



Telecenters for Socioeconomic and Rural Development in Latin America and the Caribbean

*Investment Opportunities and Design Recommendations,
with special reference to Central America*

Executive Summary

by

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Executive summary

The Internet is central to the network revolution that is transforming the way people interact all over the world, and the Net has taken Latin America and the Caribbean by storm. The number of domain names in the region doubled in 1997 and 1998 and rose 136% in 1999, compared to 74% in North America, 60% in Asia, 30% in Europe, and 18% in Africa.

The region, however, lags far behind. Its Internet infrastructure represents only 1.6% of the world's total. Only 2% of inhabitants of Latin America and the Caribbean use the Internet, compared to 40% in the United States and 36% in Canada. The countries in Central America have 7% of the population of Latin America and the Caribbean, but only 1% of the domain names, and their presence in the new economy is negligible.

*The region's lag is a serious problem, but one that the business sector is addressing forcefully. A far more serious challenge for the region stems from the very nature of the new economy: i) the globalization of markets; ii) the rapid and growing speed with which decisions are made and executed; and iii) the virtually ongoing reorganization of knowledge networks of corporations, governments, and associations. **In this new environment, the danger of the gap between the rich and poor in the region growing wider is more serious than ever and threatens the economic prosperity, social stability, and very survival of democracy.** Measures are needed to give all citizens the opportunity to acquire knowledge, frequently update that knowledge, and become fully engaged members of society.*

This report is part of a combined effort by the Social Programs Division of the Regional Operations Department 2 and the Rural Unit and the Information and Communications Technology Division of the IADB's Sustainable Development Department, to establish or strengthen access to and dissemination of technology for economic and social development.

The Bank and the international community in general have become interested in telecenters as a way to build sensible development strategies, consistent with the situation of poor countries and marginal areas. This strategy holds that there is no point in investing heavily in extending access to those areas, given their limited production capacity and purchasing power, but recognizes the potential impact that increased access could have on their development. "Universal service" to every home is too ambitious a goal in poor countries and low-income areas, but it is possible to have a significant impact through "universal access" by means of shared facilities in a relatively short period of time.

*A telecenter may be defined as a **"shared site that provides public access to information and communications technologies."** This report focuses on those sites whose **main purpose is to increase public access to the Internet and to services available over the Internet.***

*This study examines some of the main telecenter experiments in Latin America, with particular reference to Central America and the Caribbean, to help guide IADB actions. In the region, Peru has the most persons who use the Internet from public access points; that country's experience with *cabinas públicas* is therefore examined at length. As part of the study, visits were conducted to Brazil, Chile, El Salvador, Guatemala, Panama, and Peru. Additional information on experiences in other countries was obtained from secondary sources and through direct communication (via Internet, e-mail, and telephone) with telecenter administrators, specialists, and promoters.*

*A survey was conducted in 14 *cabinas públicas* in Peru and completed by a total of 1,752 adult*

users. Survey results provide a characterization of users, and help identify the main uses of cabinas, the needs, aspirations and achievements of users, and perceived notions as to the quality of service received. A principal finding is that the cabinas studied are in fact benefiting a significant number of low-income users; but that the population served has a substantial stock of human capital. Those cabina users surveyed that are poor, in general have the skills to profit the most from the use of information and communication technologies (ICTs) to escape poverty. The downside of this finding is that the impact of cabinas públicas on poverty is not likely to be broad enough to reach the mass of low-income people with little formal schooling.

The **basic telecenter** that is common in Latin America and the Caribbean, mainly in urban areas, has fairly standard features. It consists of premises stocked with several computer terminals and simple furnishings consisting of chairs or classroom desks for users and regular desks or tables on which the terminals sit. The main service offered to the public is access to the Internet (chatting, e-mail and Web browsing) and often also to elementary software (word processing, spreadsheet). A basic telecenter is easy to install and administer, provided there are no connection difficulties. The cost of a basic center with 14 terminals, for example, may require an investment of \$15,000 to \$25,000.

Starting from this basic definition, telecenter types (Table 2) differ in two main respects: i) the way in which their management is organized, and ii) the services offered in addition to access to a computer connected to the Internet. This study categorizes telecenters by management type, given its fundamental impact on telecenter sustainability. A distinction is made among the following types of telecenters: **commercial, franchise, university, school, NGO-sponsored, municipal, and multipurpose**. The study describes how different institutions operate telecenters under each management type and the services they provide, and assesses the potential impact of each telecenter type on a target group comprising low-income people, replicability and self-sustainability.

Telecenters have the potential to help break down some of the largest barriers to development that are presently faced by low-income populations, particularly in rural areas. Use of a telecenter would enable a rural inhabitant, for example, to gain on-line access to: distant productive assets and services; opportunities to learn better practices through formal and informal sources; to crucial market intelligence through informal networks that enhance bargaining power; to information on projects, financing institutions and options and support for the rural population; to expanded distant job opportunities and telework; and to persons with similar interests willing to work for a common cause.

Establishing telecenters in urban areas or in rural areas with good connectivity does not present any great difficulties. However, **the lack of broadband telecommunications infrastructure sufficient to connect to the Internet is a major challenge in rural areas**. Other factors come into play that further raise investment and operating costs in rural areas (humidity, low skills of client population, lack of technical facilities and staff to maintain equipment).

Some important features in Central America that affect the development of telecenters in the subregion are: serious deficiencies in its telecommunications infrastructure; the significance of its rural environment (50% as compared with 26% for Latin America); a very young population (60% less than 24 years of age, compared with 50% for Latin America and 36% for the US); a large population residing abroad; and different telecommunications regulatory regimes.

Investment opportunities

Information and communications technology (ICT) projects and components have begun to play an increasing role in IADB operation. Several projects are already financing the establishment of telecenters. This report identifies twelve model interventions recommended for Bank action, categorized by the type of instrument applicable: financial (loans) and non-financial (technical cooperation, studies, bid calls). For some kinds of intervention, concrete examples are available. The other models presented help illustrate potential Bank action. In general, all of the proposals identified are applicable in Central America, but the first four are particularly suited to the subregion. A list of the opportunities identified follows:

Financial instruments -- loan operations

Example

- | | |
|--|---------------|
| <i>1 Use of community, social, and productive investment funds to help finance telecenters administered by civil society</i> | <i>HO-144</i> |
| <i>2 Agricultural development projects -- development of online agribusiness information systems and telecenters to promote increased access to production information</i> | <i>ES-119</i> |
| <i>3 Comprehensive ICT development projects</i> | <i>JA-116</i> |
| <i>4 Expansion of rural telecommunications infrastructure</i> | |
| <i>5 Projects to modernize formal education</i> | |
| <i>6 Modernization of the State</i> | |
| <i>7 Municipal decentralization</i> | |

Nonfinancial instruments

- | | |
|--|----------------------|
| <i>8 MIF projects supporting innovative initiatives benefiting crafts associations and micro-producer groups</i> | |
| <i>9 MIF projects to help microfinancing institutions develop telecenters, as an additional service to their clients and to reduce costs by putting some services online</i> | |
| <i>10 Strategic partnerships to promote special telecenter initiatives</i> | <i>Youth Program</i> |
| <i>11 Regional technical cooperation to support virtual assistance networks and telecenter initiatives</i> | <i>TC-990519-RG</i> |
| <i>12 Studies on best practices and training events</i> | |

Design recommendations

The study's principal recommendations are the following:

Role of Telecenters

- i) A telecenter can be a powerful instrument but to be effective it must be part of a comprehensive economic and rural development strategy that includes investment in comple*

mentary sectors. Institutional reforms must also be instituted to broaden the work opportunities and social and economic participation of traditionally excluded sectors of the population.

Rural Connectivity

- ii) *Rapid developments in wireless technology have made it possible to overcome physical hurdles (distance, topography), at a reasonable cost, that for long have limited the development of telecommunications infrastructure in rural areas of Latin America and the Caribbean. Investment in this infrastructure The benefits of such investments should be maximized by providing Internet service not just rural telephony. Shared access to these services through telecenters can increase the impact of these interventions. In remote and sparsely populated areas market incentives will often provide insufficient stimulus to private investment **and government subsidies will be required.***

Training

- iii) *ICT training interventions should be geared primarily towards **young people**. The young adapt most quickly and easily and is most skilled at using the new technologies. Since young people are a large group in the region, with the longest productive horizon ahead of them, there is a high return on investments aimed at improving their productive capacity. The starting point should be the strengthening of the **formal education system**, so that it incorporates the effective use of the new technologies. Teacher training is often a critical determinant of impact on youngsters. **Telecenters can be an important complement to formal education reform**, providing support to students and teachers after school hours and increasing Internet access for teachers, parents, recent graduates and the community at large.*
- iv) *The lack of knowledge about the use of the Internet and computers is not a serious obstacle for young or well-educated adult users. For telecenters that aim to serve traditionally excluded populations, most with little schooling, a training program for novice adult users may be essential.*

Content and Virtual Networks

- v) *Priority must be given to launching portals that offer **public services online**, aimed primarily at meeting the economic and social needs of the low-income population, including educational portals using simple language that broaden labor and self-employment opportunities.*
- vi) *Public investment in content does not imply public administration. The combination of State investment with private sector development of public information and virtual service systems has as a side advantage the stimulus to the development of an indigenous ICT sector, especially if contracts are awarded to private entities on a merit basis.*
- vii) *A link between a telecenter and content development is not always essential. When the user population has a high level of education, the usefulness of State-sponsored portals to support telecenter development is debatable. One advantage of the Internet is precisely that it eliminates physical space as a barrier, and private or State institutions can create*

useful networks or sites independently of telecenter development. For example, to disseminate technical or market information for small and medium-sized enterprises (SMEs) and the agricultural sector, it is more important to have a **virtual center** (see the Mexican Business Information System – SIEM [SECOFI]) and for **virtual networks** to be established among companies, cooperatives, and other institutions that already have computers or are in a position to acquire them (CONCYT project in Guatemala).

- viii) **It is the community that should take the initiative and be responsible for maintaining community information systems.** The State and the philanthropic sector can help launch these initiatives and even develop portals that enhance the presence in the web of low-income users and small towns and businesses and make the task more user-friendly and economical. The systems developed must be simple, and the requirements for keeping these sites up to date must be consistent with the organizational and financial capacity of the users. Otherwise, there is the risk of spending a lot of money on unsustainable initiatives.
- ix) Government policies are needed to strengthen the **legal and institutional framework** to foster the development (primarily by private enterprise) of sites and Internet solutions that facilitate e-commerce, particularly by small and micro-entrepreneurs. The lack of secure, on-line payment mechanisms accessible to all types of producers is one obstacle that needs to be overcome with urgency.
- x) It is important for the State and society to welcome and encourage **virtual activism**, as a means of empowering low-income populations to address their own problems constructively and effectively. This form of activism will develop rapidly as more citizens -- until now bypassed by technology -- gain access to and recognize the power of the Internet to voice their social claims and support their own organizations and initiatives. The main contribution of telecenters might well be an increase in communications and options for interaction and social coordination. Support programs can promote virtual interaction and enhanced productivity, by sponsoring face-to-face meetings between administrators and users with similar problems and interests. They can also finance the development of low-cost tools (software) in the **public domain** to facilitate **virtual** interaction and joint organizational work over the Internet.

Types of telecenters

- xi) **Commercial telecenters**, as developed by the private sector in Peru (cabins públicas) and elsewhere (cyber cafés), are excellent vehicles for increasing Internet access. Promoting the spontaneous development of this type of market-based telecenter is a healthy strategy, but requires concerted effort on the part of the government; and the speed with which they emerge depends on specific conditions that are not always in place in the countries. Commercial telecenters have a particularly limited capacity to benefit low-income populations with little education.
- xii) There are countless successful experiences with telephone franchising, however to date there is very limited experience with commercial telecenter franchising in an openly competitive framework. Financing and developing a sustainable rural or urban **commercial franchise** model is risky and is up to the private sector, not to public or quasi-public entities run (directly or indirectly) by the State.

xiii) *Access to computers and the Internet can support efforts to decentralize and strengthen local governments. Municipalities can also promote the development of **municipal telecenters**, to help further local development and enhance civic participation. The key to success lies in keeping the operations of the telecenter independent from those of the mayor's office and reducing the potential for political interference by supporting the implementation of telecenters with a sustainable management model. If the municipality has resources, a commitment from local authorities to maintain the center may be sufficient. However in many if not most cases, it is preferable for the private sector to manage the telecenter, to prevent the adoption of pricing practices and operational norms that are detrimental to sound administration and sustainability.*

xiv) *Other types of telecenters can also help to bridge the digital divide.*

- ***University telecenters**, given their link to research activities and centers of excellence, can offer supplemental service, social outreach and develop connectivity, training, content, and virtual networks. If they charge for the services provided and operate in a sustainable manner, University telecenters will also serve as an example to be emulated by other public and private institutions.*
- *Many countries could establish **school** telecenters by outfitting classrooms as student laboratories and opening their doors to the public at the end of the school day. Many more school youths could benefit from a school telecenter than from a university facility; and the closer parent-teacher relationship in schools would enhance community involvement. Having the school system and the community share telecenter costs and equipment would bolster sustainability. Following the example of peruvian university telecenters, school telecenters could charge for services rendered to enhance sustainability.*
- *There is a broad range of **NGO-sponsored telecenters**; most have been positive experiences, but they are difficult to characterize. The most successful initiatives are easy to pinpoint, since they generally share the following traits: i) their sponsors are quite open and willing to discuss their financial situation, achievements, difficulties, and shortcomings; ii) they promote modern, inexpensive information and communications technology consistent with the payment ability of and potential benefit to the target clientele; iii) their mandate is documented and clearly identifies the direction and current status of the sustainability of operations; iv) all clients, no matter how poor they are, pay for services rendered, even if such payment is in kind; and v) they maintain a decentralized administrative structure, attuned to patrons' needs.*
- *There have been different manifestations of the **multipurpose** telecenter model. From the outset, and under ITU leadership, their task and main contribution has been experimentation with and development of service and operating alternatives to try to overcome the challenges posed by rural environments.*

xv) *More important than type, to be successful in bringing about economic and social development, telecenter initiatives need to:*

- *Target a low-income population as (at least part of) its clientele;*
- *Remain strongly committed to self-sustainability and adopt a business model*

consistent with that commitment; and

- *Be run by someone that is: personally committed to the project, willing to contribute his or her own capital and time, backed by the community in which the center operates, willing to address the community's objectives and needs, and be knowledgeable of the initiative's technical and financial requirements.*

State Support

xvi) *To serve the large masses of poor people whose formal education is generally limited, the State will have to adopt subsidized development interventions.*

xvii) *State support should adhere to transparent and sustainable institutional formulas:*

- *Subsidies for the initial outfitting of the center seem adequate, leaving the operation and maintenance of the telecenters to be provided by telecenter operators.*
- *If the State decides to offer users free or highly subsidized service, it must recognize that in so doing it may interfere with the development of private initiative – at least in the area surrounding the telecenter. It is also important for the State to be willing and able to bear the implementation costs in a regular, recurrent basis.*
- *In general, it is preferable to introduce (experiment with) a scholarship or voucher system for impoverished sectors, instead of general subsidies for all users.*
- *The success of many **franchises** in different spheres of business – including rural telephony - has been very enticing to the public sector, which is always seeking to make a high impact and visible intervention. In practice, State efforts (either directly or through quasi-public agencies) to promote telecenter development under **public franchise schemes**, tend to undermine local ingenuity and the sustainability of the endeavor and therefore **is not recommended**. Instead, other support formulas that give local administrators full latitude and flexibility in decision making should be used.*
- *In countries where the State has a monopoly on telecommunications, government concessions may be the only alternative for developing telecenters for the low-income population. Entrusting civil society institutions with the management and operation of the telecenters will enhance the likelihood of success.*
- *In general, merit-based systems of support appear to be suitable and transparent means of promoting self-sustainability and innovation in telecenter development.*
- *The two types of merit-based systems considered - **Telecommunications Development Funds and Community Investment Funds** - have yielded good results, and **both are recommended**.*

Internet Access and Telecenters in Central America

- xviii) *Increased Internet access can and should play a vital role in the development of Central America, given the youth of the population and the large number of Central Americans residing abroad and bearing in mind that telecenters are used predominantly for communications – chat and e-mail..*

Promoting telecenters in urban and urban outskirts areas

- xix) *In urban and rural areas with good connectivity, community investment funds, as used in Canada to establish 10,000 telecenters, are a quick, effective way to increase citizens' access to the Internet. In principle, the Social Investment Funds currently operating in most Latin American and Caribbean countries could play an important role in the very short term in developing community telecenters.*

Promoting rural telecenters

- xx) *A program to expand Internet access cannot ignore the traditionally excluded population that resides in rural areas of the region and that make up a quarter of its population (50% in Central America). Furthermore, it is in these areas where poverty is most widespread and deplorable. The main obstacle in many rural areas is the lack of telecommunications infrastructure. To overcome this impediment, special support programs, often requiring State subsidy, will need to be instituted.*
- xxi) *For countries in which the sale of the State owned telecommunications monopoly operator is in the policy agenda (possibly Nicaragua, Honduras, Costa Rica), it is important for the privatization process to: make provisions for a significant expansion in the national telecommunications infrastructure; allow for the expansion of rural infrastructure (including voice and data transmission) in sparsely populated areas, for example, by setting up minimum subsidy tender procedures and allowing the participation of specialized wireless operators (e.g. VSAT, wireless local loop) in service provision; and foster competition among Internet service providers (ISPs) and, as soon as possible, telecommunications companies, thereby - albeit indirectly, but effectively - encourage the expansion of commercial telecenters..*
- xxii) *The development funds used by telecommunications regulatory and promotion agencies in different countries in the region (Chile, Colombia, Perú) are appropriate instruments, particularly to extend access to the Internet in rural areas that require infrastructure investments subject to significant economies of scale. The adaptation of these experiences in Central America and other countries in the region deserve consideration. Bidding formulas should provide for the establishment of telecenters with the capacity for the transmission of voice and data with sufficient bandwidth to enable web surfing. Bidders should have the latitude to propose the management formulas they deem appropriate, but a preference for management models that rely on institutions and enterprises in the communities to be served should be stipulated in tender documents.*

Bank Instruments and the Development of ICTs

The globalization of markets, the fast and increasing pace at which decisions are being made and executed, and the changing role of leadership in an environment in which operations are being decentralized and knowledge networks constantly reorganized, provide for unprecedented social and economic dynamism. The new setting has led to profound changes in institutional architectures in many firms and civil society organizations. The greatest challenge, however, is to national and international public agencies, because either by tradition or constitution, their administrative and decision-making structures tend to be compartmentalized, dependent on various bodies for approval and control, and on fairly rigid and complex multilevel hierarchies. These features are not conducive to decentralization, alliance building or rapid response. And, unlike private firms or non-governmental organizations, public agencies may go on for long even as they become increasingly irrelevant.

*Information and communications technology (ICT) projects and components have a specific profile that separates them from other kinds of interventions. First, they **involve many disciplines and sectors**, making coordination and working in multidisciplinary teams necessary, both within the Bank and in the countries. Yet achieving effective coordination through such teams is complex, and determining competencies among institutional bodies is no easy task, even though it is essential. Second, ICT operations have **intensive knowledge and technical assistance requirements**, instead of physical and financial capital needs, which traditionally have been most important to the Bank. This shift in emphasis in favor of non-financial instruments makes it indispensable for the Bank to join in partnership with technical cooperation organizations and bilateral agencies, private philanthropic entities, and even civil society organizations. Third, **ICT operations need to be prepared swiftly**. Technology project designs become outdated very quickly.*

*The new instruments adopted by the Bank in 2000, innovation loans in particular, should prove helpful in reducing project-processing time. However, if the Bank is to be at the cutting edge, a leader in ICT development throughout the region, more fundamental changes in its instruments and operating procedures are likely to be needed. The changes required would seek to improve the Bank's ability to work effectively with multiple sectors, in partnership with different kinds of public and private institutions and making intensive use of technical assistance inputs, and radically reducing project-processing time. Such changes would enable the IADB to set the standard for public sectors throughout the region, and to make an effective contribution to regional efforts to give **all peoples of the Americas** the opportunity to acquire knowledge, improve their future, and become fully engaged citizens.*