



## CHAPTER 1

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# TELECENTRES — EXPERIENCES, LESSONS AND TRENDS

*Sonja Oestmann and Andrew C. Dymond  
Intelecon Research & Consultancy Ltd.*

### INTRODUCTION

Telecentres have been hailed as the solution to development problems around the world because of their ability to provide desperately needed access to information and communication technologies (ICTs) (Gómez and Hunt 1999). A significant number of such centres have been piloted and implemented by various governmental and development agencies across the globe.

Telecentres have considerable potential for narrowing the “digital divide” in remote, rural and otherwise disadvantaged communities. They can be especially useful in helping developing countries and rural areas take advantage of the information economy, access education, government information, healthcare and other services, and develop socially and economically.

Some telecentres and telecentre networks — most often those found in countries where sufficient funds are available — have been highly successful. A number of these feature as case studies in this book. For other centres and networks, however, the experiences have been less than encouraging, especially in developing countries. This may be attributable to a range of factors, such as the fact that many telecentre projects are still at the pilot stage or in their early years of operation. Other potentially problematic issues include financing telecentres and choosing appropriate ownership models, both of which manifest themselves in implementation shortcomings.

This chapter provides a brief introduction to telecentres, critically examines the experiences to date, particularly in developing countries and emerging markets, delineates the key issues, and points to new directions and possibilities for telecentre development. Central elements are a discussion of financing, ownership and operating models, and a consideration of private sector involvement.

## TECHNOLOGY TRENDS: A CHALLENGING OPPORTUNITY

The proliferation and use of ICTs presents opportunities and challenges both to the mature service-oriented economies of Europe, Australasia and North America and to developing countries. Current technology and market trends fall into four main categories:

- *Convergence* — Increasingly, information, communications and media technologies are coming together, offering seamless access to a full range of multimedia resources.
- *Internet* — Its proliferation in many aspects of daily life is widespread and it is transforming business through e-commerce.
- *Wireless and satellite* — These new, go-anywhere technologies also promise lower costs.
- *Privatisation and liberalisation* — These are the twin vehicles for accelerating and facilitating technological advance and access to the wide range of options.

Even in advanced economies, there are rural and remote communities that have been left behind in terms of educational and technological equity and access. The technological revolution that is transforming our economies and societies into information economies and information societies meets with many obstacles in developing countries and is in danger of widening the now well-known “digital divide.” Conversely, the technological advances provide the means for “leapfrogging”—that is, the opportunity for developing countries to jump to a new paradigm before problems of delivery have been solved by traditional means, both in technical and economical terms.

Even allowing for the rhetoric and hype about the new technologies, developing countries and rural communities could generally take advantage of the benefits available through the following:

- *The Internet and Web* — the benefits: new and enlarged sources of information and knowledge
- *E-mail and chat rooms* — the benefits: new forms of communication and “virtual organisations”
- *The extraordinary pace of software development* — the benefits: generic and locally produced teaching, training and information material, with enhanced graphics, animation and interaction
- *The lowering of bandwidth costs and emergence of enhanced cable, wireless and satellite systems* — the benefits: greater opportunities for videoconferencing, online learning, etc.
- *Public access schemes* — the benefits: greater assistance to lower income groups and disadvantaged communities

However, realising this potential calls for political will and support, and for solutions to four key obstacles:

- access to technology;
- affordability and financing;
- inappropriate regulatory frameworks; and
- shortage of knowledge and skills to develop and implement ICT-based systems.

## THE TELECENTRE CONCEPT

Telecentres may be defined as strategically located facilities providing public access to ICT-based services and applications. They are typically equipped with some combination of:

- telecommunication services such as telephony, fax, e-mail and Internet (via dial-up or ISDN, high-speed telecommunications network);
- office equipment such as computers, CD-ROM, printers and photocopiers;
- multimedia hardware and software, including radio, TV and video; and
- meeting spaces for local business or community use, training and so on.

While facilities and usage vary across telecentres, all reflect the intention to address the issues of access by providing technology, develop human capacity and encourage social and economic development. Depending on the size and extent of the services provided, these centres are usually operated by a manager and a small number of staff who may be part-timers or volunteers.

Originating in Sweden around 1985, telecentres (also known as “telecottages”) experienced fairly rapid growth in Western Europe and other industrialised countries where rural isolation, lack of purchasing power and low-quality telecommunications and information technology facilities were seen to be a hindrance to participation in the information economy. By 1994, there were more than 230 telecentres in Australia, Austria, Canada, Denmark, Finland, Germany, Ireland, Japan, Norway, Sweden, the UK and the USA. The idea then spread and has become adapted to the needs of emerging markets and developing countries. Hungary is the first country in Central Europe to establish a large number of rural telecottages (more than 150).

Telecentres vary a great deal, especially in their size, facilities and services, according to whether they are rural or urban and whether they are located in the developed or developing world. Some provide only basic telecommunications services and are best referred to as “phone shops” or “public call offices” (PCOs). Such countries as Peru, South Africa, Morocco, Senegal, Indonesia, India and Bangladesh have independently developed these, starting in urban or larger rural communities with a low level of private telephone penetration and/or a large enough market for public access businesses to be commercially viable. Well-known examples are Senegal’s Sonatel with about 10,000 PCO franchisees, or approximately 5% of all telephone lines; Indonesia’s 7,000 or so Wartels; the Grameen “phone ladies” in Bangladesh; the PCOs in India (about 10,200 such centres in 1996); the PCOs in South Africa franchised by the mobile operators Vodacom and Mobile Telephone Network (MTN); and MTN in Uganda. By 1998, there were more than 9,000 such centres in Africa alone. These PCOs or phone shops often comprise just a telephone and fax, but more and more are adding personal computers, Internet connection and peripherals. Africa Online, an Internet service provider operating in nine African countries, has offered PCO owners a franchise agreement to provide public access Internet. To date, this has resulted in more than 600 so-called “e-touch centres,” mostly located in urban areas.

Other telecentres have become a vehicle for a wider variety of ICT services and applications, taking advantage of the growing availability and access speed options for Internet service. The advanced concept, as developed and promoted by the International Telecommunications Union (ITU), called Multipurpose Community Telecentres (MCTs), may include facilities such as libraries, training workshops, seminar rooms and office space for local enterprises, and provide services such as videoconferencing,

distance education, training in ICTs, telework, telemedicine, telehealth and even telebanking and e-commerce. Telecentres can also function as community information centres, providing access to databases and receiving and posting information of general interest to local people (e.g., government notices, information on the spread of diseases, weather information, prices of farm products, educational opportunities). Telecentres therefore go beyond mere access to telephony. Their purposes are to:

- expand access to ICT-based services;
- extend the reach of public services such as education, health and social services;
- provide information of general interest to the local community, including government information, and of special interest to specific groups such as farmers, local businesses and non-governmental organisations (NGOs); and
- provide access to infrastructure, technology support and advice for the development of businesses.

Telecentre projects have been initiated in at least 21 developing countries, namely: Suriname, South Africa, India, Mozambique, Uganda, Philippines, Egypt, Ghana, Mali, Bhutan, Benin, Honduras, Tanzania, Mexico, Brazil, Hungary, Estonia, Romania, Haiti, Maldives and Vietnam. Many telecentres are still in the planning or pilot stage.

One of the advantages of telecentres is that they provide a means of delivering public and private services to rural and remote locations without incurring immediate large investments. In fulfilling these goals, they are expected to have a positive impact on the socio-economic development of the communities they serve, helping to:

- develop rural and remote infrastructure;
- provide rural regions with better public services and improved local administration;
- generate employment and foster socio-economic development;
- integrate relatively isolated communities into the national and international information network and thus accelerate exchange of private goods and services;
- transfer expertise in a number of areas, such as agriculture, to and from the community; and
- give local producers access to market information, thus reducing the need for middlemen and increasing rural incomes.

## **TELECENTRE EXPERIENCE AND EVALUATION**

Experience with services, usage and the problems, issues and achievements of telecentres are reviewed in this section, with a particular focus on developing countries and emerging markets.

Evaluation of telecentres in developing countries, especially in terms of socio-economic impact assessment, is scant so far. This can be attributed to the very early stages of most of the projects. However, evaluation frameworks and methodologies are emerging (see Gómez and Hunt 1999).

Evidence of performance in developing countries is also still very limited. It must be borne in mind that cases vary according to the nature of the location, the year of development and the regulatory environment, among other factors. Thus, generalisations can be made only cautiously at this stage. Nevertheless it is possible to observe key trends.

## *Services and usage*

Services provided by telecentres vary according to the degree of development of the country. For example, a summary published by the ITU on MCTs in Ireland indicates that 50% or more of the centres offered access to computers and the Internet, word processing, photocopying, desktop publishing and computer and Internet training (Ernberg 1998). More than 20% offered some Web site development. Telecentres in Ireland are clearly geared towards assisting small business development and providing higher-end information technology equipment. Access to basic telecommunications is not the main objective.

In contrast, centres in developing countries virtually all have basic telecom and office equipment for public use, which represents the primary demand. A recent study (Roman 2000) of eight telecentres established by the Universal Service Agency in South Africa shows that the strongest demand and usage is for the following basic services:

- phone calls and faxes
- photocopying
- printing
- typing services
- bookkeeping for micro-businesses

There is also considerable demand for ICT training which is seen as increasing employment opportunities. However, many telecentres are not yet able to cater effectively to this market. For example, because they do not provide certificated programmes, the courses are of limited use for people looking for employment.

Telecentres need to provide services beyond basic access to telecom and office equipment, which can be (and mostly is) better provided by simpler phone shops. Evidence for this is the increasing number of PCO-type operations in emerging markets and developing countries.

Although telecentres are praised as a crucial development tool and have considerable potential, the data available on rural demand and usage of the Internet in such centres suggest that this is not sufficiently realised. A survey of telecentres supported by the Universal Service Agency (USA) in South Africa found that personal computers and the Internet were severely underutilised (Khumalo 1998). The reasons are thought to be:

- illiteracy in general and computer illiteracy in particular;
- language problems resulting from the fact that the Internet is mostly in English though there are many local languages;
- lack of awareness and culture about the use and benefits of ICT;
- the high cost of Internet connection through long-distance calls due to lack of local points-of-presence (POPs); and
- poor quality telecom connections.

It would also appear that computer training has increased Internet and personal computer usage in South African telecentres only minimally.

## *Local content*

Another major issue that may explain the under-utilisation of the Internet is that there is limited content on the Internet relevant to the needs of rural users in developing countries. More recent telecentre initiatives are therefore including local content development in their plans and actively seeking partners who can contribute to this, such as local farmers' organisations, educational institutions and NGOs.

An example of local information demand and local content creation can be found in four "infoshops" in Pondicherry, India, a rural area of around 20,000 inhabitants (Shore 1999). In response to a list of information requirements identified during the trial period, volunteers in the villages created a local database that comprises:

- details of government programmes for low income rural families;
- cost and availability information about farming inputs such as seeds and fertilisers, as well as information about grain prices in different local markets;
- a directory of insurance plans for crops and families;
- pest management plans for rice and sugar cane;
- a directory of local hospitals, medical practitioners and their specialities;
- a regional timetable for buses and trains; and
- a directory of local veterinarians and cattle and animal husbandry programmes.

Without consideration of such local content, attempts to encourage greater Internet usage in telecentres may meet with limited success.

## *E-commerce*

Examples of e-commerce applications in telecentres, especially in rural regions, are limited to date, but the development of Internet-based transactional services is coming more into focus. One example of such applications in rural areas in developing countries is the online ordering of vanilla from rural Uganda. With support and funds from the U.S. Agency for International Development (USAID) and its Agribusiness Development Centre, a Web site has been developed for the Uganda National Vanilla Association (UNVA), a private sector association of small farmers and processors who grow vanilla beans in addition to other crops to supplement their usually low income. This Web site has an online store where it is possible to order the vanilla with a credit card. The proceeds go back to the UNVA, but are currently more a means of supporting the further development of the association than a serious business. However, the Web site also provides contact for commercial importers with an interest in purchasing larger quantities.

Other e-commerce-related activities include several Web-based retailers of crafts and artwork from developing countries, both non-profit and commercial (see, for example, [www.elsouk.com](http://www.elsouk.com) initiated by the World Bank and [www.viatru.com](http://www.viatru.com) from a Seattle-based company formerly known as World2market). There is some evidence that these activities increase the income of local craftspersons and artists and help preserve and showcase centuries-old traditions. However, the logistics of shipping and managing financial transactions presents a challenge.

In summary, while there can be considerable potential benefits and business opportunities in such value-added ICT-based services for rural and remote areas, in

many developing countries the more advanced services and applications of telecentres are still often underutilised and underperforming. In addition to the reasons given above, these services and applications are also sometimes severely hampered by technical problems, infrastructure restrictions such as bad telephone connections and bandwidth limitations, and insufficiently trained and experienced staff. Moreover, it is clear that services and applications must be tailored to local needs and conditions if they are to generate and meet demand.

## FINANCING AND SUSTAINABILITY

The financing of telecentres varies according to whether the centres in question are being implemented in developing countries or in the developed world. In the latter, telecentres are often initially or partially funded by state or provincial governments, as is the case with the Canadian and Australian telecentres described later in this book, and/or through the national government, as in Australia where the federal government is now helping to fund the establishment of telecentres in New South Wales and Tasmania through its Networking the Nation fund.

In developing countries, telecentre initiatives are most commonly financed and supported by external agencies, often in partnerships. Such agencies include:

- international and regional (development) organisations such as the International Telecommunications Union (ITU), United Nations Development Programme (UNDP), the World Bank, the Food and Agriculture Organization of the United Nations (FAO), and the Organization of American States (OAS);
- national international development agencies such as the Canadian International Development Research Centre (IDRC), Canadian International Development Agency (CIDA), USAID, the Danish International Development Agency (DANIDA), the Swedish International Development Agency (SIDA); and
- educational and cultural institutions such as UNESCO, The British Council and the University of West Indies.

International and local NGOs also play a considerable role in implementing telecentres.

Private sector involvement in telecentres so far is fairly limited and comprises mostly in-kind contributions or donations rather than an active entrepreneurial role, as with the telecentre in Maseru, Lesotho, described later in this book, which was sponsored by DaimlerChrysler.

In contrast, small-scale phone shops or PCOs are overwhelmingly privately financed and run. Sometimes a form of licence or franchised brand name is introduced to standardise appearance or regulate the number of outlets, although this is sometimes more of a hindrance than a help to the development of the market, imposing more opportunities for official control than are necessary.

In general, PCOs tend to emerge where a sustainable and profitable market exists. It is noteworthy, though, that many PCO-type operations have been induced by specific obligations on operators — on the incumbent, the second national operator or even cellular operators. Examples of this are Vodacom and MTN which run PCO franchises in South Africa, PT Telkom's Wartels in Indonesia, Sonatel in Senegal and teleboutiques in Morocco. But it is not only these obligations that have created a favourable market and furthered the expansion of PCOs to provide access to telecommunications for the

poor and rural populations. Through such means as “rural funds” (or universal service obligations or universal access funds), commercial operators have been encouraged to provide services to rural and other under-served areas. Operators can receive (sometimes through competitive bids) subsidies to provide services to areas that would not otherwise be commercially viable to serve. Rural funds are often financed from a 1% or 2% levy on the revenue earned by certain telecommunications providers in a country. In other cases, government provides the funds. Successful and prominent examples of such funding approaches are found in Chile and Peru. Currently, there are also five additional rural funds in existence in developing countries and emerging markets, and eight more are planned (Intelecon 1999 and 2000).

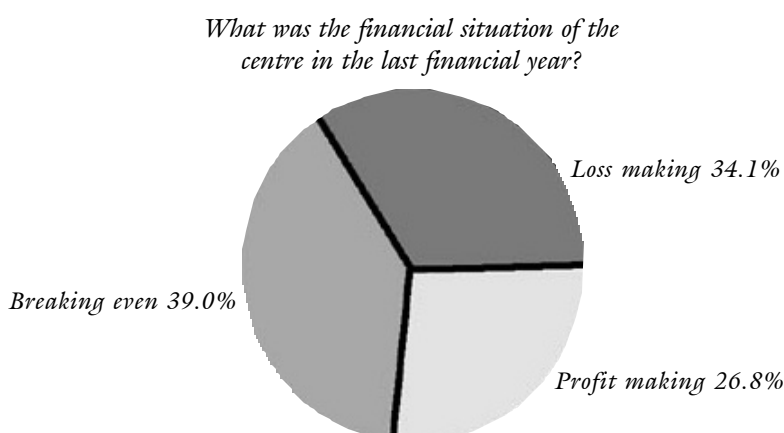
Telecentres are expected to be sustainable in the long term as their socio-economic impact and the opportunity cost of alternative modes of delivery are realised. Thus, almost all telecentres involve public/government support, but with an eye to eventual self-sustainability. Most also charge for their services, but not always at full cost.

Some telecentres also have the potential to be commercially viable in the medium- to long-term. Contrary to common perception, rural people in developing countries are usually able and willing to pay between 1% and 3% (or even higher) of their community income on telecommunications because it saves them more money than they would pay (e.g., on travel or selling their produce at lower costs to middlemen) if they did not have access to a telephone (Kayani and Dymond 1997). In the early stages, however, telecentres require public or private investment to offset the high start-up costs and piloting of new ideas.

Telecentres allow public agencies and private telecommunications and information technology companies to assess the demand for products and services while creating the market through exposing the public to the applications. They thus provide a means to explore rural locations as potential markets for those companies.

Experience in the UK suggests that profitability in the developed world is possible, though universally that has not been the case. Many telecentres have not been able to move beyond dependency on institutional or volunteer support and donations of equipment (Figure 1.1).

*Figure 1.1: Profitability in UK telecentres and telecottages (Murray and Cornford 1999).*



As Figure 1.1 shows, about one-quarter of the UK telecentres and telecottages are profitable and about one-third have experienced losses. This has also been the typical experience of telecentre projects in other European countries.

Experience on sustainability of telecentres in developing countries is very limited, as most of the projects are recent and not expected to be self-sustaining until after three or four years of operation. However, telecentres in developing countries may enjoy certain financial advantages over those in developed countries. For example, they may:

- generate a larger income from basic telecommunications access because they are the only provider in an area or can extend the infrastructure to as-yet unserved areas by, for instance, using satellite or wireless technology;
- receive block funding from the education, health and administrative ministries and other government agencies if they are recognised as a cost-effective means of delivering public services to rural and remote areas; or
- because of the low residential computer and Internet penetration of small businesses and households in developing countries, capitalise on the higher and more essential demand for public access to those services.

In a report to the ITU, Ernberg (1997) suggested that after initial investments are made, telecentres could provide annual pre-tax profits of US\$71,300, or about 60% of total annual revenues. However, some caution is necessary here, as any projections depend on specific local conditions, and the few financial analyses carried out by international agencies use sometimes hypothetical or optimistic revenues that cannot be achieved unless managers are astute commercial entrepreneurs. Some of the analyses also do not take full account of service take-up rates, the affordability of communities, and the need for rapid depreciation and amortisation of equipment common to the commercial ICT environment. Public access by inexperienced users in the harsh conditions of many developing countries may very well call for even more accelerated depreciation. In summary, there is no general business plan for telecentres. Each must be tailored to local conditions — and profits will be determined by those same conditions.

Currently, there is no multipurpose telecentre in a developing country that has proved to be self-sustaining when all the financial factors are taken into account. Many of those centres have been operational for only a short time and challenged by many teething problems. Still, judging from what limited data are available on the financial performance of the telecentres, and from what practitioners and experts have said, the prospect of the centres becoming self-sustaining is rather questionable. A look at the ownership and operating models (below) sheds some light on the reasons for this not-so-optimistic outlook. It also shows emerging trends and suggests other approaches that promise to be financially more viable.

## **OWNERSHIP AND OPERATING MODELS**

While telecentres vary in many aspects, one common characteristic is that they are virtually all initiated by development agencies and run by local NGOs. Thus, for example, the info-shops in Pondicherry, India, are funded by IDRC and implemented by the M.S. Swaminathan Research Foundation; the South African Universal Service Agency's telecentres are awarded to "community-based organisations"; the Uganda National Council for Science and Technology (UNCST) manages the telecentres in Nabweru and Buwama, which are funded by the IDRC; and the Nakaseke telecentre in Uganda is supported by the U.N. Educational, Scientific, and Cultural Organization

(UNESCO), U.N. Economic Commission for Africa (UNECA), IDRC, ITU and the World Bank.

This mode of ownership is naturally reflected in the operating model — and accounts for some of the problems accruing from it. The objectives of many of the NGOs responsible for operating the telecentres are to foster and facilitate specific development activities. Therefore, the local owners or managers, as non-profit bodies, are not driven primarily to make a commercial success of their centres, nor are they often business-minded or skilled in generating business and revenue. As a consequence, although exceptions exist, there are commonly problems with:

- *Pricing* — Pricing strategies and guidelines are often lacking, and the prices do not reflect the cost of providing the services.
- *Market analysis and business planning* — Proper demand studies and business plans carried out before the establishment of telecentres are often missing.
- *Competition* — Where there is existing infrastructure, local entrepreneurs who provide telecom access and business services are likely to compete with the telecentres. Many telecentres are not prepared for this and, if they provide subsidised services, they distort the market for emerging local entrepreneurs.
- *Human resources* — Many telecentre managers and staff are not appropriately compensated for their work. As well, the centres typically rely heavily on volunteers. Both factors lead to difficulties in motivating and retaining staff.
- *Training* — Managers and staff are often untrained in advanced operations, financial management and customer service.

In summary, telecentres are often seen as supply-driven rather than demand-driven because of their ownership structure and operating model. There is an emerging trend that calls for more demand-driven models, supported with private sector involvement and entrepreneurship. This trend is also reflected in some of the case studies presented in this book, notably those located in South Africa, Canada and Western Australia.

## CONCLUSIONS AND RECOMMENDATIONS

Many different models for telecentres exist, but the same is not true when it comes to models of ownership, management and financing. Telecentres in developing countries are almost exclusively funded by international aid agencies and are owned and/or managed by national or local NGOs. The private sector is usually only asked to sponsor equipment; it is not offered any other possibility for attractive involvement.

There is great scope for exploring new models of telecentre ownership and financing, and interest in doing that is growing among private-sector telecom and information technology players. This is not to say that telecentres funded by government or aid agencies and managed by NGOs do not have their place. Such centres, although struggling with issues of self-sustainability, are pioneering in this field and will continue to play an important role in testing new services and applications, creating awareness, and incubating ideas and opportunities for rural communities. But they may not provide the model for large-scale replication that is needed for widespread socio-economic development in developing countries where government funds are limited. Only economically successful models are likely to replicate themselves in larger numbers and spread the benefits beyond single locations.

New approaches, involving the private sector, are required. But how can commercial telecom and ICT players be attracted into serving the technology-based needs of rural communities and developing countries? The solution is not simple and several avenues may need to be explored. The PCOs have been encouraged to reach beyond urban areas through a mix of obligations and incentives that offer private sector players an attractive investment opportunity. Similar options and guiding principles for telecentres might be considered. For example:

- *Demand-driven models* — Instead of starting with huge investments and the whole range of possible equipment, services and applications, smaller telecentres could be designed, which would expand and grow only if and when demand and affordability allowed this. Large visions should not be imposed from outside, but astute local business people should be able to sense where good opportunities exist and help maximise both the scale and viability of a telecentre.
- *Commercial models* — Such telecentres could be planned and run on a commercial basis and managed by local and “highly spirited” entrepreneurs capable of developing a business and management system.

Preference should be given to telecentre solutions which have a franchise element and can establish a network of telecentres through the involvement of national telecommunication firms and Internet players. The success of the telecentres in Western Australia and Hungary (described later in this book) is partly due to the fact that they are made up of large networks and represent economies of scale for users and providers alike. A network of telecentres under a single management carries the advantage of providing quality standards and support — such as a start-up package, an operating manual, recruitment and training guidelines, name branding, and standard payment vehicles (e.g., pre-pay cards) — that increase the centres’ recognition nationally and their presence in urban and rural localities. Such support tends to raise the quality of the centres and increase the chances that urban dwellers will purchase pre-pay cards or otherwise finance the participation of their rural friends and relatives.

- *Rural funds for telecentres* — This policy instrument (similar to the universal service obligations, universal access funds or rural funds used around the world to ensure access and services for the rural, poor or otherwise disadvantaged) could provide “smart subsidies” for commercial telecentres in rural areas to help offset the large start-up costs or to subsidise telecentres on an ongoing basis in areas that are truly beyond commercial viability (Intelecon 1999 and 2000).
- *Other funding options for telecentres* — Two examples of options that might be offered by international aid agencies and organisations:
  - Micro-loans (say, of up to US\$15,000) for local franchisees, entrepreneurs or phone shop operators wishing to start a telecentre business and purchase computer equipment and other advanced ICT equipment to establish small privately owned and operated telecentres.
  - Seed finance on matching basis for qualifying national or regional private sector players wishing to establish or extend a larger-scale telecentre operation into rural areas.
- *Multi-sector support*: International development NGOs or agencies aligning themselves with a national telecentre operation could sponsor services and applications that are not self-supporting while the profitable services are commercially run and managed.

- *Contracting telecentre facilities* — International development NGOs and institutions, as well as local governments, can be major users of telecentre facilities and services if they involve the telecentre in, for example, an educational outreach, rural development, public governance or health programme. Contracting the telecentre to provide certain public services brings these agencies cost-efficiency gains while at the same time providing the centre with additional revenue. This is being successfully achieved in the Hungarian telecottage network (described in Chapter 5 of this book).

Basic telephony services can be delivered commercially without major outside investments, if the basic telecommunications access infrastructure exists. Telecentres should not compete with (or be planned in such a way as to reduce the viability of) an existing basic telecommunications retail business that involves local agents and entrepreneurs.

All around the world, the liberalisation of the telecom sector has shown that, with the introduction of private players and market competition, telephone access and services have increased and tariffs have been reduced. That such benefits are also available for the disadvantaged and rural population can be ensured by smart policy and regulatory instruments such as rural funds that entice private players to bid competitively to serve rural areas with the least amount of subsidy.

A similar approach to telecentre development should be explored: one where the private sector and local entrepreneurs are supported and encouraged by favourable policy and regulation to provide to rural areas a range of ICT-based services and applications on a for-profit basis. Such an approach needs the support of international development banks and institutions to kick-start larger-scale deployment with smart subsidy and seed finance. It also needs the involvement of the local community and NGOs who can enrich telecentre services by adding their development assistance. A true public-private partnership is required.

In this spirit, we close by sharing an excerpt from a piece by C.W. Dugger that appeared in *The New York Times* (May 2000), describing a project in rural India where initial steps have been made to involve local entrepreneurs:

One such public-minded civil servant is Amit Agarwal, the creator of the model computer project in the state of Madhya Pradesh. It is Mr. Agarwal who has taken power out of the hands of bureaucrats and given it to village entrepreneurs.

Mr. Agarwal, 29, the chief executive of the Dhar district council, said he believed that while low-level bureaucrats might be tempted to demand bribes, an entrepreneur being paid to provide the records retrieved on a computer would be more inclined to work hard.

He has set up a model project in his district, one of India's poorest, where young men have a franchise from the state to distribute daily crop prices and commonly needed state records for a small fee.

Mr. Agarwal predicts that revenue-generating computer projects like his will spread more quickly than those that depend on scarce state funds. "This is the paternalistic welfare model that the country has been slowly discarding over the past decade as not having worked," Mr. Agarwal said.

Since the project was set up in January, 22 villages have each bought a computer, a modem, a printer and a battery for \$1,500 with their own money and agreed to provide a small booth to house the setup.

In each case, the state then picked a young person from the village with at least a 10th-grade education to operate the computer and gave him a franchise to sell information from the state's computer network.

For 25 to 35 cents, villagers buy printouts of documents that they might have spent days trying to get from local bureaucrats: land records, caste certificates and proof of income, among others.

For another 25 cents, any citizen can send a complaint to the state by e-mail — my pension didn't arrive, my child's teacher didn't show up, my village hand pump doesn't work — and the state guarantees a reply within a week. And for 10 cents, a farmer can get a printout listing the prices of any agricultural commodity sold at surrounding markets.

At Bagdi village, wizened, sun-beaten farmers filed in to collect the day's price lists for wheat, garlic and whatever other crops they had to sell. They all said their knowledge of the rates improved their negotiating leverage with middlemen. "If the price he offers suits me, I'll sell it to him," said Satya Narayan Khati, who grows wheat on his three acres. "Otherwise, I'll take it to market myself."

In Bagdi, the computer booth is operated by Deepak Patel, 20, a gaunt, lanky son of a farmer. Mr. Patel still helps milk the cows and bring in the harvest, but he prefers his computers. After just a few months, he is already making a good living from the long hours he spends selling printouts.

When people come in to e-mail a complaint to the state, Mr. Patel writes out their grievances for them, since most residents of the district are illiterate. In his booth, as in every computer centre visited in Madhya Pradesh and Pondicherry, children crowd in, clamouring for a chance to play on this machine that their elders call a magic box. "It's better than farming," Mr. Patel said. "Through this you feel connected to the rest of the world."

## REFERENCES

- Burstein Herrera, Y. (1999). *The Universal Access Model — Cabinas Publicas in Peru*. International Development Research Centre (IDRC), Ottawa.
- Colle, R. and Roman, R. (1999). *Communication Centers and Developing Nations: A State-of-the-Art Report*. Cornell University, Ithaca, NY.
- Dugger, C.W. (2000). "Connecting Rural India to the World." *The New York Times*, May 28, 2000.
- Ernberg, J. (1997). *Universal Access by Means of Multipurpose Community Telecenters*. International Telecommunications Union (ITU), Geneva.
- Ernberg, J. (1998). *Universal Access for Rural Development: From Action to Strategies*. International Telecommunication Union (ITU), Geneva.
- Gómez, R. and Hunt, P. (1999). *Telecenter Evaluation: A Global Perspective*. International Development Research Centre (IDRC), Ottawa. Available at: [www.idrc.ca/telecentre/evaluation/html/06\\_Tel.html](http://www.idrc.ca/telecentre/evaluation/html/06_Tel.html)
- Intelecon Research & Consultancy Ltd. (1999 and 2000). *Funds for Rural Telecom Development: Experience in Latin America*. Rural Funds Update. Available at: [www.inteleconresearch.com/pages/forum2.html](http://www.inteleconresearch.com/pages/forum2.html)
- Kayabwe, S. and Kibombo, R. (1999). *Buwama and Nabweru Multipurpose Community Telecentres: Baseline Surveys in Uganda*. International Development Research Centre (IDRC), Ottawa.
- Kayani, R. and Dymond, A. (1997). *Options for Rural Telecommunications Development*. World Bank Technical Paper No. 359.
- Khumalo, F. (1998). *Preliminary Evaluation of Telecentre Pilot Projects*. Universal Service Agency (USA), South Africa.
- Mayanja, M. (2000). *Access and Empowerment Experiences and Lessons from the Multi-Purpose Community Telecentres (MCT) in Uganda*. UNESCO.
- McConnell, S. (1998). *NGOs and Internet Use in Uganda*. TeleCommons Development Group (TDG).
- Murray, W. and Cornford, D. (1999). "Telecottages and Telecentre Survey 1998." *Teleworker Magazine*, February.
- Nyiira, Z. (1999). *The Acacia Integrated National Programme: Uganda Report*. Uganda National Council for Science and Technology.
- Opena, M. (1999). *Multipurpose Community Telecentres in Selected Philippine Barangays*. International Development Research Centre (IDRC), Ottawa.
- Owen, W. and Darkwa, O. (2000). "Role of Multipurpose Community Telecentres in Accelerating National Development in Ghana." *First Monday*, Vol. 5, No. 1, January 2000.

- Richardson, D., Ramirez, R. and Haq, M. (2000). *Grameen Telecom's Village Phone Programme in Rural Bangladesh: A Multi-Media Case Study*. TeleCommons Development Group (TDG).
- Roman, R. (2000). *Towards a Training Framework for Telecentre Managers*. M.A. thesis. Cornell University, Ithaca, NY.
- Rose, J.B. (1999). *Multipurpose Community Telecentres: In Support of People-Centred Development (Uganda)*. UNESCO.
- Scharffenberger, G. (1999). *Timbuktu Multipurpose Telecentre Baseline Survey: Community Information and Communications Profile*. Pact Institute, Washington, DC.
- Shore, K. (1999). *The Internet Comes to Rural India*. International Development Research Centre (IDRC), Ottawa.
- Smith, P. and Pradhan, R. (1996). "Franchising Telecom Service Shops." *Viewpoints*, World Bank.

### ***Web Resources***

Nakaseke Telecentre, Uganda  
[www.nakaseke.or.ug](http://www.nakaseke.or.ug)

Vodacom South Africa, Community Service  
[www.vodacom.co.za/aboutus/communityser.asp](http://www.vodacom.co.za/aboutus/communityser.asp)

