



CHAPTER 16

TELECENTRE EVALUATION: ISSUES AND STRATEGIES

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INTRODUCTION

Telecentres are intended to meet the evolving information, communication and learning needs of their communities. It is therefore important to make a systematic effort to monitor the costs and usage patterns and to measure the impact of telecentre usage. As Schaffenberger (1999a) observes, the need for monitoring and evaluating telecentre efforts has been raised in multiple conferences and meetings, but unfortunately the rhetoric has not always been matched with the necessary energies and resources. Budget allocations for monitoring and evaluation are often modest or non-existent, and all too often those managing the projects end up reporting that setting up the centres consumed all of the available time and money. This chapter explains why evaluation is important and proposes frameworks and methods for designing and carrying out evaluation of telecentre initiatives.

THE PURPOSES OF EVALUATION

Evaluation may serve several purposes. *Formative* evaluation relates to process. It can provide feedback on individual telecentres (for example, to identify strengths and weaknesses in an inaugural centre and to provide guidance for a development agency for its next telecentre installations) and on multiple sites, pointing out how well these are working, what changes or improvements should be made and what was learned that could be applied in other similar projects. This information can also be useful to other agencies supporting telecentre projects.

Summative evaluation relates to outcome and impact. For example, did the project achieve its goals and what was learned about the contributions of telecentres and telecommunications to social and economic development? These are usually the most important questions for funding agencies concerned about whether their investments have made a difference, and for decision-makers responsible for budgeting information technology services or establishing universal access policies.

These purposes are related in that the feedback or process information may help to improve projects so that they are more likely to accomplish their goals. Furthermore, some of the data collected about who is using telecentres and for what purposes can be useful both as feedback to the project and for tracing the impacts of projects, as discussed below.

THE ROLE OF INFORMATION IN DEVELOPMENT

Information and the development process

In designing the evaluation of telecentre projects, it is necessary to consider the role of information in the development process. Access to information is critical to development; information and communications technologies (ICTs) are not simply a connection between people, but a link in the chain of the development process itself. There is considerable evidence that access to information through ICTs can facilitate many socio-economic development activities, including agriculture, fisheries, commerce, tourism, shipping, education, healthcare and social services.

In general, the ability to access and share information can contribute to the development process by improving effectiveness, equity and efficiency. *Effectiveness* refers to the quality of services, such as health and education. For example, communication between a village health aide and a doctor may improve the quality of healthcare in the village, and access to interactive training materials for teachers may improve the quality of instruction in the classroom. *Equity* refers to the distribution of development benefits throughout the society and is the key reason that many development agencies are helping to establish telecentres as a means of providing rural and disadvantaged populations with affordable access to information services. *Efficiency* typically refers to the ratio between output and cost. For example, a local merchant who can use a telecentre to order goods can reduce delays in supplying local customers and increase his revenues, and a farmer who can find out how to rid a pest attacking his crops can improve the output from his land. Improved “reach” is another benefit for businesses — for example, potters in Africa, coppersmiths in Nepal and Inuit soapstone carvers and muskox wool weavers in the Arctic are all now reaching global markets via the Internet.

However, none of these benefits occurs in isolation. Those who need to access or share information must have the skills to do so or access to a resource person to help them. Other factors may also have to be in place if people are to benefit from the information, such as access to credit for inventory or spare parts, a transportation system to get goods to market, or a curriculum that can be adapted to new teaching techniques and information sources. Thus, in order to learn how telecentres may contribute to development, not only must we find out whether and how they provide access to tools to create, access and share information, but we must understand what information is needed in the communities in which they’re located, and what other factors may influence how the related activities may affect development from economic, social, cultural and/or political perspectives.

The chain of inference

Many of the developmental goals proposed for telecentres imply causality between their use and specified outcomes. This chain of inference must be made explicit if any causal connection is indeed to be traced between provision of the telecentre and development.

Such a chain of inference may be complex, for telecentres are typically intended to serve a variety of community needs, which may not be as clearly defined as in projects designed for particular sectors or target groups. For telecentres to have an impact on development, at least the following are required:

- Community access:
 - The equipment must be conveniently located.
 - The telecentre must be open at hours when people want to use it.
 - The services must be affordable to the target groups.
- Awareness:
 - The community members must be aware of the centre and the services it offers.
- Skills:
 - The community members must be able to use the equipment or to get assistance in doing so.
- Lack of barriers:
 - There must be no constraints that would unduly hinder people from using the centre (e.g., lack of jobs or entrepreneurial activities; cultural norms that affect certain groups such as women; lack of transport to reach new markets).

Some benefits may accrue directly to individuals using the telecentre, such as being able to help in an emergency by contacting a doctor, or saving time by using telecommunications to arrange transport logistics or to eliminate the need to travel to the city. Other benefits may require more complex types of information-seeking.

Two concepts from diffusion theory of innovations and the impact of communications may be relevant in analysing ICT users and the potential benefits of ICT use:

- *Two-step (or multi-step) flow model* — The user of the innovation may not be the real beneficiary. In the case of telecentres, for example, the user may be the agricultural extension agent, the health worker and the social worker, but the beneficiaries are the farmers, women and children, and disadvantaged groups.
- *Early adopter* — Some people may be more likely to use the innovation sooner than others. With telecentres, for example, that might be the case for people with more education and those with clearly defined information needs, such as teachers, community leaders, artisans who need to find markets, and merchants who need to contact suppliers.

Users and beneficiaries

In attempting to identify and measure the benefits of ICT projects, it is important to consider users as individuals and as members of groups (for example, family, work or professional groups, cultural or religious organisations, political organisations, and so on). Their perceived role as individuals or members of a group may influence their needs for information, the people with whom they communicate, and the sources they contact for information. It may also be important to consider how the demographic characteristics of the users — such as their gender, ethnicity, education level, income level and geographical location — may affect their information needs. To measure the benefits, it will also be important to learn about the purposes for which people use the telecentre.

Most *individuals* are only likely to use ICTs for:

- Emergencies:
 - This application does not depend on education, literacy or any sophistication. However, a decision on where to seek help may depend on those factors.
- Personal needs:
 - To stay in touch with family members, including students away at school, relatives who have gone elsewhere to work, members of extended families living in other communities.
- Entertainment:
 - To socialise with friends, play video games, watch videos, find entertaining Web sites.

The more common *group* applications are:

- Businesses and enterprises:
 - To find information on markets and prices and outlets for products; to arrange transport of products to market; to order supplies and spare parts; to manage accounts; to seek solutions to business problems.
- Government services:
 - To establish links with headquarters, administration, planners.
- Sector-specific applications, such as:
 - Agriculture: To access extension services and databases; to obtain training; to enrol in distance education; to find market information.
 - Education: To access information for class preparation; to help with assignments and research projects.
 - Tourism: To plan itineraries; to make reservations; to enable tourists to keep in touch with families or work.
 - Healthcare: To conduct consultations; to facilitate administration; to access continuing education and training for staff; to conduct public education.
 - Non-governmental organisations (NGOs): To carry out organisational and community development; to facilitate administration; to offer training; to arrange logistics; to gain access to expertise.

Short-term versus long-term impact

One of the dangers in the recent enthusiasm about the role of ICTs in development is unrealistic expectations of significant short-term impact among donors and policy-makers. There may be some dramatic examples of the value of providing access to information — for example, farmers getting better prices for produce, artisans finding new markets, health workers receiving assistance and saving lives. However, much of the impact is likely to take longer and be much more indirect. Better access to more up-to-date information about planting methods may eventually result in better yields and thus more income for farmers, and schools with access to the Internet may produce more graduates prepared to continue with their education or to qualify for jobs. But these effects take time!

While planning evaluation that can capture these longer-term benefits, researchers should look for evidence of telecentre usage that could lead to longer-term impact, such

as women who have learned new skills, NGOs that have been able to obtain relevant information, and entrepreneurs who have obtained information about new markets. These are more likely to be the kinds of changes that can be documented in the first year or two of a centre's operation. Evaluators should be able to document these changes and identify the impacts that could result over time (e.g., new jobs or more trade) and the barriers that could impede longer-term impacts (e.g., lack of funds to continue the project, lack of credit to buy recommended fertilisers or pesticides, and difficulties in employing newly trained workers).

PLANNING THE EVALUATION

Formative evaluation: process and feedback

Each project should build in mechanisms to gauge how well the project is progressing and to provide feedback to the field staff and stakeholders. Specifics will vary with the type of telecentre, but are likely to include much of the following information:

- Facilities:
 - Is the equipment operating reliably?
 - Are the spare parts and technical assistance available when needed?
 - Are the telecommunications links sufficiently reliable?
 - Are there any unforeseen technical problems?
- Staff skills and performance:
 - What skills are needed to operate the telecentre (technical, managerial, information seeking, community outreach, etc.)?
 - Do the project staff have the necessary skills?
 - Has training been provided? Was it useful? Is additional training needed?
 - Are the project staff performing satisfactorily?
- Users:
 - Are the target groups (e.g., women, youth, teachers or entrepreneurs) using the facilities as expected?
 - Have the target groups suggested any changes in training provision, hours of operation, or the roles of project staff that would facilitate usage?
 - Are those other groups who were not targeted but who are using the facilities?
- Applications:
 - Are the facilities being used as expected? If not, what unforeseen circumstances may be hindering usage (e.g., poor or unavailable telephone service, equipment problems)?
 - Are the users trying applications that were not expected? If so, what are they?
- Usage trends:
 - What trends or changes can be observed in how the facilities are used, and in the volume and type of users? For example, are the number of users or frequency of usage increasing? Is there growth or change in the composition of users? Are there significant numbers of users who tried the facilities once but did not return?

Such information — which can be collected through logs, automated telephone or computer records, and interviews with staff and a sample of users is a useful means of making mid-course modifications and sharing experiences with similar projects. For example, in South Africa, telecentre managers have been identified as needing more business training; and in Mali and Uganda, improving the attitude of staff towards newcomers to the telecentres has been identified as important.

Summative evaluation: What difference did it make?

As noted above, the other important function of evaluation is to determine the impacts or effects of the project — that is, to ask “What difference did it make?” One way to approach summative evaluation is to determine to what extent the project achieved its goals. This approach assumes that the project started with explicit goals, or goals that can be easily made explicit from the project plan, and that the goals can be explicated as concrete targets that can be measured or tracked. Identifying goals is further discussed below.

Another way of approaching summative evaluation is to consider who benefited, directly or indirectly, from this access to information or the means to create and share it. If specific target groups have been identified, such as women, young people, local NGOs, entrepreneurs and artisans, answers can be sought to such questions as: How have each of these groups benefited? What might be the cumulative effects of such benefits on the wider community?

Evaluation as learning

Evaluation should be presented as a way of learning about the project’s strengths, the role of the telecentre in the community’s development, and the changes that may be needed. It is most important that it not be perceived as a judgemental exercise by the participants, but as an opportunity:

- to provide feedback to project staff on what is working well and what needs to be changed or improved;
- to plan for the sustainability of the telecentre; and
- to identify successful strategies and lessons that could be shared with other telecentres or networks, and other telecentre projects supported or operated by other organisations.

Evaluation may appear threatening to field staff who may resent someone looking over their shoulders or fear that they are being judged. One way of reducing such fears is to suggest to the staff that what they have learned would be useful to others starting a similar project, asking them for example, “What problems did you face and how have you solved them or tried to solve them?” and “What advice would you have for someone else starting a telecentre like yours?”

Another useful strategy is to involve the telecentre staff in identifying what information would be useful to them and then, rather than relying on outside researchers, training these staff and the user groups to be interviewers and data collectors. In this way, the participants themselves hear from the community and collect information on how many people are using the telecentre, for what purposes and what their views are on the services. The danger in this approach is that the data collection may be biased if the

participants “tune out” any negative feedback. However, if they approach the data collection as a learning process, and if they are trained in asking questions consistently and coding the responses accurately, the evaluation will be much more valuable to them. For example, in the Acacia baseline studies of telecentres in Mali and Uganda, telecentre staff were trained in interviewing and sat in on focus groups, hearing directly from community members about their information needs and perceptions of the telecentre. Similarly, any ongoing monitoring of activity for telecentres (such as usage logs) should be designed in consultation with the staff, showing them how the information collected can be useful for them in monitoring trends in usage and understanding the users’ needs.

Identifying objectives

To plan the evaluation, it is important that the objectives of the telecentre project be understood by all participants. This may sound straightforward enough, but the various stakeholders such as donors, partners, communities and telecentre staff may have quite different objectives from each other. Also, if objectives are too vague or general, such as “empowering local people” or “creating new economic opportunities,” problems may arise with stakeholders interpreting goals differently. Reasonable time frames for achieving different objectives may vary as well. For example, teaching young people to use computers may be accomplished much more quickly than generating new jobs for the community.

To identify the objectives, evaluators may be able to obtain information from existing sources such as project documents. Where such sources are lacking or unclear, evaluators may need to interview representative stakeholders to ascertain their objectives for the project. Either way, evaluators often find that the objectives stated in documents or interviews must be clarified and made explicit before decisions on methodologies, variables and instruments can be made. For example, the Acacia Programme document states that Acacia is designed “to empower sub-Saharan African communities with the ability to apply information and communication technologies [for] their own social and economic development.” Evaluators had to work from this general goal to identify specific objectives for particular Acacia telecentre projects.

One approach to identifying objectives is to ask the various stakeholders: “What would make this a successful project?” Their answers might be, for example, that the project would:

- provide people in the community with access to ICTs;
- train community residents in the use of ICTs;
- see the telecentre being used by target groups (e.g., women, youth, entrepreneurs);
- increase awareness of the importance of information in local development;
- continue to operate past the project phase (often sustainability as an end in itself is combined with one or more of the other goals);
- promote economic development in the community (e.g., job creation, better prices for products, new outlets for products from the community); and/or
- promote social development in the community (e.g., the adoption of practices to reduce disease, improvements in community basic literacy or school completion rates, new job skills).

All of these goals have been proposed for telecentre projects by various stakeholders.

Having made these goals explicit, observable or measurable, the evaluators must then devise a plan to determine to what extent the telecentre project achieved them.

Questions they need to consider include: What does access mean? How should we define sustainability? How can we isolate the effects of the telecentre from other factors that might influence economic and social development?

RESEARCH DESIGN

Beyond anecdotes

There are numerous sources of information on telecentres including Web sites, conference papers and reports from field visits (see the appendix as shown at the end of this book). Many of these sources contain stories and anecdotes that provide useful insights and lessons learned. However, there is to date a lack of systematic evaluation of telecentre projects that could shed more light on common factors across projects and the specific short- and long-term impacts of the centres. A problem with stories is that, being based on assumptions rather than careful analysis, they may lead to unsubstantiated conclusions or over-generalisations. Consider the following statements made about telecentres:

- “Women are more likely to use telecentres if telecentre staff are women (or include women).”
- “The business model makes a difference in development impact. For example, a business-oriented telecentre is likely to contribute less to social and/or political development than one with explicit development goals.”
- “The skills and attitudes of the telecentre staff make a difference in developmental impact. For example, a person trained in tracking down information or a person with community outreach skills may contribute to more developmental use of the telecentre.”
- “Training a core group of users results in more usage of ICTs (or faster take-up by target groups) than a drop-in self-teaching approach.”

All of these are assumptions that may be based on experience at one or more sites, but have not been broadly substantiated. These could, however, be formulated as hypotheses to be tested using a research plan designed to control for extraneous factors.

Testing hypotheses: Research design

Much evaluation of ICT projects is based on case studies. Well-designed case studies can provide evaluators and managers with an invaluable means of understanding the experiences and lessons learned in particular communities. However, they may not address fundamental questions of causality, such as whether the telecentre actually contributed to the creation of new jobs in the community, or whether lessons learned could be generalised to similar telecentres in different locations or to different types of telecentres.

Where there are several telecentre sites or opportunities to track a variety of telecentres over time, it may be possible to gauge longer-term impacts and issues of causality through research designs that are known as “quasi-experimental” (because in field

settings all the extraneous factors cannot be controlled as can be done in laboratory settings). Two of these types of design are “Before-After” and “After Only.” They are not perfect, but are superior to stand-alone case studies in improving the validity and generalisability of findings:

- *Before-After* — Data on specified indicators are collected before and after the installation of the telecentre, and compared.
- *After Only* — Where no baseline information is available, it is difficult to isolate and quantify impacts. However, strategies that can be used here include:
 - retrospection, asking the users to state how they got the information or carried out the task before the telecentre was established; and
 - contrary-to-fact questions such as “If you did not have the telecentre, how would you do this?”

The danger in both of these designs is that they can lead to false conclusions (such as “the telecentre created more jobs”) because they do not control for extraneous factors that might have had this effect anyway, such as a new development initiative or a new road.

Validity and generalisability can be improved by adding a control group:

- *Matching* — Evaluators can gain better insights into causality if they can add a group of sites that are similar in population size, isolation and economic base and if they can collect the same data at all of these sites.
- *Random selection* — It may be possible to use randomly selected sites if there is a large data set to draw from, or if the project can be designed to randomise the choice of where the telecentres will be installed. However, this approach is quite rare and can only really be conducted in countries such as Senegal which have a very large number of private phone shops or cyber cafés, or which have a large existing database as generated by a baseline study in South Africa.
- *Controls using various forms of telecentres* — In countries where there are phone shops with ICTs, private telecentres and cyber cafés, these sites could be included in the sample to test the hypothesis that the business model makes a difference in usage and benefits.
- *Multiple measurements* — Whether or not a control group of sites can be included, collecting data at several points after the telecentre is installed is likely to provide better insights into causality than any single “After Only” data collection. Also, later waves of data collection will help to determine whether usage of the telecentre dropped off after initial interest, or whether demand and applications changed over time.
- *Sampling* — In collecting community data, using a systematic approach in drawing a sample (rather than interviewing the first people encountered or people known to the interviewers) strengthens the validity of the data. There are many approaches to drawing samples that are appropriate for telecentre evaluation.

As well, several steps must be taken to ensure that the data collected are reliable (i.e., that there are accurate responses to questions that were clearly understood by the respondent):

- *Pre-testing* — Instruments must be carefully designed and pre-tested to make sure that the respondents understand the questions. For example, if the code sheets specify “Youth” or “Adult” rather than asking for the respondent’s age, how are these terms defined and interpreted?

- *Training* — For field surveys, interviewers must be trained in asking the questions and coding the responses. For example, they must learn to ask the questions consistently, and to avoid asking leading questions or making assumptions about how the respondent would answer. They must also learn to follow the sampling guidelines rather than choosing people they know or skipping certain people because they feel that those individuals wouldn't know the answers or might say the same thing as the last person interviewed.
- *Spot checking* — Log sheets or interview forms must be spot checked to ensure that they are coded correctly and completely. All staff should know how to complete them and should understand that daily records must be kept, regardless of whether the manager is there or not.

CONTENT

Content availability varies substantially among telecentres. Some telecentres have resource materials such as newspapers, magazines, books and videos onsite; others only provide access to content elsewhere, for example, through the Internet. Telecentres may also provide the means for local people to create or disseminate their own content, through desktop publishing of flyers, announcements, newsletters and so on.

For evaluation purposes, it is useful to document:

- the types of content available (e.g., newspapers, books and videos) and how these are used;
- the types of content produced by the people using the centre (e.g., flyers for events, price lists for shops, announcements for weddings and funerals, or newsletters).

Researchers could then interview a sample of people who used or produced this content to find out how it was used, what difference it made to them personally or organisationally and what the demand was for additional content and media. For example, the telecentre in Nakaseke, Uganda, described elsewhere in this book, provides newspapers that are popular with older students and literate adults, as well as texts and reference books related to secondary school courses. Videos are popular with children, and the project manager uses videos of interest to the community as a means of introducing them to the facilities in the telecentre. Television sets and video recorders have been provided to telecentres operated by the Universal Service Agency in South Africa. It would be useful to track video usage (content, number of users, age group and gender of users, etc.) and to determine whether they can also attract additional users to the telecentres.

SUSTAINABILITY

The evaluation should include an assessment of the sustainability of the activity past the pilot project phase. Of course, findings on benefits and impacts will be important here. If the project has not had much impact on the target population or has failed to achieve its primary objectives, its future sustainability may be of little consequence. However, where projects have achieved their objectives or are well on the way to doing so, data should be collected and analysed as a means of determining the projects' future viability. For example, information on the following is important to have:

- Costs and revenues:
 - What revenues does the project generate now? Are these markets likely to remain stable, increase or decrease? (Reasons for the latter might include

installation of additional public telephones in the community, the hiring of additional providers of some telecentre services, and the purchase of computers and modems by the wealthier individuals in the community or the business patrons.)

- What were the start-up costs of equipment, site, training, etc.?
 - What are the ongoing operating costs of the telecentre in terms of personnel, supplies, spare parts, rental, utilities, technical support, etc.?
 - Are the projected revenues sufficient to cover the ongoing costs?
 - What other sources of revenue might the project develop, for example, selling additional services, finding major clients as underwriters, and building operating costs into an organisational budget?
 - Are there ways of reducing costs (e.g., by getting discounts from telecommunications operators, or sharing equipment or staff)?
- Facilities:
 - Has the ICT equipment proved reliable in field settings?
 - Are the power supplies and telecommunications networks sufficiently reliable?
 - Is timely technical support available when needed?
 - Staff:
 - Do the current staff have the skills to continue to operate the facilities?
 - Is the current project management committed to continuing with the project?
 - Are there others who could be recruited and trained to work on the project?
 - Commitment:
 - Is the activity a priority for the target groups (e.g., school district, health ministry, community)? That is, is there a strong commitment from the project's constituents to minimise the chance of the project dying or being left in obscurity, and of equipment being vandalised?

Such analysis is important, regardless of whether the telecentre is assumed to be viable as a stand-alone enterprise by the end of the project period, or whether it is expected that ongoing support from donors or government agencies will be required. For example, even if the equipment is donated, it will be important to monitor the operating costs in terms of repairs and spare parts and estimate a realistic depreciation schedule to determine when it will have to be replaced. If buildings or other utilities are donated, it is also important to estimate their real costs to ensure that these are included in estimating ongoing operating costs. And if staff are paid by project funds, it is important to estimate their costs in terms of salaries and benefits. The value of volunteer assistance should also be calculated.

This information is valuable, not only to the donors in estimating the real costs of an operational telecentre, but to the project managers. It helps them determine what revenue will be required to sustain the telecentre and what strategies will be needed to generate that revenue — such as sales of services alone or a mix of sales, donations, financial support and so on. Innovative strategies to reduce costs and increase revenues include implementing a volunteer programme with local community groups or schools as in Nabweru, Uganda, and sharing facilities with other organisations such as local government offices, schools, or community radio stations. Branching out to provide new services is another option. For example, the Timbuktu telecentre is also an Internet

service provider that can provide Internet access to patrons who decide to buy their own computers, and desktop publishing of wedding and funeral announcements has become a popular service in several South African telecentres.

LINKS TO POLICY

Evaluators should bear in mind that data from telecentres can be valuable for telecommunications policy-makers and regulators. Interviews with officials in ministries of communications and regulatory bodies could help to identify key issues and information needs. Many countries are attempting to implement universal service or access policies. Evaluators could provide information that would show whether telecentres are in fact a viable means of providing rural and community access to advanced services such as the Internet. They could also provide the specific information needed for planning purposes, such as that about traffic volumes, revenues from telecommunications services and communities of interest.

Some of these data may also be useful for oversight of the telecommunications sector. For example, data on line quality, outages and time required to restore service can help regulators monitor the performance of licensed telecommunications operators.

DISSEMINATING RESULTS

The philosophy of evaluation as learning should also be reflected in how the information gained is shared with the various stakeholders. Simply sending stakeholders a copy of a research report may not be sufficient. The evaluators should be prepared to return to the community and meet with the telecentre staff and local stakeholders to explain the findings. They may also be able to help the telecentre staff think about the changes that could be made in response to the feedback, such as providing outreach to underserved target groups, organising more opportunities for training new users, and extending the hours of operation. As well, evaluators may be able to suggest other opportunities for learning and sharing information, such as workshops for managers and staff and exchange visits between similar projects and centres.

The evaluation results should also be made available to other stakeholders — for example, funding agencies, government ministries and NGOs. Presentations at conferences, papers in journals, and postings on the Web can also help to disseminate the findings to others interested in telecentre evaluation around the world.

Much of this paper is based on research carried out while the author served as Co-ordinator of Evaluation and Learning Systems, Acacia Programme, International Development Research Centre (IDRC) during 1998 – 99. For more information on Acacia, see www.idrc.ca/acacia.

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