

Précis



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Connecting with the Information Revolution

The explosion of the Internet has brought about an increasingly rapid convergence of information and communication technologies, launching an information revolution that could reshape society and commerce in the global economy. Whether and how much developing countries benefit from this revolution will depend on their developing an effective *information infrastructure*—the increasingly integrated mix of telecommunications networks, computing hardware and software, and services required to transmit information efficiently.

Despite the Bank Group's expertise in areas relevant to information infrastructure, the sector's benign neglect, until recently, by Bank policy and country management has hampered the institution's ability to effect major change in the sector. The Bank Group's new strategy for information and communications technologies (ICT) and two recent major Bank initiatives—the Global Gateway and the IFC (International Finance Corporation)-Softbank Internet venture—provide the opportunity for a breakthrough, if their focus on *content* does not detract from the need to also address the glaring inadequacy of *physical* infrastructure in most developing countries.

A Joint Assessment

The joint review by OED and by IFC's Operations Evaluation Group (OEG) is more than an update of OED's 1993 review. For one thing, it is the first joint OED/OEG evaluation of both Bank and

IFC activities in a sector. For another, it assesses broadly how the Bank Group's assistance has addressed challenges brought about by the increasingly rapid convergence of telecommunications and information technology (IT)—in particular, more effectively helping developing countries acquire the integrated framework, technologies, services, networks, and markets that make up an information infrastructure.

The 1993 review of telecommunications by the Bank's Operations Evaluation Department (OED) questioned the relevance of the Bank's interventions through much of the 1980s and early 1990s. The 1993 review pointed out a disconnect between the apparent success of Bank projects (telecommunications being one of the Bank's top-performing sectors) and the sector's persistently dismal state in most borrowing countries in access, quality of service, and satisfaction of demand (requests for a phone line). OED recom-



mended greater coordination with IFC, more innovative use of Bank instruments, the adoption of a new private sector-led agenda (emphasizing privatization, competition, and regulation), and the bridging of outstanding policy gaps, particularly in regard to universal access.

Generally these recommendations were heeded, but, in two areas, they have been only partially implemented. Potential synergies between IFC and the Bank were not fully exploited (hence the recent decision to merge the Bank and IFC telecommunications units). And the Bank did not sufficiently diversify the use of its instruments: more than half the Bank's post-1993 lending in the sector took the form of multisector technical assistance loans.

Connectivity Gaps

Existing measures show performance of stand-alone Bank and IFC projects to have been better than average, but do not capture the performance of telecommunications components in multisector projects, for which institutional progress has been slower. Results have been encouraging in the few countries where Bank Group involvement has been

substantial and sustained. In Bolivia, Morocco, Peru (box 1), and Sri Lanka there have been significant commitments to private investment and price reductions in both mobile and basic telephony.

Most developing countries plan to restructure their telecommunications sectors, but few have done so—beyond the easy steps of opening up value-added services. Efforts to privatize basic service providers and to introduce effective competition and regulation are often delayed. In most countries the overall quality of service has improved and the average growth in teledensity (both fixed and wireless) has recently accelerated—largely through the rapid rise of mobile telephony. But penetration rates in most countries remain far below 10 lines per 100 inhabitants (the basic threshold in connectivity experts consider essential for joining the information revolution). And despite greater private sector involvement in countries that have opened up their telecommunications sectors, investment levels in poor and lower-middle-income countries will not achieve that threshold of connectivity any time soon (box 2).

Within countries, gaps in connectivity are growing between urban and rural areas and between higher- and lower-income groups. Existing international service revenue sources in many countries' telecommunications networks face serious threats from the Internet and the impending collapse of the international system for revenue settlement among country telecommunications operators. Most countries have not even recognized the need to rethink and broaden their telecommunications policy to reflect links with other sectors (such as health, education, taxes, and trade) where information infrastructure could figure prominently (boxes 3, 4).

Box 1: Telecommunications Reform in Peru

Peru attracted so few investors that the government granted a new foreign operator (Telefónica of Spain) temporary exclusivity for local, long-distance, and international telephony, counterbalanced by strict obligations to expand service in rural areas and to minimize tariffs under a price cap regime. Peru illustrates the constructive role the government can play in granting seed money and the difficulty of mobilizing financing from foreign private investors, who usually give priority to heavy corporate and high-end users. Peru could become a best practice model.

Box 2: Lessons Learned about Telecommunications

A review of “old agenda” projects completed after 1993 confirms lessons documented in OED's 1993 review concerning the inadequacy of traditional state monopolies in developing a modern network infrastructure. Evaluations of mature IFC projects and available information from ongoing Bank projects and research literature confirm these lessons:

- Even partial competition (from mobile telephony) brings about increased investment, lower prices, and better service.
- Setting up a regulatory body does not obviate the need for a well-articulated government policy and strategy.
- The dearth of local expertise in poor countries limits effective independent regulation.
- Transparency in licensing and tariff setting (especially for interconnection rates) and clarity about the incumbent operator's role are critical to attracting private investment.
- Poorly regulated private monopolies are not always better than public ones.

A Fragmented Response to Rapid Change

Why this sobering picture with so apparently responsive a Bank Group approach? First, the *pace of change accelerated*, especially with the onset of the Internet in the late 1990s. The development of broadband access (which requires minimum connection levels) rather than mere voice connection is the new goalpost for access to the information society. And the rapid convergence of telecommunications and information technology rendered obsolete the Bank's traditional focus on a narrowly defined telecommunications sector.

Second, *the Bank Group slipped into complacency* for several reasons:

- It failed to recognize that a foundation of network infrastructure—more connections—was essential for the efficient transfer of knowledge, which the *World Development Report 1998: Knowledge for Development* rightly emphasized.
- Much of the staff and management wrongly believed that opening the sector to private investment and introducing new technologies would allow poor countries to leapfrog into the information age, with little or no help from the public sector, despite experience to the contrary in industrial countries.

Box 3: Grameen Phone and Rural Telecommunications

An IFC-backed project to install and operate a nationwide digital cellular network in Bangladesh, one of the world's poorest countries, will provide capacity to 190,000 subscribers, covering 55 percent of the country. To increase telephone connections and promote small business development in rural areas, a project-created company will sell airtime at wholesale rates to a nonprofit organization that will help rural women entrepreneurs establish village pay phones—and will help women entrepreneurs get financing from a micro-credit bank to purchase cellular handsets. A pilot program shows women netting an average \$2 a day or \$700 a year from the village pay phone operations—more than twice the country's average annual per capita income.

- The Bank Group's declining portfolio in information infrastructure appeared to be healthy—partly because IFC was concentrating on higher-risk, higher-reward projects in frontier market segments, and partly because the Bank's performance monitoring systems failed to adequately monitor components of multisector projects (which accounted for much of the Bank's telecommunications lending and IT support) and advisory and analytical services.
- The growing number of donor-funded technical assistance activities, initiatives, partnerships, and micro-

Box 4: Building Human Capital

In El Salvador, the Bank has been helping develop a program for a “learning society” with broad-based Salvadorian participation and leadership and only modest input from the Bank. Through this 1996 initiative, six “learning circles” have been created around the themes of education, migration, government, rural development, municipal and local development, and the development of small and medium-size enterprises. An Internet conference brought together Salvadorian stakeholders and an international panel of specialists.

events in the information architecture sector created the illusion of action—but their design, funding, and impact were uncoordinated and unmonitored.

Third, *fragmentation in the Bank Group's organization in the information infrastructure sector*, combined with distorted internal incentives, hampered the Bank's ability to make the best use of its expertise and available instruments. Many units were active—sometimes competing—in providing assistance for information infrastructure, but task management arrangements and budget limitations associated with multisector loans prevented the best use of specialized anchor staff. As a result of fragmentation in the administration of Bank advisory and analytical services, advice to

Key Dimensions of a National Information Infrastructure Strategy

Policy and legal issues

Governance institutions

- Rule making processes
- Regulatory agencies
- Implementing agencies
- Financing institutions and options

Telecommunications

- Competition policy
- Interconnection rules
- Tariff regime
- Accounting rates
- Universal service

Information policy

- Taxation
- Intellectual property rights
- Content regulation
- Privacy, encryption, and security

Telecommunications infrastructure

- Network expansion
- Market structure standards
- Transmission networks
- Switching
- User equipment

Human resources

- Technical training
- Basic scientific education
- Organizational learning

Information technology industry

- Hardware
- Software
- Export promotion
- Incentives

Applications

- Access issues
- Tele-medicine
- Education and research
- Distance learning
- E-governance
- E-commerce
- Rural services delivery
- Citizen participation

countries was often poorly coordinated and the design of Bank interventions often focused too much on inputs and processes (privatization transactions and the hiring of legal or regulatory consultants, for example) and too little on policy and strategy, an area in which the Bank has a comparative advantage. Opportunities were missed because there was no strong framework for coordinating Bank and IFC activities. Adding to fragmentation in the sector was the absence of a clearly recognized and funded informatics thematic group. Successful activities were generally associated with a staff member taking the initiative to overcome disincentives or with a country director's strategic vision for the sector.

Finally, the Bank Group failed to recognize *the need for a more integrated operational strategy and policy in the sector* than OP 4.50 offers. Until recently, IFC's annual strategies reflected known sponsors' interests but lacked a well-articulated policy and strategic framework. These gaps contributed to fragmentation of the Bank Group's approach in individual countries, where critical decisions were often left to project staff or consultants.

The Bank Group missed several opportunities to reverse this trend: in 1995, when regional units failed to follow up on the highly successful first Symposium on Information and Development; in 1996, when a Bank strategy on information in development was drafted but never finalized; and on publication of the *World Development Report 1998: Knowledge for Development*, which could have sensitized critical audiences to the challenges the information revolution presents to developing countries, but instead led largely to inward-oriented knowledge management efforts until the recent Global Development Gateway initiative.

Box 5: Sector Strategy

The creation in 2000 of a Global Product Group for ICT, which integrates Bank and IFC activities in that sector, and the approval in September 2001 of a Bank Group ICT Strategy, go a long way in addressing the issues identified in the OED study. In particular, the importance of ICT for development is now better acknowledged within the institution and the Bank Group's role has been clarified along four main strategic directions: (i) broadening and deepening sector and institutional reform; (ii) increasing access (particularly by the poor) to information infrastructure; (iii) supporting ICT human capacity; and (iv) supporting ICT applications in a broad range of sectors, from public administration and finance to health and education. A Good Practice (GP) statement has been issued, which clarifies and expands on the former OP 4.50.

Box 6: CODE Response

The Committee on Development Effectiveness (CODE) was pleased to note the concurrence of management and staff with the recommendations of OED/OEG, as well as their timely presentation in support of the Sector Strategy Paper. CODE agreed that bridging the digital gap is a development priority, and many members supported IFC taking a more proactive role in the sector. The members held a range of views on the individual issues, including the extent of the digital divide, how it could be bridged, and the advantages of doing so; the causes of the disconnect between well-performing projects and poor sector performance at the country level; the role of the public sector in the provision of services and achieving universal coverage, and the extent to which it should be involved; and the appropriateness and scope of the OED/OEG recommendations. The Committee noted the importance of clarifying the policy links between the Sector Strategy Paper and the Bank's overall poverty reduction strategy, as well as sensitizing client countries to the concrete benefits of investments in information infrastructure in the realization of poverty reduction and development goals.

The Committee agreed to further discussions of strategy for this sector.



Director-General, Operations Evaluation: *Robert Picciotto*
 Director, Operations Evaluation Department: *Gregory Ingram*
 Director, Operations Evaluation Group: *W.E. Stevenson*
 Task Managers: *Alain Barbu, Rafael Dominguez*

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Manager, Partnerships and Knowledge: *Oswaldo Feinstein* •
 Editor-in-Chief: *Elizabeth Campbell-Pagé* • Series Editor:
Caroline McEuen • Dissemination: *Juicy Qureishi-Huq*

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