Research Note

Electronic Government and the Rural Poor: The Case of Gyandoot

Abstract

In the poor and drought-prone rural district of Dhar in Madhya Pradesh, India, Gyandoot has tried to make government services more accessible to villagers through information and communications technology (ICT) since January 2000. Two recent surveys of this e-government project allow us to evaluate whether the local population is benefiting. Main findings are that service satisfaction is quite high, but usage is low, and Gyandoot is not reaching the poorest people. We conclude that much of the potential benefits of e-government are not being realized. Lessons for ICT projects that intend to benefit the rural poor include the use of appropriate technology, implementation of the project by agents who have incentives to serve the poor, community participation and ownership, availability of pro-poor services, and campaigns to raise awareness.

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Introduction

Much has been said and written about the potential use of information and communications technology (ICT) by government agencies to transform relations with citizens and businesses. Increased transparency, less corruption, better delivery of government services, greater government responsiveness and accountability, and empowerment of citizens—especially poor ones—are commonly cited among the possible benefits of electronic government (e-government) (World Bank, n.d.).[1]

However, much of the literature has so far been based on anecdotal evidence rather than a systematic evaluation of the impact of e-government projects in the field. This has been particularly true in the case of developing countries, and even more so of rural areas within those countries.

This case study uses quantitative and qualitative data collected by two surveys of Gyandoot—a project in a drought-prone rural district of Madhya Pradesh, India—to assess whether the potential of e-government is being realized on the ground and, in particular, if and how poor people are benefiting from it.[2] Findings from the two surveys are complemented with observations from other evaluators that visited the project (Bhatnagar & Vyas, 2001; Khotari, 2002; Sustainable Initiatives, 2003).

One survey was conducted in May 2002 by the Electronic Governance Centre, Indian Institute of Management Ahmedabad (CEG-IIMA) under

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1. *E-government is concerned with improving access to government functions, be they services or information. The term thus differs from e-governance, a broader concept covering the use of the Internet by politicians or political parties to elicit views from their constituencies or the publishing of views by civil society organizations (Bhatnagar, 2003).*
2. *In the rural Indian context, "poor people" broadly refers to the landless, small and marginal farmers, scheduled tribes, scheduled castes (dalits), and female-headed households (IFAD 2002). In Dhar, about 60% of the population is said to live below the poverty line (Jafri et al., 2002).*

the umbrella of the World Bank's Governance Knowledge Sharing Program (GKSP). Although the amount of data collected by the CEG-IIMA survey is insufficient to obtain statistically significant results (CEG-IIMA, 2002), the survey represents one of the first attempts at evaluating an e-government project in the field in India. The other is a survey of Gyandoot conducted by Indian researchers in collaboration with the Overseas Development Institute (ODI) in mid-2001 (Jafri, Dongre, Tripathi, Aggrawal, & Shrivastava, 2002).

Government Services in Rural Areas of India

In India, as in much of the developing world, it is not uncommon for rural villagers to travel long distances to government district headquarters to request copies of public records, submit applications, meet officials, or seek information regarding prevailing prices in commodity markets. This involves the loss of a day's income as well as the cost of transportation. Once at the government office, the relevant record, information, or official could be unavailable, forcing repeated visits and additional expenses. In effect, government officials working with paper records enjoy a monopoly over information. Villagers may also face discomfort, harassment, and corruption from public officials, or are often given incorrect information about government programs or market prices (Sharma & Yurcik, 2000). In fact, compared to middle- or upper-class citizens, the poor end up paying a disproportionate share of their income on bribes.

Gyandoot

In the Dhar district of Madhya Pradesh, Gyandoot—a government-owned computer network—has been trying since January 2000 to make government services more accessible to villagers.[3] Gyandoot aims to reduce the amount of time and money people spend trying to communicate with public officials

and seeks to provide immediate, transparent access to local government data and documentation through a network of 38 telekiosks (*soochanalayas*).[4] Information and services are offered for minimal fees[5] and include the list of people living below the poverty line,[6] prices of several agricultural products in various cities beyond the local market, a public complaint line for reporting government-related problems, as well as applications for caste, income, and domicile certificates. Telekiosks are placed in villages which hold weekly markets, or are located on major roads, to facilitate access by people in neighboring villages. They are operated by local entrepreneurs (*soochaks*) who have at least 10 years of schooling.

How the System Works

Gyandoot has computerized only the front-end of government services; in most cases, citizens submit applications online and have to go back to the telekiosk for a response. Back-end processes, at government department levels, are not computerized. Printouts of the applications, requests, and grievances are sent to government departments for further action, except for a couple of departments that are accessible by e-mail. Data entry operators then enter responses from departments into the Gyandoot Intranet. Citizens get a response in a maximum timeframe of seven days. In the case of grievances, the central Gyandoot office follows up to see whether grievances are being addressed. Each week Gyandoot's program manager meets with the district collector, who reviews some of the grievances and follows up with agencies if there is no response or the response is inadequate. Licenses and certificates have to be collected from the government department or are mailed to the citizen, and the *soochaks* help citizens in the collection process.

Project Governance

Gyandoot operations are coordinated by a society, the Gyandoot *samiti.* The Dhar district collector is the ex-officio chairman of the *samiti,* and the CEO

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3. Gyandoot literally means purveyor of knowledge (Rajora, 2002).
4. Best and Maclay (2002) differentiate between "telekiosks"—facilities that typically have only a single computer and are staffed with an intermediary (as is the case for Gyandoot)—and "telecenters"—which have one or more personal computers and some access to the international telecommunications network.
5. Different rates are charged for access to agricultural product prices (Rs. 5), land records (Rs. 15), income, caste, and domicile certificates (Rs. 10), filing of complaints (Rs. 10), e-mail (rate depending on the number of words), matrimonial ads (Rs. 25), assistance from experts (free), job listings (Rs. 50), weather reports (Rs. 5), and below-the-poverty-line listings (Rs. 10) (Rajora, 2002 and CEG-IIMA, 2002).
6. People included in the below-the-poverty-line list are eligible for various government benefits.

of the *zilla panchayat* is its secretary. The staff who were instrumental in setting up the project, such as the collector, the CEO of the *zilla panchayat,* and the software vendor, have all changed since the inception of the project, and new members are continuing the project. As of June 2002, the Gyandoot team comprised a full-time project manager, an assistant project manager, the National Informatics Centre's district information officer, and four computer operators working for the *samiti* on a part-time basis. The Gyandoot *samiti* does not have the authority, or the financial means, to improve the government departments' information processing methods or the quality of service, as this authority rests only with the state government. Therefore, the Gyandoot *samiti* has limited scope in improving back-end processes.

Gyandoot telekiosks are operated under two models: the *panchayat* (village committee) and the private models. Although both models require entrepreneurship on the part of the *soochak,* in the *panchayat* model the village committee pays for the telekiosk's capital expenditures (space, hardware). Operators have to bear telephone expenses and do not receive a salary, but get to keep 90% of earnings after remitting 10% to the *panchayat.*[7] In the private model the *soochak* is the owner of the telekiosk. *Soochaks* keep all earnings and pay a fixed amount of Rs. 5,000 to the Gyandoot *samiti* each year.

Another difference lies in the selection process: *panchayats* select three people who are sent for training, and one is finally selected as the *soochak* after interviews and a practical examination. In the private model, the entrepreneur who has the capital, or is able to get a loan, gets the job. The ODI survey found that private *soochaks* come from an economically stronger background, belong to higher castes, and have more years of schooling than the *panchayat soochaks.*

Technological Challenges

Setting up an e-government project in a poor rural area is a huge challenge from a technological point of view. Electric power is sporadic in Dhar, with almost 6 hours of load shedding per day and break-downs often lasting between three and four days.[8] Solar-powered cells—which would offer 8–10 hours of backup to Gyandoot's telekiosks—are being considered, but at a cost of about Rs. 75,000 per telekiosk they are hardly affordable solutions. Telecommunication infrastructure in the district is also quite poor, and telekiosks are currently unable to provide voice services, which could provide an important additional source of revenue for the *soochaks.* Most telekiosks (31 out of 38) use slow and unreliable dial-up connections to the Gyandoot Intranet. Seven telekiosks are using CorDECT, a wireless local loop (WiLL) technology developed by n-Logue Communications, a company born out of the Chennai Indian Institute of Technology. CorDECT WiLL has been found to be more reliable by operators, with faster connections and less abrupt terminations. However, when technical problems arise—which happens frequently—only the Chennai-based company can fix them. The CEG-IIMA survey found that CorDECT WiLL connectivity was sometimes down for more than a week. As of June 2002, the proposal to have on-site engineers to maintain the WiLL connectivity had not been implemented.

Evaluation of Gyandoot

Before conducting its evaluation, CEG-IIMA had planned to interview 200 Gyandoot users and 50 non-users. However, after a one-day exploratory study during which CEG-IIMA could not locate any users at the telekiosks and found that *soochanalayas* logbooks displayed low usage statistics, it became evident that obtaining a large sample would be difficult. CEG-IIMA thus decided to cover as many *soochanalayas* as possible during one week of fieldwork and located users anywhere in the villages, not just at the telekiosks sites. After considerable effort, the survey team was able to locate and interview 32 users, 10 government officials, 4 Gyandoot staff, 18 *soochaks,* and 41 non-users (CEG-IIMA, 2002). Even in the case of the ODI survey—whose sample is said to be "probabilistic, multi-staged and independent in each domain of the study"—only a small number of users (40) could be interviewed (Jafri et al., 2002).

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7. Under the panchayat *model, the regular maintenance costs of electricity are borne by the* panchayat *itself (CEG-IIMA, 2002).*

8. The soochak *at Tirla, a village 10 kilometers from Dhar town, estimates that power shortages force him to close the kiosk for up to half its normal opening hours (Sustainable Initiatives, 2003).*

Table 1. Gyandoot telekiosks, June 2002

	No.	%		No.	%
Gyandoot telekiosks	38	100	Number of operational telekiosks	28	74
Panchayat model	22	58	Surveyed	25	66
Private model	16	42	Open at the time of the survey	16	42

Source: CEG-IIMA (2002)

Very Low Usage

Usage of Gyandoot is very low. Out of 38 Gyandoot telekiosks, the CEG-IIMA survey found that 10 were not operational. Many telekiosks serve only a handful of people (1–4) each day. The average for 18 telekiosks calculated over a two-year period was 0.62 users per day. During peak periods, such as release of board exam results, telekiosks may receive up to 20 visits. Although *soochanalayas* are supposed to be open all day, there is no official schedule and hours of operation are left to the *soochaks*' discretion. Operations also depend greatly on the availability of electric power.[9] Of the 25 telekiosks visited during daytime, the CEG-IIMA survey found that 9 of them were not manned by the operator or were closed (see Table 1).

Not only is usage low, but there also seems to be a deterioration in the levels of usage over time. For example, the quarterly average users of a typical *soochanalaya,* as reported by its logbook, went down from 848 users in the first quarter of 2001 to 77 in the second quarter of 2002 (CEG-IIMA, 2002). The grievance redressal system, which was a popular service in the initial stages of the project, has also experienced decreases in usage, possibly reflecting an erosion of people's confidence in the administration's ability to respond (Khotari, 2002).

Distance Is a Problem

Physical distance poses a big challenge to e-government projects in rural areas. Gyandoot is a case in point: the large district sub-units (*blocks*) furthest away from the district capital—4 out of 13 *blocks*— are those which do not have telekiosks or are experiencing most problems. At remote telekiosks, confusion about services is more widespread and awareness levels among villagers are very low. The ODI survey found that 69% of people living in villages where there is a telekiosk are aware of the existence of Gyandoot. Awareness levels drop to 43% in villages located 1.5 to 10 kilometers from a telekiosk (Jafri et al., 2002). Of the 32 users interviewed by CEG-IIMA, 27 lived no further than 1 kilometer from the telekiosk, and only 2 lived 10 kilometers or more away. Moreover, at remote telekiosks, some *soochaks* have stopped handling certificate requests because they involve a lot of traveling for little remuneration (Khotari, 2002).

The Poor Are Not Participating

The rural poor generally have minimal interaction with government institutions, are not aware of Gyandoot, and are not making much use of its services. According to the ODI survey, only 31% of poor people are aware of Gyandoot, while awareness levels jump to 77% among the rich.[10] The ODI survey also found that out of 221 poor people surveyed, only 9 (4%) used Gyandoot. None of the 16 daily wage laborers surveyed by CEG-IIMA were aware of Gyandoot. Thus, most telekiosks end up serving the middle- and upper-rural classes, rather than poor laborers or landless farmers. However, when the poor are told about Gyandoot, they request more information about it and state they would visit the telekiosks to use its services. In the words of a landless laborer: "For a caste certificate costing Rs. 10, I had to pay Rs. 50 in bribes. Had I known about Gyandoot, I would have used it."

Gender and caste are also barriers. Women represent between 8% (ODI survey) and 17% (CEG-IIMA survey) of telekiosk users, and say they are not comfortable visiting telekiosks. The low number of women users can be attributed to the social structure of Dhar, which confines women to their homes and does not encourage their participation in business or public affairs (IIMA, 2003). All of the 12 women non-users interviewed by CEG-IIMA mentioned traditional measures of gender segregation

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9. When surveyed, 35% of the telekiosks did not have electric power, and 10% did not have power for more than a day (CEG-IIMA, 2002).

10. The ODI survey classifies people as "poor," "medium," or "rich" on the basis of house ownership and type, source of drinking water, land holding, main and "side" occupation, and capital assets owned (Jafri et al., 2002).

(the *purdah*) as the main reason for not visiting Gyandoot, and stated that a separate section for women would allow them to access the telekiosks. As of June 2002, there were only 2 women *soochaks,* both operating *panchayat*-owned *soochanalayas.* The CEG-IIMA survey also noted that 5% of non-users perceive caste as a major barrier to the use of Gyandoot's services, and the ODI survey found that only 5 of the 40 users surveyed belonged to lower castes ("scheduled castes").

Demanded Services Are Few

Gyandoot offers about 20 services. However, only a handful of them are requested (see Table 2). Of those in demand, only a few—such as grievance redressal, applications for income, domicile, and caste certificates, or information regarding the list of people falling below the poverty line—can benefit the poor directly. The most-requested service is information on agricultural prices. For a fee of Rs. 10 farmers can get a printout of minimum and maximum prices for a specific product, as well as data on quantities traded. This service is mostly used by the bigger farmers willing to take risks and travel to distant cities to make a profit. Many of the big farmers mentioned that they were able to make a larger profit because of Gyandoot, although in a couple of cases they actually lost money because prices on Gyandoot had not been updated. When they got to the city they found out that prices were three days old. Instead of spending Rs. 10, small farmers simply make a local phone call to the Dhar *Mandi* office for Rs. 2–3 and ask for the price of products in the local market. Other services in demand include applications for income, domicile, and caste certificates, which are often needed by poor people to get government services and benefits. Applications for driving licenses are also offered, but are clearly not a service focused on the poor. Sending grievances through the Intranet is also a requested service. However, almost no one uses Hindi e-mail, which allows to users send messages within the Gyandoot Intranet, but not to the Internet.[11]

Users Are Satisfied

Although Gyandoot's reach is limited, its few users are satisfied with the services. Users perceive that Gyandoot saves them time and generally costs less than regular services. They also feel there is less cor-ruption and harassment on the part of government officials. In terms of time and cost savings, almost all of the 32 users surveyed by CEG-IIMA are satisfied, rating Gyandoot services with a 4 on a scale of 1 to 5 on both counts (Table 3). Of the 40 users surveyed by ODI, 31 (78%) are satisfied with Gyandoot services.

About 50% of users surveyed by CEG-IIMA perceive less corruption and less harassment—at least for some of the public services that are available through Gyandoot, including income, caste, and domicile certificates. Reasons cited for this positive impact following the introduction of Gyandoot include greater accountability of government officials (25% of users), reduction in bureaucratic power (20%), honest *soochaks* (20%), monitoring by the district collector (15%), and easy access to reliable information (15%). In the words of a farmer from Undeli village, located west of Dhar town, "I came to know from a friend that copies of land records are available from Gyandoot. Had I gone to the sub-district office, I would have had to pay 50 rupees to the clerks. I would have been hassled and would have had to wait 8 days to get the copy of the land record. From Gyandoot I got the copy for 20 rupees within 2 days" (Sustainable Initiatives, 2003). In the case of the grievances redressal system, however, 70% of users are not happy about the service because complaints are only responded to, but seldom solved. Other sources of dissatisfaction include a lack of job postings on the online employment module and difficulties in selling bullocks online (Jafri et al., 2002).

Soochaks' behavior is highly rated, according to both the ODI and the CEG-IIMA survey. Most users describe telekiosk operators as cooperative, helpful, and polite. Where *soochaks* are dynamic and results-oriented, villagers cite having an educated and enterprising person on their side as a big advantage when they need to pick up certificates at government offices. In the words of a student using the telekiosk in Tirla, "The kiosk manager is a very cooperative person. He has helped us solve a number of our problems. The kiosk is a very good service for us, it is very, very useful" (Sustainable Initiatives, 2003). There are, however, complaints regarding a couple of *soochaks* who are not helpful in explaining services offered by Gyandoot—or do not offer

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11. *E-mails sent within the Intranet can only reach the 38 telekiosks that are part of the Gyandoot network, rather than locations nationwide.*

Table 2. Usage of services, June 2002

Service	Number of Survey Respondents Who Have Used the Service	Service	Number of Survey Respondents Who Have Used the Service
Agricultural prices	35	*Khasra nakal avendan* (land records)	6
Advisory module	24	Income certificate	3
Grievance redressal	15	Board exam results	1
Caste certificate	10	Forms for government programs	
Driving license	10	Landholder's passbook	1
Domicile certificate	7	Rural Hindi email	1
Employment news	6		

Source: CEG-IIMA (2002)

Table 3. Perceptions of 32 users on cost and time effectiveness of service delivery, June 2002

Service	Cost		Time	
	Rating (1–5)	Respondents	Rating (1–5)	Respondents
Forms for government schemes	5.0	1	5.0	1
Khasra nakal avendan	4.5	4	4.5	4
Landholder's passbook	4.5	2	4.0	2
Advisory module	4.3	3	4.7	3
Driving license	4.2	9	4.1	9
Employment news	4.0	2	4.0	2
Agricultural prices	4.0	9	3.8	13
Grievance redressal	3.8	4	3.8	5
Domicile certificate	3.2	6	3.2	6
Income certificate	3.0	3	3.3	3
Caste certificate	2.8	4	3.5	6
Board exam results	—	—	5.0	1
Weighted average	3.8		3.9	

Source: CEG-IIMA (2002)

some of them at all—and forbid people of lower castes from visiting the telekiosk. Furthermore, it has been noted that some *soochaks* double as agents, offering certificates at fees higher than Gyandoot's official rates, albeit at competitive rates (Khotari, 2002).

Revenues Are Insufficient

Gyandoot services are not providing sufficient income to *soochaks.* The CEG-IIMA survey found that total revenue from Gyandoot services was approximately Rs. 150 per month per telekiosk over a pe-

riod of 2 years (see Table 4). ODI estimated revenues at Rs. 300 per month. The Gyandoot Intranet was set up at a total cost of Rs. 2.5 million. The average cost incurred to establish a telekiosk is Rs. 75,000 and operational costs are estimated at Rs. 1,000 per month (Bhatnagar & Vyas, 2001).[12] Considering the magnitude of the initial investment and the servicing costs, revenues from Gyandoot alone are clearly too low to sustain operations. Thus, besides working on e-government services, *soochaks* create and manage databases, work on data entry, offer PC training,

12. This includes Rs. 50,000 for a PC, Rs. 10,000 for a color monitor, Rs. 9,500 for a printer, Rs. 3,500 for uninterrupted power supply (UPS), and Rs. 2,000 for a modem (CEG-IIMA, 2002).

Table 4. Revenue from services, 18 telekiosks, May 2000-May 2002

Service	Revenues (Rs.)	Service	Revenues (Rs.)
Forms for government schemes	11,350	Income certificate	5,100
Driving license	7,950	Domicile certificate	4,410
Board exam results	6,900	Landholder's passbook	1,770
Grievance redressal	5,850	*Khasra nakal avendan*	1,100
Agricultural prices	5,600	Rural Hindi email	200
Caste certificate	5,110		

Source: CEG-IIMA (2002)

and provide voice, fax, copy, Internet, and other services.

Project Design Lessons

Merely setting up e-government projects in rural areas of developing countries does not guarantee that the poor will access its services and benefit. How can we ensure that these initiatives reach poor men and women with relevant services?

Appropriate Technology

ICT in poor rural areas can be catalysts for change. However, some prerequisites are needed to make their introduction cost-effective and sustainable, including a stable electric power supply, good connectivity, and human capability to manage hardware and software. If these essential factors are not present, it may be better to look for low-tech, more appropriate solutions. In the case of Gyandoot, for instance, using radio—which is cost-effective and has a large reach in rural areas—may be a better way to inform farmers about agricultural commodities prices (Bhatnagar & Vyas, 2001; CEG-IIMA, 2002). Given poor connectivity, databases that can be accessed offline and delivering certificate and other document requests to government offices on floppy disks may be alternatives.

Community Participation and Ownership

Before launching ICT projects, the service and information needs of a community should be thoroughly assessed and ICT applications developed in collaboration with local staff. Local ownership fosters the success and resilience of ICT and e-government projects. Outside control and top-down approaches, on the other hand, often waste resources in the initial periods of projects, endangering their future sustainability. Rapid, participatory rural appraisals (PRAs) and other survey instruments have been used for several years to ensure community ownership of development programs. These tools should be used to ensure that ICT applications respond to the priorities of the community and include gender concerns. During the design phase of Gyandoot, community participation and ownership were considered and meetings were held with villagers to gather their input (Bhatnagar & Vyas, 2001). The Information Village program implemented by the M. S. Swaminathan Research Foundation (MSSRF) in Pondicherry has also demonstrated how crucial PRAs are to the success of ICT projects that intend to favor poor people. The MSSRF used PRAs and paid particular attention to gender issues in order to identify content and information for each village, as well as to clarify the rights and responsibilities of the villagers and the implementing agency. As a result, a village database which addresses local priorities was created, poor families became major users of the "knowledge centers," and women are participating (Balaji, Rajamohan, Rajasekara Pandy, & Senthilkumaran, 2001; Kanungo, 2002; MSSRF, n.d.). The Honey Bee Network, with its database of solutions to local development problems, is another good example of the creation of relevant content for the lives of poor people. Many of the innovative solutions presented in the database are simple but can significantly improve the efficiency of farm workers, small farmers, and artisans (Gupta, Koradia, Prakash, Sinha, & Vivekananadan, 2001; Bhatnagar & Schware 2000).[13]

In the case of e-government projects, the local

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13. Innovative solutions presented in the database include a tilting bullock cart, a simple device to fill nursery bags, an improved pulley for drawing water, and a gum scrapper to enable women to collect gum from thorny bushes or trees. The database also features a large number of small machineries, herbal pesticides, veterinary medicines, new plant varieties, and agronomic practices developed by small farmers.

administrative and political actors need to be involved in the implementation of the project, otherwise the likelihood of failure increases dramatically. Information technology officers working on the CARD (Computer Aided Registration Department) e-government project in Andhra Pradesh have learned that it is important to develop constituencies both outside and within the political and administrative system. By involving citizens, the administration can, among other things, ensure that the introduction of computerization does not become indivisible from the political fortunes of the party in power. Project managers can secure the support of government staff by convincing employees that introduction of ICT does not necessarily mean layoffs, and training them on the use of technology (Balakrishnan & Ramnathan, 2000).

Intermediaries and Incentives

In rural India, direct ownership and use of ICT—for instance through a PC with Internet access—applies only to a small fraction of the population. Although the availability of content in local languages and the use of graphic and voice interfaces can make e-government applications more accessible to poor people, illiteracy and low levels of education are powerful obstacles to the use of computers and other ICT tools.[14] It follows that, in most cases, poor people have to rely on a human intermediary to access e-government applications, in what is termed a "reintermediation model" (Heeks, 2001). The profile of the intermediaries who add human skills and knowledge to the presence of ICT is thus critical for projects that want to reach the poor (Heeks, 1999). Many of the Gyandoot telekiosk operators—who are rated highly by users—are young, educated (some with advanced degrees in computer science),[15] and very enthusiastic about the potential of ICT for social change. They are also emotionally attached to the rural communities to which they belong. Many *soochaks* worked for awhile in the cities, away from their communities, but came back to work in a telekiosk when given an opportunity.

In order to bring e-government to poor people, intermediaries also need to have an economic incentive to serve them. However, in the case of private Gyandoot telekiosks, incentives to serve the poor

seem very low. There, in fact, Gyandoot services are a negligible source of income for *soochaks,* who focus on higher-income clients and lack the incentive to serve the few poor customers they have. Consequently, telekiosks under the private model appear to be leading to brand dilution. Many such telekiosks act as long-distance phone booths or computer training centers, even a barbershop, and Gyandoot posters and rates are often not well displayed. The CEG-IIMA survey found that half of the 10 private *soochanalayas* visited did not have a service display board. By contrast, the *panchayat* model looks more promising. According to the ODI survey, all *panchayat soochaks* see Gyandoot as a source of economic benefit, possibly because of their more modest background compared to that of the private *soochaks* (Jafri et al., 2002). However, problems still arise in the *panchayat* model, especially if the community did not participate in the decision to open a telekiosk or if the *soochak* got the job thinking that it would lead to a permanent government position.

Pro-poor Services vs. Financial Sustainability

The movement to bridge the digital divide has "an inordinate amount of exaggeration and wishful thinking" (Keniston, 2001), which often avoids the hard questions. The dilemma that is currently haunting ICT projects in developing countries is how to serve the poor while being financially sustainable. Unfortunately, there is no clear solution to this conundrum. The case of Gyandoot does not provide an answer because it has not reached either goal. However, one lesson can be extracted from its experience: projects need clear, realistic, and achievable objectives. The case of the Information Village project in Pondicherry is illustrative. Its main objective is social development; thus, while it recognizes financial sustainability as a desirable goal, it asserts that "rural information systems initiatives should neither pressure themselves nor should they be pressured into unreasonable timeframes to demonstrate sustainability" (Kanungo, 2002). If the primary concern of an ICT project is to reach marginal sectors of society, it is preferable to focus on a limited number of well-run, pro-poor services, rather than offer a great number of services of use only to middle and

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14. In Dhar, for instance, the 2001 Census of India reported an illiteracy rate of 34% for men and 61% for women (CEG-IIMA, 2002).

15. Of the 18 soochaks *surveyed by CEG-IIMA, 2 are post-graduates, 12 are graduates, and 4 have a high school diplomas (CEG-IIMA, 2002).*

upper classes. Given that e-government services, such as issuance of income, caste, or domicile certificate and below-the-poverty-line listings are characterized by low charges and infrequent or one-time usage (Kaushik & Singh, 2002), a pro-poor approach may not lead to financial sustainability. Voice and text communication services appear to be the best candidates that telekiosks could offer to serve poor clients and at the same time "solve the sustainability puzzle." Information systems that connect people to each other despite barriers of time, distance, literacy, and ownership of a telephone or PC seem, in fact, to be in high demand among poor rural communities (Best & Maclay, 2002).

Campaigns to Raise Awareness

Raising awareness among the poor about the potential of e-government is also key. In Dhar, although some efforts have been undertaken to raise awareness—posters with pictorial depictions of the services have been prominently displayed outside Gyandoot telekiosks—more could be done without spending great amounts of resources. Word of mouth, for instance, is often a powerful tool for publicity. The leaders of poor communities, as well as school children, could be brought to the telekiosks for a demonstration showing what e-government can do for them (for example, obtaining a birth or domicile certificate). It is important that poor people feel comfortable accessing e-government, given than they typically face discomfort and harassment when they visit government offices. In this respect, the location of the telekiosks is also important. Telekiosks should be located near places routinely visited by poor people, for instance, in ration distribution shops.

Furthermore, the provision of content that is not directly related to development goals, such as news, matrimonial ads, and entertainment information, could be a winning strategy to raise awareness about telekiosks. A survey of five villages in Andhra Pradesh, Uttar Pradesh, and West Bengal found that entertainment programs, together with news, are the types of information most frequently accessed by the rural poor (Pigato, 2001).

Conclusion

Reaching the poor and realizing the potential benefits of e-government are difficult endeavors. In the case of Gyandoot, these potentials have not yet been realized. Nevertheless, the Gyandoot experience teaches important lessons for e-government and ICT projects that intend to benefit the poor. A necessary but not sufficient condition is the use of appropriate technology. Although low-cost technology is a catalyst for change, it does not guarantee that the poor will make meaningful use of ICT. Community participation and ownership, as well as implementation of the project by grassroots-based organizations who have the appropriate incentives to work with marginalized groups, are equally important. Offering services that are relevant to poor people and conducting awareness-raising campaigns are also key ingredients to benefit the poor. ■

Table A1: Abbreviations and acronyms

CEG-IIMA	Centre for Electronic Governance, Indian Institute of Management, Ahmedabad
GKSP	Governance Knowledge Sharing Program
ICT	Information and communications technology
IFAD	international Fund for Agricultural Development
MSSRF	M. S. Swaminathan Research Foundation
ODI	Overseas Development Institute
PRA	Participatory rural appraisal
WiLL	Wireless in local loop

Table A2. Glossary

Block: A large sub-unit in a district

Khasra nakal avendan: A paper document, issued by the district administration, containing a description of a land parcel, its ownership details, crop description, and sources of irrigation; a unique survey number, assigned by the government, identifies each *khasra*

Mandi: Major agricultural marketing center in rural areas of India

Panchayat: Village committee

Samiti: A committee

Soochanalaya: A telekiosk registered with the Gyandoot Samiti; it has a computer with connectivity to the Gyandoot Intranet server

Soochak: The person who owns or manages a Gyandoot Soochanalaya

Zilla Panchayat: A decentralized council of 20–25 members, operating at the district level of the state

US$1= Rs. 45

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