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Public Service Delivery: Does E-government Help?

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E-GOVERNMENT: DEFINITION AND SCOPE

The term e-government is of recent origin and there is no commonly accepted definition. It is about a process of reform in the way governments work, share information, and deliver services to external and internal clients for the benefit of both government and the citizens, and the businesses that they serve. E-government is understood as the use of information and communication technologies (ICTs) like the Internet, World Wide Web, and mobile phones, to deliver information and services to citizens and businesses.¹ As a first step, information about services is posted on a website, and citizens can interact with the site to download application forms for a variety of services. The next stage involves the use of ICT in the delivery of services such as filing tax returns or renewing licences. More sophisticated applications include processing online payments.

In developed countries, these services are offered in a self-service mode through Internet Portals, which become a single point of interaction for the citizen to receive services from a large number of departments. In developing countries, online service counters may operate in a department offering services related only to that department. In more evolved models, citizen service centres have been created at convenient locations where citizens can access online services of several departments. Department/private operators man these counters, and citizens do not directly interact with computer screens. Payment collections are often handled through conventional means. In addition to such service centres, citizens may be able to access service delivery portals also.

This paper examines the nature of public services and problems with their systems of delivery. Even though e-government is in an initial stage of implementation in most developing countries, some of the well-known successes have come in applications that streamline the

¹ For definition and scope of E-government see:
<http://www.archives.nysed.gov/pubs/recmgmt/egov/definition.htm>,
E. Tambouris, S. Gorias, and G. Boukis, Investigation of Electronic government,
<http://www.egov-project.org/egovsite/tambouris_panellenic.pdf>,
delivery of government services to citizens. The benefits to citizens from the online delivery of services include convenience (delivery at a location closer to home and less time to transact) and shorter waiting periods. In addition, e-government systems may lead to greater transparency, resulting in reduced corruption. It can, therefore, be seen as one of the few interventions that can improve the delivery of public services.

Different services have varying levels of information content. For example, health services often require physical contact between provider and client, but adult literacy may be based entirely on providing rich information content. Clearly, some services are more amenable to online delivery, whereas in others only planning and monitoring aspects can be strengthened by the use of computers.

The paper tries to understand the manner in which e-government helps overcome impediments in the delivery of different kinds of services. It includes a case study of the online delivery of land titles in Karnataka, which demonstrates a high level of impact and provides insight into how such impact can be created.

ISSUES IN PUBLIC SERVICE DELIVERY

Basic public services constitute elementary education, health, transport, drinking water, and food. According to the World Development Report 2004 (WDR 2004), countries like India have done well in providing access to these public services, but far less well in terms of ensuring the quality, reliability and effectiveness of these services. The unacceptably high rate of absenteeism for primary school teachers (25 per cent) and health workers (43 per cent), reported by the WDR 2004, indicates the poor quality of health and education services. Other services important for economic and social activities such as land administration, police, the repair of public infrastructure, and issuing certificates and licences, are inefficient and corrupt. During a national survey of major public services in India, the Public Affairs Centre found these services to be lacking quality, reliability, and effectiveness.

Often, government is the monopoly service provider, particularly in rural areas. There is very little private sector involvement even in commercial services such as insurance, banking, and transport. Given the serious resource crunch faced by most governments, planning for the delivery of basic services needs to balance reach and access with quality, and quality often suffers. Reach is important for politicians, who frame public policy. Often, resources get wasted because of competitive populism. Political patronage—providing benefits and programmes to narrow groups for a specific interval in exchange for political support—also tends to fritter away resources. Pressure for reform from below is weak due to low civic mobilisation. These are issues of how public policy is determined where the use of ICT produces the least influence.

1 Documentations of many of these successful applications are available at http://www1.worldbank.org/publicsector/egov/

2 Administrative corruption refers to the intentional distortion of prescribed implementation of existing laws, procedures, regulations to provide an unfair advantage to an individual or a firm in return for an illicit private gain to a public official. For a more detailed discussion see “Anticorruption in transition: a contribution to the policy debate,” World Bank (2000), Washington DC.


Other problems in service delivery stem from the way the delivery of these services is managed and operationalised. These include excessive administrative complexity (complex rules, cumbersome procedures), lack of access to information about how to use a service effectively, and capture by "rent seekers" of different sorts. Many of these problems can be handled partially through the use of IT.

There is a dearth of innovation in the delivery of services, and there have been few evaluations for new interventions. There is a need to introduce penalties for poor performance and incentives for superior performance in service delivery. Increasing public spending and creating greater coverage are seen to be the only solutions. However, as the WDR 2004 notes, more public spending is not enough. Increases in public spending on services have often failed in providing intended benefits to the poor.

From the perspective of citizens, particularly the poor, the delivery of public services is plagued with the following problems.

**Affordable access to services is low**, especially for the poor people in the developing world. The availability of these services varies dramatically across countries, and the poor have to often travel long distances to access them. Even in the case of information-based services, citizens need to travel to a district or taluka headquarters to collect a certificate or apply for a ration card.\(^7\)

**High costs**: The costs of services, both in terms of money and time, are high, particularly for the rural poor. For instance, often, the poor in developing countries pay higher prices for potable water than what middle-income or rich people do.\(^7\) For receiving licences and certificates, they make several trips, paying for transport and losing a day's work.

**Corruption**: The widespread corruption results in denied or delayed services. Petty corruption in day-to-day dealings increases tolerance for corruption in society. Corruption makes certain government posts very lucrative, generating corruption at higher levels in appointments and transfers. Speed money, a polite word for bribe, is what people pay for getting their work done.

**Lack of access to information**: Citizens are deprived of information, and this makes the service delivery system less and less transparent. Decisions and actions are not traceable. The absence of transparency and the lack of accountability mechanisms give discretion to the service providers to delay or deny without assigning reasons.

**Lack of citizen participation**: A number of service delivery systems of the past have lacked client-oriented mechanisms. The active participation and inclusion of citizens at various stages of service delivery, especially evaluating the performance of delivery, are required for improved service delivery.

Lack of supervision in remote areas and other problems of decentralisation lead to

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large-scale absenteeism by frontline service providers. The citizens are usually afraid of asserting and complaining against authorities. Mechanisms of complaint handling are either weak or non-existent. Without proper access to information it is not easy for citizens to support their complaints with appropriate documents.

E-GOVERNMENT APPLICATIONS WITH IMPACT ON SERVICE DELIVERY

There are many instances of e-government improving the delivery of services through direct and indirect means, in developing countries. Since many of the health and education services require physical transactions (check-up, immunisation, diagnostic using equipment, classroom teaching) improvements resulted from better planning and monitoring. For example, in the Nalagonda district of Andhra Pradesh, all auxiliary nurse midwives (ANM) were provided with a personal digital assistant (PDA), where all data about clients could be recorded digitally. As and when services were provided, ANMs could update client records. Monthly reports would be automatically generated and loaded into a central machine. Follow-up activities became organised. For example, wastage in not providing a follow-up dose of immunisation reduced. ANMs saved 20 per cent of their time, which was earlier used to manually enter data into registers and generate reports. However, the current costs of PDA prohibit replicating the pilot projects in other districts.

In another application, transfer requests from teachers in Karnataka are now handled online. The department receives 10,000–15,000 applications annually from teachers requesting transfer. The process was hamstrung with corruption and nepotism. All requests are now prioritised using well-publicised criteria, and teachers are asked to select their choice online. The system has enabled transparency and reduced bribery. Transfers are now handled in a small time window during the vacations. Although the transfer system does not improve access or quality directly, it ensures the availability of a right mix of teachers in schools.

There are many more examples of improvements in services that help expand economic opportunities for rural citizens. For example, n-Logue, a private sector company, has opened 1,000 Internet kiosks in rural areas of Tamil Nadu, using a technology developed by the Indian Institute of Technology, Madras, to take telephony and Internet access to rural areas. These Internet kiosks deliver a variety of services such as telemedicine, training, email in local script, and government services. In eChoupal, a private sector company shares free information on current prices for agriculture produce and processes the transaction of buying agriculture produce online at 3,500 rural kiosks in India. Many services such as land titles and orders for the supply of agriculture inputs are processed at a few of these kiosks in Karnataka.

Driving licences, and payments for utilities and taxes, are handled online at conveniently located centres that handle many different types of transactions from different government departments.

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9 T.M. Vijaybhaskar, (Commissioner for Public Instruction in Karnataka) and S. Lakshmeesha, (Senior Systems Analyst, NIC-Education), Government School Teachers' Request Transfers through Computerized Counseling in Karnataka, India, Bangalore, 2002.
10 For details, visit: http://www.echoupal.com
These applications have resulted in the following benefits.

- Faster processing, shorter wait, shorter queues;
- Fewer trips to government offices, saving transport costs, and wage losses;
- More accurate and legible documents, easy recovery from errors, better reception areas;
- Less corruption, more transparency;
- Improved access to offices (nearer home, 24x7) and government functionaries without intermediaries;
- Improved complaint handling.

In fact, in some of these applications, a user fee has been levied (enhanced from previous levels or newly introduced), and that is being paid with alacrity. Citizens use these services in spite of competing channels (departmental counters for collecting bills), where the same transactions could be done.\(^{11}\) The front access points in many of these services are managed by private sector firms, which get compensated by the companies that can downsize their own collection and processing agencies. Table I indicates the quantum of efficiency gains achieved by a number of these examples.

**HOW DOES E-GOVERNMENT HELP?**

Introducing computers provides an opportunity to reengineer the entire process by eliminating or simplifying many steps. For example, after implementing Automated System for Customs Data for online customs clearance, the need for multiple forms and multiple signatures are eliminated.\(^{12}\)

Uses of IT also modularise tasks, thus making possible outsourcing to the private sector. For example, Maharashtra and Karnataka have outsourced the entire process of documentation for registration of deeds to private operators. E-government introduces competition amongst delivery channels (between new service centres and departmental counters).\(^{13}\) Standardised documentation of comments/objections lead to effective supervision. A supervisor can compare the number of objections filed by customs inspectors in a day and question the outliers—if objections were being filed to extract speed money. Centralised data bases from different locations can be mined for improved audit, and unbiased sampling for audit purposes is facilitated.

E-government reduces corruption in several ways. It takes away discretion, thereby curbing opportunities for arbitrary action. It increases chances of exposure by maintaining detailed data on transactions, making it possible to track and link the corrupt with their wrongful acts. By making rules simple and more transparent, e-government emboldens the citizens and businesses to question unreasonable rules and procedures and their arbitrary applications.\(^{14}\) Access to information such as rules and procedures, budgets, and names of contractors executing projects, can be shared through web publishing. These applications provide documentation such as receipts or formal comments logged in the system to deny a service.

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\(^{11}\) One example of such services is the e-Seva project in Andhra Pradesh, India. For details, see: http://www.ap-it.com/eseva.html

\(^{12}\) ASYCUDA - Automated SYstem for CUstoms DAta. For details, visit: http://www.asycuda.org/

\(^{13}\) Online registration of property deeds by the stamps and registration department in Karnataka http://www.karigr.org/egov/cmmmessage.htm

Table I

Examples of efficiency gains

<table>
<thead>
<tr>
<th>Country</th>
<th>Type of e-government application</th>
<th>Number of days to process before application</th>
<th>Number of days to process after application</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brazil</td>
<td>Registration of 29 documents</td>
<td>Several days</td>
<td>20-30 minutes per document, one day for business licences</td>
</tr>
<tr>
<td>Chile</td>
<td>Taxes online</td>
<td>25 days</td>
<td>12 hours</td>
</tr>
<tr>
<td>India, Andhra Pradesh</td>
<td>Valuation of property</td>
<td>Few days</td>
<td>10 minutes</td>
</tr>
<tr>
<td>India, Andhra Pradesh</td>
<td>Registration of property deeds</td>
<td>7–15 days</td>
<td>Half a day</td>
</tr>
<tr>
<td>India, Karnataka</td>
<td>Updating land registration</td>
<td>1–2 years</td>
<td>30 days for approval, request completed on demand 5–30 minutes</td>
</tr>
<tr>
<td>India, Karnataka</td>
<td>Obtaining land title certificate</td>
<td>3–30 days</td>
<td></td>
</tr>
<tr>
<td>India, Gujarat</td>
<td>Interstate checkpoints for trucks</td>
<td>30 minutes</td>
<td>2 minutes</td>
</tr>
<tr>
<td>India, Andhra Pradesh</td>
<td>Statutory certificates on caste</td>
<td>20–30 days</td>
<td>15 minutes</td>
</tr>
<tr>
<td>Jamaica</td>
<td>Customs online</td>
<td>2–3 day for brokers to process entry</td>
<td>3–4 hours</td>
</tr>
<tr>
<td>Philippines</td>
<td>Customs online</td>
<td>8 days to release cargo</td>
<td>4 hours–2 days to release cargo</td>
</tr>
<tr>
<td>Singapore</td>
<td>Issue of tax assessments</td>
<td>12–18 months</td>
<td>3–5 months</td>
</tr>
</tbody>
</table>

This makes it possible for aggrieved citizens to file complaints and substantiate their complaints.

If the right procedures are in place, e-government can make financial or administrative transactions traceable and open to challenge by the citizenry. Those responsible for particular decisions or activities can be readily identified. By providing enhanced accounting, and monitoring and auditing systems, e-government applications can ensure that public finances are fully open to senior managerial and external scrutiny.

E-government can be used to combat corruption in two ways. First, it can become one of the key components of a broader anti-corruption strategy, as is demonstrated by the OPEN system installed in the Seoul municipality in South Korea.\(^{15}\) Second, service delivery improvement initiatives can be implemented in corrupt departments, specifically by targeting transparency and reduced corruption.

Table II below analyses how common problems identified in managing service delivery are tackled through the use of IT in e-government applications.

<table>
<thead>
<tr>
<th>Key problems</th>
<th>How e-government helps</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Reduction of corruption</strong></td>
<td>Ability to track the processing of an application for service (those that are not delivered across the counter) by citizens has increased transparency. Supervisors can also track unusual behavior. Collect citizen feedback on corruption</td>
</tr>
<tr>
<td></td>
<td>Remove face to face contact of inspectors and cargo agents by introducing electronic submission</td>
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<tr>
<td></td>
<td>Taking away discretion to delay or deny by automating the process</td>
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<tr>
<td></td>
<td>Keeping a traceable electronic record of transaction reduces the opportunity for corrupt practices and increases accountability of public officials.</td>
</tr>
<tr>
<td></td>
<td>Make procedures simple and transparent</td>
</tr>
<tr>
<td></td>
<td>Remove gate keeping role</td>
</tr>
<tr>
<td><strong>Poor access to information</strong></td>
<td>Publishing rules and procedures for each service</td>
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<tr>
<td></td>
<td>Publishing citizen's charters</td>
</tr>
<tr>
<td></td>
<td>Publishing performance of service agencies</td>
</tr>
<tr>
<td></td>
<td>Publishing downloadable Forms</td>
</tr>
<tr>
<td><strong>Transparency and accountability</strong></td>
<td>Making government records public: Land records, details of budgets, award of contracts, rate charts for valuation of property, results of allotment of plots</td>
</tr>
<tr>
<td></td>
<td>Requiring documentation of objections and decisions by operators</td>
</tr>
<tr>
<td></td>
<td>Keeping a traceable electronic record of operator transaction on the terminal</td>
</tr>
<tr>
<td></td>
<td>Transparent rules for prioritising requests.</td>
</tr>
<tr>
<td></td>
<td>Publishing details of all government transfers</td>
</tr>
<tr>
<td><strong>High costs to citizens</strong></td>
<td>Automate to reduce processing time and process at one go reduces number of trips to government offices</td>
</tr>
<tr>
<td></td>
<td>Offer multiple services from different agencies under one roof</td>
</tr>
<tr>
<td></td>
<td>Scheduling of delivery and collection of documents</td>
</tr>
<tr>
<td><strong>Poor quality</strong></td>
<td>Enable supervisors to monitor performance</td>
</tr>
<tr>
<td></td>
<td>Make it easy for citizens to complain</td>
</tr>
<tr>
<td></td>
<td>Improved activity planning by frontline providers</td>
</tr>
</tbody>
</table>
BHOMI: COMPUTERISATION OF LAND RECORDS IN KARNATAKA

The Bhoomi project in Karnataka has improved the delivery of land records significantly. A recent evaluation by an independent agency indicates that in the perceptions of the farmers, Bhoomi has improved services and lowered corruption. The time to get a copy of a land title has been reduced to 15 minutes, in comparison with many weeks of running after the village accountant in the manual system.

Whereas 66 per cent of the surveyed farmers reported having paid bribes under the earlier system, only 3 per cent report paying bribes now, under the Bhoomi system. The project demonstrates the benefits of making government records more open so that citizens are empowered to challenge arbitrary action. It also illustrates how automation can be used to take discretion away from civil servants at operating levels.

Nearly 20 million records of land ownership of 6.7 million farmers in the state have been computerised. Previously, 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. The village accountant was not easily accessible. The time taken to provide RTCs was 3–30 days, depending on the importance of the record for the farmer and the size of the bribe. A typical bribe for a certificate could range from Rs 100 to Rs 2,000. If some details were to be written in an ambiguous fashion, the bribe could go up to Rs 10,000. Land records in the custody of the village accountant were not open for public scrutiny.

In the manual system, land records were maintained by 9,000 village accountants, each serving a cluster of three-four villages. The village accountants also survey the crops grown on each farm, three times a year. This data are printed at the back of the RTC. Mutation requests to alter land records (upon the sale or inheritance of a land parcel) had to be filed with the village accountant. The village accountant is required to issue notices to the parties and also paste them at the village office. Often, neither of these actions was carried out, and no record of the notices was maintained. If no objections were received within the required 30-day period, an update of the land records was to be carried out by a revenue inspector. In practice, however, it could take one-two years for the records to be updated.

In the Bhoomi project, a printed copy of the RTC can be obtained online by providing the name of the owner or plot number at computerised land record kiosks in 180 taluk offices for a fee of Rs 15. A second computer screen faces the clients to enable them to see the transaction. A farmer can check the status of a mutation application on the Touch Screen provided on a pilot basis in 20 of the computerised kiosks. Operators of the computerised system are made accountable for their decisions and actions by using a bio-login system that authenticates every login through a thumbprint. A log is maintained of all transactions in a session.


\[\text{Subhash Bhatnagar and Rajeev Chawla, "Bhoomi: Online Delivery of Land Titles in Karnataka, India," The World Bank, December 2001.}\]

\[\text{Case study available online at: http://www1.worldbank.org/publicsector/egov/bhoomi_cs.htm}\]

\[\text{In a bio-metric login, a thumb impression is captured at every log in by a small inexpensive electronic device and validated against a pre-existing stored image of the thumb.}\]
In a pilot project, taluk databases from 30 offices are uploaded to a web-enabled central database. RTCs are available online at Internet kiosks set up in one of the districts.\textsuperscript{19}

During a 12-month period, nearly 5.5 million farmers have paid Rs 15 and collected their RTCs from the Bhoomi kiosks. Bhoomi has reduced the discretion of public officials by introducing provisions for recording mutation requests online. Farmers can now access the database and are empowered to follow up. Mutations can be authorised only on the first-come-first-serve basis, taking away the inspector’s discretion to favour those who pay bribes. If a mutation is not approved within the stipulated 40-day period without noting a valid reason (recorded in the computer), a supervisor is authorised to approve.

CONCLUSION

The figure depicts how different actors in service delivery are accountable to one another and to the intended beneficiary, and how e-government can help at different stages. The actors include politicians and policymakers (ministers and higher officials); organisational providers (government departments and agencies); and frontline providers (doctors, teachers, midwives, engineers). At the core of the figure are citizens and clients. As can be seen, some of the problems (mentioned within the ellipses and boxes) that impede improvements in service delivery are very basic in nature. ICTs can only help if there is fundamental reform. The shaded boxes indicate how e-government can help in creating greater accountability between various actors that are involved.

ACTORS IN SERVICE DELIVERY: KEY PROBLEMS AND HOW DOES E-GOVERNMENT HELP

Public policy needs to become more open and accountable. Civil society needs to be strengthened to voice the concerns of citizens. Given this caveat, e-government can improve significantly the delivery of services. Coverage and access can be expanded at low costs, without lowering the quality of services. The need to replicate expensive infrastructure at all delivery points should be avoided through a virtual sharing of such infrastructure. Although the potential impact is high, there are many implementation challenges to be overcome. Success in implementation requires a strong political and administrative leadership, detailed project management, clearly identified goals and benefits, and significant process reengineering. Training expenses should not be minimised.

Normally, the task of building e-government applications is large and complex. The private sector needs to be involved through suitable incentives and partnerships. Civil society needs to be co-opted to build accountability.

Most developing countries are not fully ready to embrace a comprehensive programme of e-government. Rather than wait for total readiness, an approach of learning by trial and consolidating small gains is recommended. The first steps are to identify pilot projects in

\textsuperscript{19} Internet kiosks are being set up in rural areas by the department of agriculture, NGOs’ and the private sector but the numbers are very small. See \textit{The Hindu}, "IT for agriculture: Karnataka move," April 3, 2002, http://www.hinduonnet.com/thelhindu/2002/04/03/stories/2002040303460000.htm
those departments that have some exposure to computerisation, and a large interface with the public, and have been assessed to be corrupt. Benefits of implementing the projects need to be articulated in specific terms, evaluated through independent surveys of clients before they are scaled up.