ICT for Social Development: Some Experiences and Observations¹

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Abstract

It is widely acknowledged that Information and Communication Technologies (ICT) have potential to play a vital role in social development. Several projects have attempted to adopt these technologies to improve the reach, enhance the base, minimize the processing costs, and reduce the cycle times. Studies and experiences of Center for Electronic Governance at Indian Institute of Management, Ahmedabad (CEG-IIMA) indicate that significant efforts are required to internalize these technological solutions through well managed reengineering of back-end processes and capacity building efforts to ensure sustainability. Suitable public-private partnership models have to be adopted to ensure rapid development and cost-effective solutions.

Introduction

Information and Communication Technologies (ICT) have been used in the planning, implementation, and monitoring of several social development programmes and projects. Most of these in the recent past are E-Governance projects which offered easy access to citizen services and improved processing of government-to-citizen transactions. Some of these have attracted even international attention and won prestigious awards. They have become reference models for future e-governance project implementations. However, an equal number of such projects have faced acute problems of sustenance after their successful launch by the dynamic project champions. An analysis of these projects suggests that comprehensive effort is needed to ensure that citizens derive real benefits from such technology adoption projects. Many back-end government activities will have to be re-engineered and desired process changes be introduced to match the citizen expectations by taking advantage of the storage, processing and distribution powers of emerging ICTs. In addition, an image building exercise through exhibition of transparency is essential to remove the distrust among the citizens on the functioning of service delivery mechanisms. Private participation will have to be facilitated to bring in the expertise, cost sharing, speed of implementation, and to offer better value proposition to citizens. The governments will also have to address more serious management issues of identifying and

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preparing project champions, ensuring appropriate tenures, smooth transition, and internalization. We present here some studies to substantiate our observations.

Two projects, in the domain of social development: one in dairy sector and the other in the district administration were undertaken by the CEG-IIMA to demonstrate the power of connectivity and back-end computer processing in empowering the socially backward citizens. The following sections summarize the CEG-IIMA's experiences in conceptualizing and executing the projects.

Dairy Information Services Kiosk (DISK) and Dairy Portal

The dairy sector project was aimed at enhancing the service delivery to dairy farmers in villages by utilizing the opportunity of communicating with them almost twice a day when they come to pour milk at the collection centers of the milk cooperative societies¹. This was accomplished by enhancing the functionality of the PC connected to the milko-tester machine at the daily milk collection center by converting it into 'Dairy Information Service Kiosk' (DISK). For this purpose, a database of society members and their cattle was created and loaded on the PC at the milk collection center. Two way asynchronous communications between the society and dairy union were established through internet by connecting the milko-tester PC to the society's telephone line through a modem. This connectivity was utilized to receive the schedules of union services (such as fodder, veterinary, and animal-husbandry) to the members of the society based on the cattle information in the member database. It was also used to transmit the daily milk collection data to the dairy union to plan its production processes. Software was developed to create personalized messages relating to the services to its members, and print them in the regional (Gujarati) language on the milk pay slips, which, the dairy farmers receive at the time of pouring the milk. In addition a Dairy Portal was created to provide information on various dairying practices and offered a forum for exchange of views and commercial transactions to the members of dairy cooperative societies.

CEG-IIMA involved a local entrepreneur for supplying the hardware, testing the software, building the databases and maintaining the system (hardware and application) at the society

level. Two milk cooperative societies and a Dairy Union in Gujarat participated in the project by deputing their personnel. The project demonstrated the power of databases and connectivity in improving the cycle times and in enhancing the quality of services to the dairy farmers through the existing system.

The project generated high level of enthusiasm in the dairy sector since DISK opened a simple and easy to use data based communication channel between the dairy farmers and union. Several societies and Unions have expressed interest in adopting it. The issues before its replication and sustainability are:

1. Private Participation

It was experienced that the only way to service the remote rural areas, in which milk collection societies are located, is through participation of private entrepreneurs through appropriate contractual arrangements. They are expected to compose inexpensive DISK packages and offer database services. Mechanisms will have to be evolved to facilitate their participation on contract basis.

2. Preparedness of the Unions.

The daily milk collection data gets transmitted to the unions on day-to-day basis through internet. The dairy unions will have to be geared up to process such data and advice the societies, in addition to improving their own operational planning based on this data. In addition, the unions will have to undertake the responsibility of maintaining the DISK software and ensure uniform service to all societies. Unions acknowledge this and are making efforts to gear up.

3. Content management of the Dairy Portal

Managing dairy portal is an editorial task. The dairy unions will have to engage domain experts and take the responsibility of managing the contents of the portal, which truly belong to their domain.

4. Funding support to unions

Although the incremental cost of DISK is not high, the dairy cooperative societies look forward to an inexpensive packaged solution approved by their unions and some funding support. Organizations like NDDB will have to examine possible options and advice the unions and societies.

These Issues are being addressed jointly by CEG-IIMA, NDDB, and a Dairy Union.

Citizen Services Portal (CSP)

The Citizen Services Portal project is aimed at facilitating the district administration in delivering its services to rural poor. The objective of the project is to offer the rural citizens an improved access to information on government schemes and services and also facilitate the process of applying for the same from their villages². This is accomplished through an internet portal and PC based information kiosks which can be run by anyone such as STD operator, a cooperative society, cyber café, or even a provisional stores.

The project was initiated by a dynamic and enthusiastic collector of a predominately tribal district in Gujarat. The collector involved almost all departments at the collectorate and concerned agencies in the state capital of Gandhinagar and ensure that they extend cooperation to the supply and maintenance of information on various government services to rural citizens. The CEG-IIMA interacted with the government departments, community leaders, elected representatives and the common man to design the user interfaces and portal specifications. The voluminous data received from the departments was categorized and converted to easily understandable local language format and hosted on the portal developed by CEG-IIMA.

At the time the CSP was delivered by CEG-IIMA to the district administration for professional packaging and replication, the portal contained about 130 forms, 45 schemes and 700 pages, cutting across 13 departments. It provided online applications like national old age pension scheme and grievance redressal, and easy to use search engines and feedback sections. Small private entrepreneurs, STD booth operators, and cooperative societies interested in registering themselves as information service providers were trained to offer the services to citizens using the internet-connected (for on-line transactions) as well as stand-alone CD-ROM based systems. Subsequently the portal was re-packaged (as http://www.mahitishakti.net) by a private entrepreneur and was extended to large number of information service providers in the district of Panchmahals. It is being considered for statewide replication after due evaluation.

This project has generated considerable enthusiasm in the district administration and state government. The district collector facilitated its deployment through private participation by constituting 'e-governance Trust'. The service delivery was accomplished through the registered private STD booth operators, cyber cafes, and cooperative societies.

Following are some issues of significance to this project:

1. Project coordination:

The district collector (project champion) contributed significantly to the concept development and in providing necessary linkages with related government departments. The CEG-IMA has provided research for portal design, software development, database and information creation, and training inputs to the project. This facilitated design of an appropriate solution and rapid development of the prototype.

2. Private Participation:

A private entrepreneur (software developer) was engaged by the district administration for packaging, rolling and maintenance of the portal and associated services. Also, through the society mechanism (e-Governance Trust), several private parties were registered as kiosk operators and were engaged to offer the services (forms, on-line applications, information etc.) to citizens. Each member is charged a fixed amount as registration fee to offer the services. The members were offered easy loans to acquire PCs to offer this service. The project was scaled up quickly through this mechanism, in the district.

3. Value for Citizens

The state and central governments have several schemes to offer to the rural poor in the project district. Thus, currently, the rural poor find it worth visiting the kiosks to get information on the schemes and to obtain forms to apply for the same.

4. Capacity Building

Sustenance of this model depends upon the efficacy of the backend services and effectiveness of the kiosk operators in marketing the services. If the backend services (announcement of schemes as well as processing of applications) do not match up to the expectations, the kiosks may degenerate into expensive forms-vending machines and may ultimately be deserted by the citizens. Considerable capacity building efforts are required at back-end to support these services.

The portal was packaged with several useful information services in the areas of education, health, agriculture, forestry etc. The e-Governance Trust is expected to ensure

that the contents are up-to-date and put special effort to market the services. The kiosk operators have also to be trained to understand and offer services bundled with the portal.

The project champion attempted to address these issues to a large extent. However, even in this project the political developments and the tenure of the champion influenced the sustenance of the project.

5. Inter departmental coordination

Although portal is hosted by the district administration, the services offered cut across the district, state, as well as central government departments. High level coordination effort is required to ensure continues participation of these agencies in supplying information and processing the user requests / applications. An effort was made to ensure this at state level.

6. Connectivity

Although options were provided to offer the services through stand-alone mode, internet connectivity could become a bottleneck for online applications. These problems have to be monitored and alternate solutions have to be worked out to keep the kiosks attractive for the citizens and to ensure that they are economically viable.

Evaluation of some e-Governance Projects

CEG-IIMA has conducted comprehensive evaluations of two e-Governance projects^{3,4} and studied several other projects. The two projects, which were evaluated comprehensively, are very celebrated ones and have won international awards in the area of IT applications in government. This section presents a summary of our observations.

- One of the projects is related to extending of government services to the rural poor at their doorstep. The other project is related to improving the revenue collection by minimizing manual intervention and corrupt practices at the inter-state check posts.
- Both the projects were conceptualized and implemented by highly motivated officers of Indian administrative service. The project champions have very good understanding of the ICT and its potential in the application domain.
- Resources for the projects were mobilized through special efforts by the project champions. They got the software developed rapidly through the involvement of private parties.

- 4. Private entrepreneurs were associated in the delivery of services and maintenance of technology. PPP model seemed to have worked well in both the projects.
- 5. In both the projects, the concerned government employees were extensively involved and given training on motivation and understanding of ICT.
- 6. Citizens appreciated the transparency offered by the systems
- Citizens appreciated the efficiency of processing offered through the connectivity and computer processing. These systems have increased the awareness of ICTs and their applications in the rural youth.
- 8. In one application, the revenue realized by government went up 10 folds from Rs.30 crores to Rs.300 crores. In the other application, the citizens of a remote tribal belt were highly satisfied with quick responses from the government without their need to go to district/taluka head quarters.
- 9. Both the applications slipped in acceptance as well as performance soon after the project champions were transferred. Following are some identified problems:
 - a. In the rural citizen centric application, citizens noticed slippage in responses to their applications.
 - i. Connectivity and power supply often became serious constraints. System up time was very low either due to lack of power supply or due to poor connectivity. Possibly some services could have been designed not to use these technologies in such environment.
 - ii. Concerned departments did not process the applications on time. The backend systems required re-engineering, computerization and networking. Under project mode the officers responded to dynamic leadership of the project champion and responded in the absence of improved systems. But subsequently it proved to be the most challenging task and needed special attention to ensure sustenance.
 - iii. Since the applications relating the employment generation and livelihood did not get attention, poor rural citizens gradually withdrew from using the kiosks.
 - iv. The kiosk operators did not find it remunerative to run the services due to very low volume of transactions with the existing services. Many service providers have closed down their centers.

- b. In the improved revenue collection application at the check posts, transporters encountered the following difficulties:
- i. Since manual collection of cash was not totally eliminated at the check posts, drivers continue to feel harassed. They feel that the 100% overload checking capability facilitated by technology, is being misused to collect more speed money than before. As there was no close monitoring at the check posts, drivers have started loosing confidence in the transparency of the system.
- ii. The maintenance contract ran into problems of renewal. The long delay in settling this has put the systems out of gear (to the advantage of vested interests). Many technologies, which were meant to minimize manual interventions in the collection process, were bypassed causing harassment to the transporters.
- iii. The high potential that existed with the deployed technology could not be fully utilized. While several services through integration of vehicle databases are possible, currently only penalty collection for over-loaded vehicle is operational. If this continues, the expensive technology is likely to become obsolete even before deriving complete benefit. Government need to identify, prepare and place an enthusiastic project champion to pursue further work on the project.

Summary of Experiences and Observations

The Information and Communication Technologies have facilitated the design of solutions to deliver government services for social development at the door step of rural poor. Successful ICT projects involved, in the design process, all stakeholders such as government officials, legislators, regulatory agencies, citizens, voluntary organizations, technology consultants and vendors, academics, researchers, funding agencies, and media. Most of these were accomplished using the public-private-partnership (PPP) model. The benefits derived from such projects were very significant as seen from the above case studies.

Many solutions in the project phase have ambitiously packed several services and were launched successfully under the dynamic leadership of project champions. While these projects offered impressive results during the tenure of the project champions, they slipped in performance after their transfers. Some projects could not retain private entrepreneurs due to poor revenue realization and inadequate quality of responses by the government departments offering the services. Thus, the government as well as project champions need to pay due attention to the organizational, commercial, and legal sustenance issues of these projects. Special emphasis is

needed in working out revenue models, ensuring the full implementations through appropriate tenure appointments of project champions, ensuring effective monitoring and maintenance of systems.

Based on these observations and other experiences, we consider the following as major factors responsible for successful implementation and sustenance of ICT projects for social development:

- Degree of efficiency and transparency demonstrated in citizen services
- Extent of reduction in cost and improvement of convenience for citizens
- Extent of reengineering and improvement of back-end services
- Extent of Integration of backend processes with front-end and web site
- Degree of employee involvement and change management
- Amenability for Public Private Partnership (PPP) arrangement
- Strength of PPP arrangement in the application development
- Strength of PPP arrangement in the service delivery
- Enhancement of Revenue for the government and the service provider
- Technological robustness of the project

A detailed discussion on these factors, more related issues and their assessment is presented in the report: "E-Goverance Assessment Frameworks", jointly developed by CEG-IIMA and NISG, for MIT, Government of India⁵.

References

- [1]. CEG, IIMA, "Dairy Information Services Kiosk and Dairy Portal", Proceedings of CEG Worksop at IIMA, <u>http://www.iimahd.ernet.in/faculty/centers_egov_a.htm</u>
- [2]. CEG, IIMA, "Citizen Services Portal", <u>http://www.iimahd.ernet.in/faculty/centers_egov_a.htm</u>
- [3]. CEG, IIMA, "An Evaluation of Gyandoot", http://www1.worldbank.org/publicsector/bnpp/Gyandoot.PDF, World Bank, 2002
- [4]. CEG, IIMA, "Evaluation of Computerized Interstate Check Posts of Gujarat State, India", http://www1.worldbank.org/publicsector/bnpp/Gujarat.PDF, World Bank, 2002
- [5]. Rama Rao, T.P., Venkata Rao, V., Bhatnagar S.C., and Satyanarayana J., "E-Governance Assessment Frameworks", <u>http://egov.mit.gov.in</u>, E-Governance Division, Department of Information Technology, May 2004.