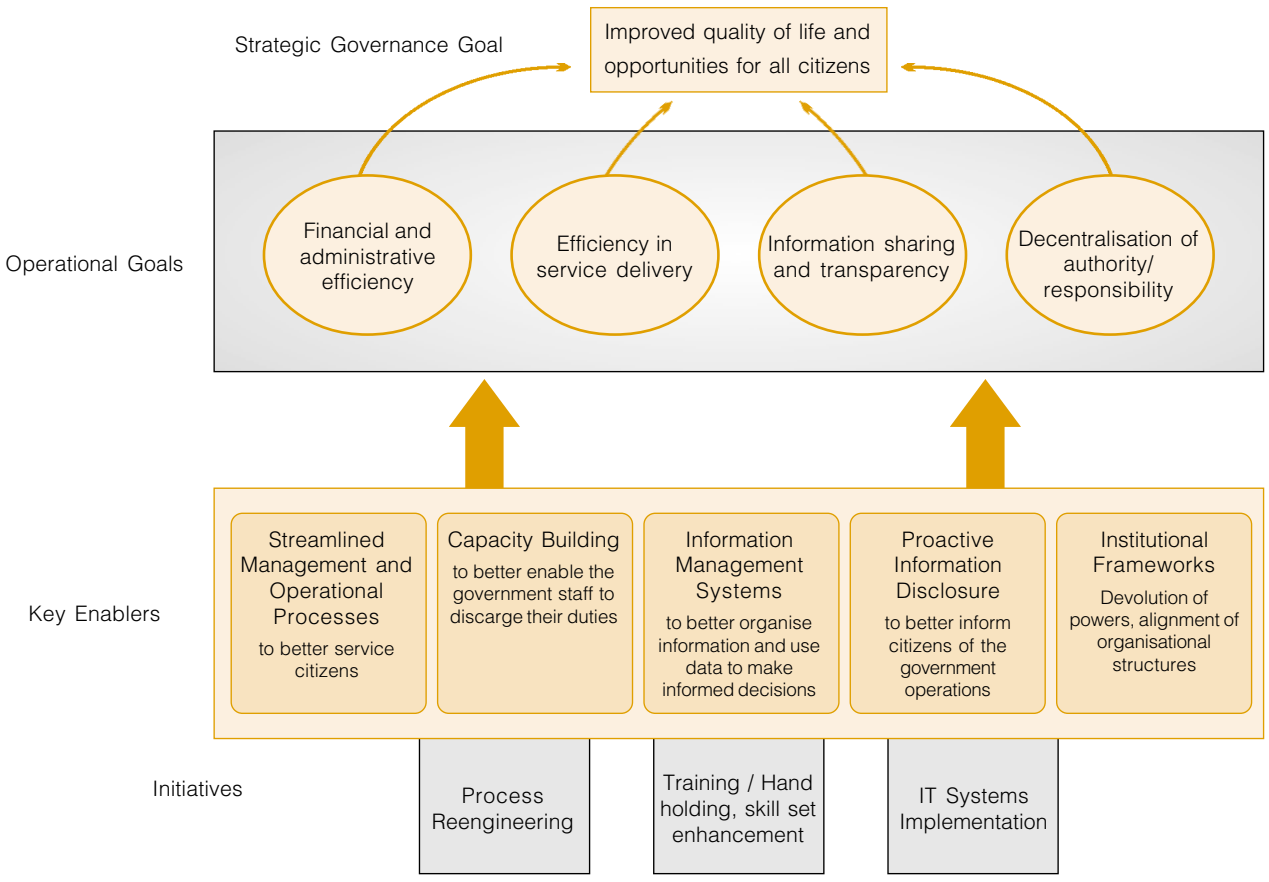
A formal definition of e-governance is the application of electronic technologies in the following three areas of public action[1]: relations between the public authorities and civil society; functioning of the public authorities at all stages of the democratic process (electronic democracy); and the provision of electronic public services.

In other words, it is the use of IT solutions, in conjunction with other policy and interventions, to improve different aspects of governance. For instance, a municipal government has an obligation to improve the quality of life and opportunities for citizens (see Exhibit 1). To realise this policy goal, the municipality must focus on the following operational goals: financial and administrative efficiency; efficiency in service delivery; information sharing and transparency; and decentralisation of authority/responsibility.

The key enablers to achieve these goals are:

- Streamlined management and operational processes leading up to improved accountability, internal efficiencies and better services to citizens
- Capacity building to better equip the municipal staff to discharge their duties
- Information Management Systems to enable the departments to better organise data and make informed decisions
- Proactive Information Disclosure to better inform citizens of government operations
- Institutional frameworks which include (but are not limited to) devolution of powers from the centre/state to the local governments and alignment of organisational structures

Exhibit 1 Policy Goals of Municipal E-Governance



with outcomes (i e move from the traditional department-based to a function-based focus).

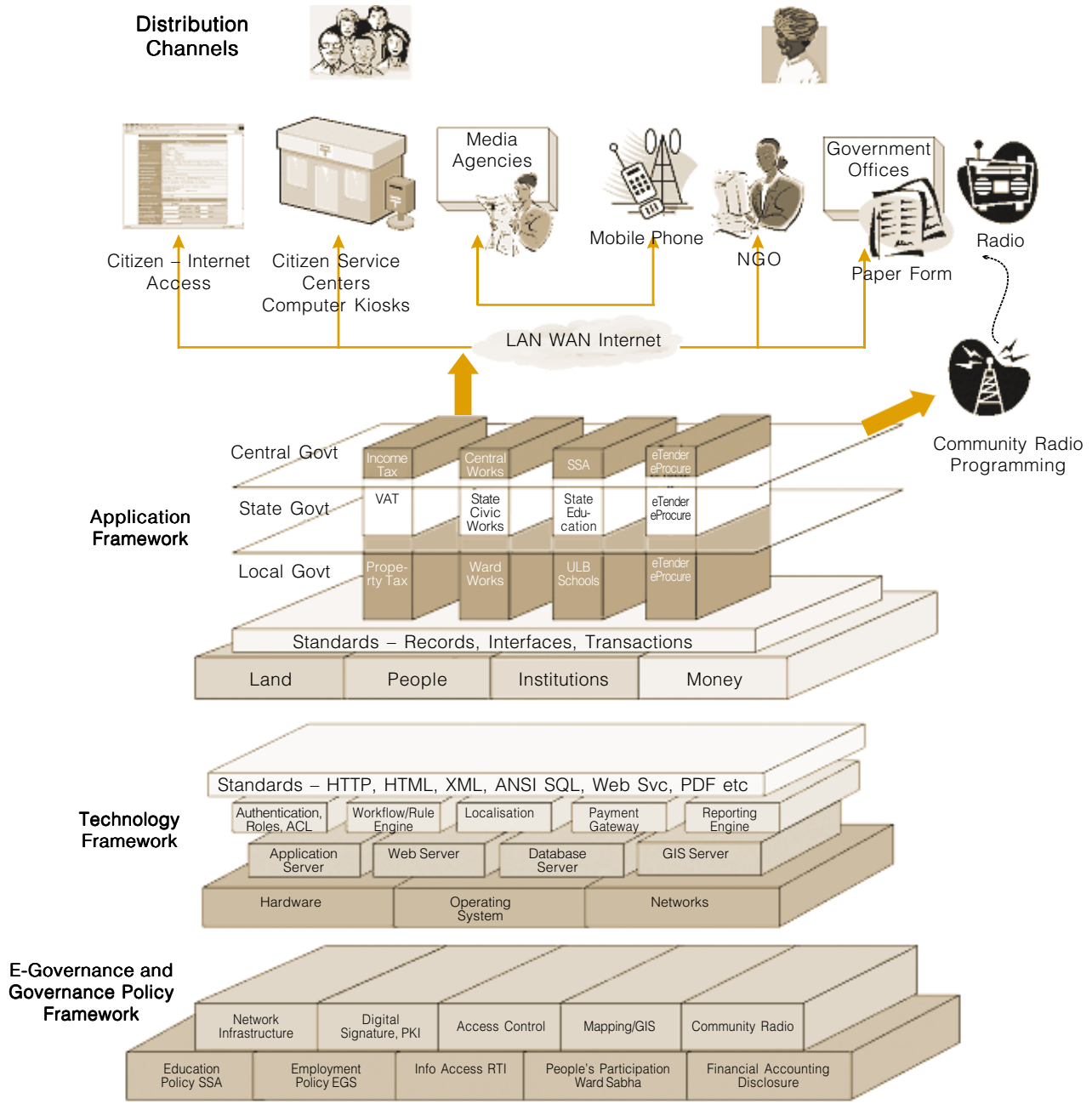
These goals can be achieved by a combination of policy interventions and process re-engineering efforts, supplemented by e-governance initiatives. Any e-governance project to implement these key enablers will require process re-engineering; capacity building in the form of training/ handholding and skill set enhancement; and IT systems implementation.

E-Governance Framework

It is apparent that any e-governance initiative must bring together several diverse, often opposing sets of activities together to deliver the intended outcomes. It is useful, therefore, to build a formal e-governance framework that provides a systematic approach to an implementation. The framework[2] (Exhibit 2) would cover the following aspects:

Policy and Legal Framework – Governance: A

Exhibit 2 E-Governance Framework



The ultimate success of any e-governance initiative will be determined by the ability to draw people into the process of governance. The primary and most important step towards that goal is the ability to incorporate a wide variety of distribution channels to disseminate information to the widest possible cross section of the population.

governance framework must be in place before embarking upon an e-governance project. An IT-based approach without the appropriate policy framework can add little value. For instance, in the public financial management (PFM) area, clearly laid out policy recommendations by the Government of India (GOI) on double-entry, accrual basis of accounting as well as policy directions like outcome based budgets have provided the framework for e-governance initiatives in this area. Specific initiatives like the Comptroller and Auditor General/Urban Development Department (CAG/UDD), Govt of India task force on municipal accounting standards have provided the basis for standardisation in the data capture and reporting across municipalities around the country. This in turn, provides a platform for benchmarking and performance measurement across Urban Local Bodies (ULBs) within and across states.

Policy and Legal Framework – eGovernance: The governance policy reforms must be complemented by policies that encourage investments in the e-governance area as well as leveraging technology based productivity tools. For instance, a policy on digital signatures could pave the way for using this technology to effect a tremendous improvement in the speed with which files would flow within the government. This requires a government policy and possibly, enactment of new laws paving the way for the establishment of their authenticity and acceptability for government transactions. Other areas that may need some policy and legal interventions are online payments to contractors/suppliers, access control policies (for governments as well as citizens), GIS map policies etc.

Technology Framework: Since most government departments lack the experience as well as the expertise in making technology decisions, it is important to have a technology framework that lays down broad guidelines on the technology choices that would provide the best returns on investment. One such area is the adoption of open source software. One of the strongest arguments for using open source software is the opportunity to arrive at a higher degree of independence regarding pricing and licensing conditions. In addition, the scalability and flexibility inherent in open source software allow a high degree of interoperability and also simplify communication with the general public. In this regard, a web-based catalogue with information on free and open source software can be made available for the government departments as a reference prior to making procurement decisions.

Application Framework: The government would typically have a smaller role to play in this area since in most cases applications are developed and supplied by private companies. The government must however lay down the guidelines for application by adopting, wherever possible, a standards based approach. For instance, in the area of PFM for municipal governments, a state-wide standard application deployment must be encouraged, irrespective of the size of the municipality. This allows valuable benchmarking across all the municipalities within a state and an opportunity to adapt best practices from one government to others within the state.

Distribution Channels: The ultimate success of any e-governance initiative will be determined by the ability to draw people into the process of governance. The primary and most important step towards that goal is the ability to incorporate a wide variety of distribution channels (in addition to the Internet, TV, radio, print) to disseminate information to the widest possible cross section of the population. The Right To Information (RTI) Act, 2005 is a decisive step in that direction and no e-governance framework can be complete without laying the foundation for proactive disclosure of information to citizens.

E-Governance in Public Financial Management (PFM)

Recent years have seen major initiatives in public financial management (PFM) in India. The most far-reaching recommendation in this area has been that of the 12th Finance Commission for a transition to accrual basis of accounting at all levels of government. This transition requires a combination of significant efforts in the areas of accounting policies and standards, a policy of recognition and measurement of assets

and other financial elements, supported by process re-engineering and capacity building to better equip the government personnel (steeped in several decades of single-entry, cash-based accounting) to transition to a double-entry accrual basis of accounting. While it is well recognised that a well-designed e-governance system is essential to implement a double-entry basis of accounting, it is also increasingly obvious that IT systems are essential to meet the purpose of accrual accounting – as a means of providing vital information on the intrinsic financial health of the government, assessing the true costs of service delivery and a framework leading up to better transparency of government operations. A well designed and implemented e-governance system has the potential to improve financial management in the following ways:

Providing basic information management: Automation of mechanical activities (eg automatic generation of accounting vouchers triggered by each financial transaction) and easy generation of accounting records, financial statements and management information systems (MIS) reports are essential to ensure basic data integrity, availability of data on demand and timely audit of transaction data. This, coupled with the proper measurement of assets, can provide a better picture of financial health in the form of balance sheet and income/expenditure reports. This is the necessary foundation to set a municipal government on the path to effective financial management, leading up to the municipality exploring debt/financial markets for raising funds. For instance, the Kolkata Municipal Corporation (KMC) was given an A+ stable rating for the Rs 100 million bond programme from CRISIL[3] which would not have been possible without the metrics generated from a financial management system. While it is obvious that a variety of legal, administrative and financial reforms are necessary before a municipality can access the debt/financial markets, a well integrated financial management system is a necessary starting point[4].

Better decision support systems: Transaction data captured in the right formats classified appropriately and presented in simple, easy to use formats can be used as valuable decision support systems. For instance, capturing the object (ie a specific function performed or service rendered) and the subject (ie the nature of the expenditure) of each financial transaction undertaken by the government can be used to understand the true cost of service delivery by activity. This in turn, can be used for arriving at the effective price of each citizen-service leading up to the objective of cost recovery of these services. For instance, JNNURM (Jawaharlal Nehru National Urban Renewal Mission), which was launched in November 2005 with the thrust to ensure improvement in urban governance and service delivery so that the municipalities become financially sound and sustainable for undertaking new programmes, recommends that ULBs levy a reasonable user charge so as to collect the full or recurring cost of operations and maintenance in the next seven years[5]. To achieve this, these government bodies need to be able to accurately arrive at the recurring cost of services to citizens. Needless to say, this is impossible without a well implemented MIS system which captures transaction data, which can then be used for a decision support system for analysis and more informed decision making.

Traditionally, the financial status and performance of governments have been opaque due to the inability of the government to report data as well as the absence of a legal mandate to publish data. The Right to Information Act, 2005 is a step in addressing the latter – while the former can be addressed by a well-designed e-governance system.

Proactive information disclosure: While the above two areas are well understood, disclosure of information is a new and perhaps the most powerful application of e-governance in PFM. Traditionally, the financial status and performance of governments have been opaque to the primary stakeholders, the citizens. This has been due to a combination of the inability of the government to report data in the public space as well as the absence of any legal mandate to publish data. The introduction of the Right to Information Act, 2005 is a significant step in addressing the latter – while the former can be addressed by a well-designed e-governance system. For instance, a financial management system designed to report data in simple, easy to understand formats fully integrated with a portal can bridge the gap between the government and the citizen, offering the latter an opportunity to understand the true costs of the delivery of services. For instance, the PROOF (Public Record of Operations and Finance) initiative in Bangalore aims to publicise the financial

performance of the Bangalore City Corporation on a quarterly basis and provide a platform for citizens to participate in the process[6]. This would not have been possible without a financial management system providing information to multiple dissemination channels like the Internet, printed summaries and a weekly radio programme – an excellent example of an e-governance initiative integrated with multiple distribution channels.

Exhibit 3 summarises some of the government initiatives in the area of e-governance in PFM that could enable an effective and sustainable implementation of financial management reforms in the government.

E-Governance in Financial Reforms: Karnataka Case Study[7]

In 2003, Karnataka embarked upon a comprehensive financial reforms initiative covering the 57 largest municipal governments in the state. This effort culminated in the launch of a double-entry, accrual based accounting system across these municipalities from April, 2006. This was followed by the launch of an integrated municipal financial accounting and budgeting MIS system in these municipalities in August 2006. This experience provides an interesting case study of a comprehensive approach with an e-governance implementation integrated into policy and process reforms.

Some of the key drivers that led to Karnataka taking up the initiative to embark upon the reforms process are:

- Information gaps in the cash based system and the promise that the switch would help generate a more accurate picture of the financial position and make information readily available for effective financial management.
- As the pressure grows on the municipalities to become self-reliant, municipal governments will increasingly be forced to generate funds from alternative source**s** like the open financial markets (eg municipal bonds). This requires a certain degree of fiscal discipline and transparency that would be possible only by making the transition.
- The citizen's right to information is expected to force the government to maintain its records better and as citizen participation in governance increases, the municipalities will be expected to provide an accurate picture of the financial position coupled with an ability to respond to increasingly sophisticated questions in a timely manner.
- Several reform initiatives and policy directives over the last several years, with specific focus on the municipal governments, have set the stage for the transition. Some such drivers are Technical Guide on ULB Accounting and Financial Reporting (1999), Committee for Local Body Accounting Standards (2005); Exposure Draft (2006) brought out by the Institute of Chartered Accountants of

Exhibit 3 The E-Governance Framework in Public Financial Management

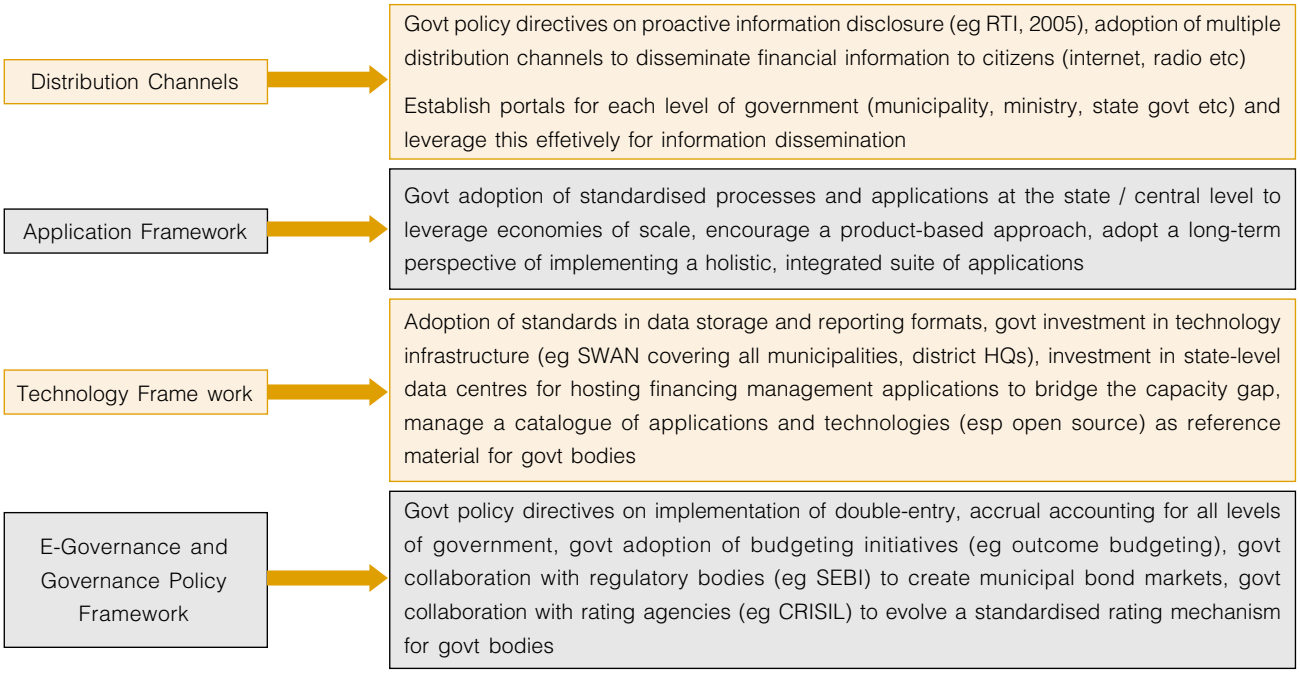
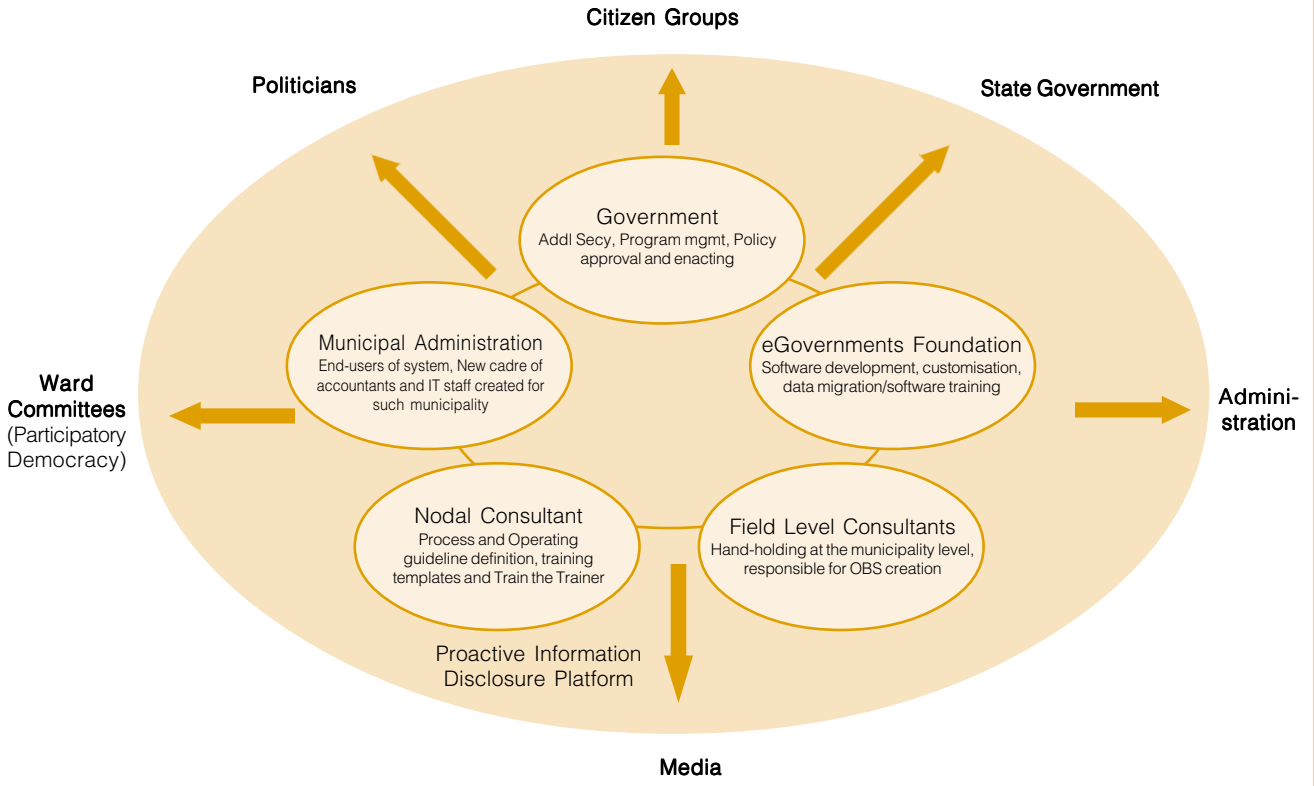


Exhibit 4 Key Stakeholders in E Governance Project in Financial Reforms in Karnataka



India (ICAI); Recommendation of the 11th Finance Commission, 2001; Directive by the Supreme Court, 2001; Recommendation of the Task Force Report, 2002, of the C&AG (Comptroller & Auditor General); the National Accounting Manual by the C&AG and the Ministry of Urban Development, Government of India, 2005; and the pre-requisite for funding under GoI initiatives like Urban Reform Initiative Fund National Urban Reform Mission (2006).

The new financial management systems that have been rolled out in the municipal governments are expected to assist all stakeholders in evaluating efficiency and effectiveness of financial performance, to assess the ULB's financial position, including the level of financial sustainability, aid in making the ULB's performance transparent and accountable to people, and develop a robust financial reporting system that would satisfy the requirements of the banking system/debt markets as the ULBs approach these channels for funds.

Key Stakeholders

The implementation of accounting reforms is an onerous task – even more so in the government, especially the local governments which have traditionally been severely constrained in terms of availability of trained manpower. This is why the Karnataka implementation required the active participation from the following stakeholders (Exhibit 4):

The Government: The project is being championed by the Urban Development Department, Karnataka. A special post of Additional Secretary, Reforms has been created to drive the implementation. The organisational structure of the municipalities in Karnataka, where all the Municipal Commissioners report to a centralised Director of Municipal Administration (DMA) lends itself to the implementation of a uniform set of processes. Needless to say, the DMA is a key participant in the effective roll-out of the processes and systems.

Municipal Administration: As the end-users of the new processes and systems, there is an enormous strain on the administrative machinery to rise to the occasion. In addition to being trained on new accounting concepts (eg Double Entry Accounting, transition from cash to accrual basis etc), some of the smaller municipalities (especially town

It remains to be seen whether the administrative machinery will actually carry out its obligations on the information disclosure front. The response so far has been encouraging, but as the citizen advocacy groups start using the data more aggressively, it is quite possible that the administration may regress into its shell of information asymmetry.

panchayats) need to be trained on the use of computers.

Nodal Consulting Firm: The implementation of the modern accounting processes requires policy changes, changes in the legal framework (eg updating the Municipal Accounts Act), identification of reporting mechanisms (to translate the financial information into meaningful reports for decision support), development of training templates and most importantly, an advisor during the transition phase. In the case of Karnataka, IPE[8] was appointed as the nodal agency to drive this process.

Field Level Consultants: The first year of implementation (currently underway) is generally the most difficult in the transition phase. Not only are the municipalities expected to maintain books of accounts in the new double entry format, they are also expected to prepare the opening balance statement, which requires the compilation of all assets and liabilities, including the fixed assets register for the municipality. To hand-hold the municipalities, field level consultants (FLCs) are being appointed to oversee the first year of transition for all the municipalities.

Software Development Agency: The Government of Karnataka entered into an MOU with eGovernments Foundation (eGov)[9] as the agency to develop and provide the software applications. In the first phase, eGov is responsible for eGov Financials, eGov Property (Property Tax Information System), eGov GIS (GIS platform for municipalities), eGov PGR (Public Grievance and Redressal), eGov Birth/Death and eGov City Portal. All these applications have been provided free of cost to the Government of Karnataka as part of the implementation.

Perhaps the most significant driving force in the implementation has been the recognition of the fact that the e-governance project will need to be more than merely an IT implementation to justify the investment – in addition to improving the internal efficiencies of the administration, it is equally important to improve the quality of data and information available to the various stakeholders. This has driven the project to focus on Proactive Information Disclosure as one of the primary objectives of the systems rather than a desirable by-product. As part of the implementation roadmap, several such initiatives have been planned, a few of which are summarised below:

- Proactive information disclosure on the financial performance to the citizens using a variety of dissemination mechanisms (currently the City Portal is being used to show various financial data to the citizens – eg works awarded and payments made to contractors etc).
- City Management Report to be presented by the Commissioner to the citizens on an annual basis, with a summary of the financial as well as non-financial (eg social indicators) performance to be tabled before the citizens.
- Periodic updates to the state government (Urban Development Department), with comparative data analysis across the 63 ULBs, which should be a powerful decision support system for the policy makers.
- Plans are afoot to integrate the budgeting process (from the budgetary preparation sheets to actual spend analysis by function and account head for previous years) as part of the system to improve the quality of budgets. Budgetary performance will be key information that will be provided to the citizens to gauge the performance of the administration on an ongoing basis.

Needless to say, it remains to be seen whether the administrative machinery will actually carry out its obligations on the information disclosure front. The response so far has been encouraging, but as the citizen advocacy groups start using the data more aggressively, it is quite possible that the administration may regress into its shell of information asymmetry.

Operating Guidelines

Several operating guidelines came to be adopted during the entire process. *Process re-engineering* emerged as a necessary pre-requisite, with the definition of rules, guidelines and operating processes being essential for successful implementation. The 57 municipalities covered by the

Karnataka initiative include city corporations, municipalities and town panchayats. One critical determinant of a scalable and manageable solution is a *standardisation of processes* across all the ULBs. Standardised processes ensure that they are easier to manage and more importantly, that lessons learnt from one ULB can easily be applied to the other ULBs.

To ensure the smooth acceptance of *software enabled processes*, the software deployment of eGov Financials is being done in parallel to the deployment of the processes. This ensures that there is an early adoption of the software and also that the users do not have go through two stages of learning. A standardised process has ensured that the same software application will be deployed for all the ULBs – which greatly reduces the maintenance cost projections. One of the key requirements from the software team was to develop *software for non-accountants*. This required the provision of screens that are easy to navigate and use, with the actual accounting treatment handled by the system as a background process. The focus of the implementation must be *effective finance management*, not mere book-keeping. This calls for proper control procedures like budgetary controls built into the system as well as a reporting tool which is embedded into the accounting software.

In line with the approach to promote *proactive information disclosure*, eGovernments Foundation is making attempts to embody it in all its products and the financial management system is expected to provide information at an aggregate level focusing on the financial position of the ULB to the citizens via delivery mechanisms like the city portal.

Implementation

The deployment of the Financial Management System and processes was an extremely challenging project spanning over 8 months. This section takes a look at some of the key lessons learnt from the deployment process. These lessons can and must be leveraged in other deployments of e-governance applications – not just in the municipal space.

Capacity building: It would not be a truism to say that the single most critical factor in successful implementation of any IT application is the ability of the end-users to absorb and leverage the systems to improve work processes. In the government, this challenge is compounded by the fact the current capacity is inadequate – both in terms of people and skill-sets. This is even more so in the case of local self-governments. The Karnataka e-governance project is also going through the same set of challenges. In the case of the Financial Accounting Reforms process, the government

Fully realising that the accountants in most municipalities would be unable to grasp the complexities of double-entry, accrual based accounting principles, much less the concept of an accounting system, a new cadre of accountants has been created to support the municipalities, and put through a series of training sessions.

came up with the following strategic interventions which are expected to go a long way in making the implementation a success:

- Creation of a new cadre of accountants: Fully realising that the accountants in most municipalities would be unable to grasp the complexities of double-entry, accrual based accounting principles, much less the concept of an accounting system, a new cadre of accountants has been created to support the municipalities. They have been recruited through the Karnataka Public Services Commission (KPSC) and put through a series of training sessions (accounting principles, software usage), equipping them to drive sustained implementation at the grass-roots level.
- Hand-holding support**:** The state is in the process of appointing a chartered accountancy firm (to operate as field level consultants) for supporting the municipalities in the all-important first year of operations, where the deliverables include the generation of the opening balance sheet for the municipality, an activity which requires the formation of the asset register and estimating their current, depreciated value. In addition, the FLCs are expected to provide support to the municipal accountants in internalising the new accounting regulations and reporting requirements, and successfully deliver all the statutory reports (balance sheet, income/expenditure statement) for the year.
- IT Support: Along with the accountants, the government has also hired a cadre of IT personnel, usually covering a cluster of municipalities. This group is currently assisting in the implementation by acting as an IT liaison for the

The risks arising out of the inability to hire good quality IT support have been largely mitigated by the fact that all the applications are web-based and deployed from a central data centre. The potential risk in a centralised deployment model is that of connectivity from the municipalities, especially the smaller, remote ones.

municipality, maintaining the city portals etc. This group is expected to evolve into a municipal level IT support, responsible for the smooth functioning of the systems in the municipalities and resolving local hardware/software support issues.

State-wide deployment: As mentioned earlier, it has been close to impossible to hire good quality IT support staff in the municipalities. The risks arising out of this have been largely mitigated by the fact that all the applications are web-based and deployed from a central data centre located in Bangalore. This has two obvious advantages – ease of deployment (of bug-fixes, upgrades etc) coupled with easy access to trained manpower (technical and functional support). The potential risk in a centralised deployment model is that of connectivity from the municipalities, especially the smaller, remote ones. In Karnataka, broadband connectivity is available from about 30 of the 57 municipalities and for the rest, ISDN connectivity is available – in both these cases, the costs are expected to fall over time even as reliability keeps going up.

Transition and ongoing support: The nodal firm (IPE) and the software development agency (eGov) are responsible for the successful implementation of the reform processes and systems. The sustainability depends on the government's ability to absorb them and ensure that they are inter-woven into the fabric of governance. Karnataka has taken an important step in this direction by setting up an internal competence centre comprising the Expert Management Cell (EMC) staffed by accounts personnel for functional support and municipal-IT support centre for technical support. These groups are well on their way to establishing themselves as a knowledge centre. The state is exploring alternatives to setup a sustainable institutional arrangement which would allow, among other things, the employees' salaries to be in line with the market salaries, outside the constraints imposed by the government pay structures.

The Road Ahead and Key Lessons

The core Financial Accounting module has been successfully deployed in 63 municipalities. In the following months, the Property Tax Information System, Budgeting System, Asset Management and Works Management will be rolled out in all these municipalities. The response from the local administrative machinery has been enthusiastic, which augurs well for the long-term sustainability of the systems.

The biggest impediment to these systems translating into better and more effective governance is inadequate human resource capacity. Most municipalities, especially the smaller town panchayats, face severe manpower constraints, exacerbated by a government hiring freeze. This is probably one of the reasons why most commissioners across the state have welcomed these systems – they clearly see the efficiency gains from them.

One common concern against e-governance initiatives is that they tend to be elitist by catering to the tiny population of 'digital-haves' – this is more so in case of financial management systems where it is important for the citizens to be able to access the data for better analysis (eg a slum settlement would like to know the amount sanctioned and paid to a contractor for repairing the sewer lines in their area – more so, if the work was never performed and the contractor still got paid, a not too uncommon occurrence). One important lesson here is that several dissemination mechanisms need to be leveraged to enable easy access to information (eg print media, radio etc).

The RTI Act is expected to play a key role in driving transparency. The Information Disclosure Platform embedded in the e-governance systems would go a long way in helping the administration respond effectively to RTI requests. However, such e-governance initiatives need to be integrated better with parallel initiatives like the RTI. One important step in this direction is a proposal to implement an RTI system that would integrate with the municipal e-governance platform and allow for easy retrieval of data from transaction systems to respond to RTI requests.

The governments have an uneasy relationship with citizen advocacy groups – however, the importance of a vocal and demanding civic society towards the long-term health of any

functioning democracy cannot be overstated. One key lesson here is that demand side organisations need to be brought into the implementation process much earlier – both to leverage their inputs as well as to ensure that they act as an interface with the citizens for information dissemination.

The political establishment has not been involved at all in the implementation. Getting their buy-in is bound to be one of the biggest challenges to the long-term sustainability of the implementation – it stands to reason that their adoption of the systems and using them as decision support tools would be a critical determinant to the success of the overall implementation. It still remains to be seen how the politicians would react once the demand side advocacy groups start analysing the data, which would without doubt, lead to uncomfortable questions.

The lack of political involvement is probably due to the fact that there has been no financial commitment from the municipalities (the project has been fully funded from grants made by the Asian Development Bank). Having the municipalities make a financial commitment towards this implementation would have made them more accountable and helped them along in terms of adoption. This has been recognised and is being remedied by transitioning to a subscription model, where each municipality is expected to pay an annual subscription fee for the right to use these systems.

Conclusion

The article set out with the premise that the lack of a holistic approach to e-governance is probably the single biggest reason why such initiatives have failed. The first step to addressing this is the need for a cogent definition driven by a realisation that e-governance must be treated as a means to an end, which should typically be in the sphere of governance. Following that, the article focused on e-governance in the area of PFM, with a specific case study of the implementation of an integrated financial management system supporting double-entry accounting (a key first step in the PFM cycle) in Karnataka. The three major enablers that an e-governance solution brings to PFM reform efforts are – accuracy and speed: basic information management; improved quality of decisions: Decision Support Systems; and improved citizen participation: Proactive Information Disclosure.

The Karnataka implementation experience is one of the most far-reaching e-governance initiatives taken up in India so far. Although the project is in its early days, the implementation raises some interesting questions – how far would the political establishment back any information disclosure initiative like this? How would the government take to an aggressive advocacy group demanding data from these systems? And one area that has not been studied much, the project financing strategy – since most e-governance initiatives in India are currently being funded from grants, does this absolve the government agencies of any commitment?

References and Notes

1 E-governance, a definition that covers every aspect of government from the Council of Europe: http://www.coe.int/T/E/Com/Files/Themes/e-voting/definition.asp

2 'Making eGovernance More Effective', White paper submitted by eGovernments Foundation to the National Knowledge Commission, Dec 2005.

3 'Kolkata Municipal Corporation Bonds get CRISIL A+ Rating', http://www.domain-b.com/finance/rating/crisil/20050119_kolkata.htm

4 A detailed analysis of how the municipal reforms agenda stacks up against the criteria laid down by CRISIL and other such agencies and more importantly, the absence of a broader set of commonly accepted metrics used to measure the pace and effectiveness of municipal reforms is a topic worthy of further research. As a starting point, refer to the following for the CRISIL guidelines: www.crisil.com/Ratings/BusiAreaMethodology/MethodologyDocs/criteria_muniulbs.pdf

5 Mandatory Reforms: Municipal Level, JNNURM Reform Agenda, Page 8, http://urbanindia.nic.in/moud/programme/ud/jnnurm/brochure.pdf

6 PROOF (Public Record of Operations & Finance), http://www.voicesforall.org/proof/index.htm

7 The case study is a summary of eGovernment Foundation's implementation experience in deploying its Financial Management system in 63 municipal governments in Karnataka. This is an ADB funded project managed by the Municipal Reforms Cell, Urban Development Department, Govt of Karnataka

8 IPE (Infrastructure Professional Enterprises) www.infrastructureindia.com

9 eGovernments Foundation: www.egovernments.org is a non-profit which aims to leverage technology for improving governance, with exclusive focus on municipal e-governance. The company is in the process of developing a full suite of integrated applications (municipal ERP) and is currently working with Karnataka, MCD (Municipal Corporation of Delhi) and NDMC (New Delhi Municipal Council) to develop and deploy the applications.

Reprint No 06406c