



INFORMATION INFRASTRUCTURE

The World Bank Group's Experience

*A Joint Operations Evaluation Department—
Operations Evaluation Group Review*

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Alain Barbu
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Washington, D.C.



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FOREWORD

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This joint OED/OEG study follows up OED's 1993 review of the Bank's experience in telecommunications. It assesses how World Bank Group assistance from 1993 onward has influenced the development of information infrastructure (the mix of telecommunications networks, computing hardware and software, and services required for the efficient transmission of information, together with the related policy, legal, and institutional framework) in developing countries.

It finds that the recommendations of the 1993 review have generally been heeded with: (a) the adoption of a "new" private-sector-led agenda (emphasizing privatization, competition, and independent regulation) under Operational Policy (OP) 4.50 (1995); (b) the incorporation of the "new" agenda in most recent Bank lending and non-lending interventions; and (c) the increasing share of IFC in total Bank Group funding commitments for telecommunications (from 8 percent in 1986–92 to 32 percent in 1993–99). It also finds that both the Bank and the IFC telecommunications portfolios have continued to perform better than average but cautions that existing measures do not capture the bulk of Bank Group information infrastructure (II) activity—the telecommunications components of multisector projects, the estimated \$2 billion per year worth of IT components in Bank projects, and the wide-ranging analytical and advisory services and partnerships—which for the most

PREFACIO

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Este estudio conjunto del Departamento de Evaluación de Operaciones (DEO) y el Grupo de Evaluación de Operaciones se lleva a cabo en seguimiento del examen de la experiencia del Banco en materia de telecomunicaciones efectuado en 1993 por el DEO. Se analiza en él la medida y la forma en que la asistencia prestada por el Grupo del Banco Mundial desde 1993 en adelante ha influido en el desarrollo de la infraestructura de la información (el conjunto de redes de telecomunicaciones, computadoras, programas informáticos y servicios necesarios para la transmisión eficiente de información, junto con el marco de política, jurídico e institucional conexo) en los países en desarrollo.

Se llega a la conclusión de que se han seguido en general las recomendaciones del examen de 1993 mediante: a) la adopción de un "nuevo" programa encabezado por el sector privado (en que se hace hincapié en la privatización, la competencia y la reglamentación independiente) con arreglo a la política operacional OP 4.50 (1995); b) la incorporación del "nuevo" programa en las actividades crediticias y no crediticias más recientes del Banco, y c) el aumento de la participación de la CFI en los compromisos de financiamiento totales del Grupo del Banco para el sector de telecomunicaciones (de 8% en 1986–92 a 32% en 1993–99). Se determina también que las carteras de telecomunicaciones del Banco y de la CFI han se-

AVANT-PROPOS

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Cette étude conjointe de l'OED et de l'OEG fait suite à la revue par l'OED, en 1993, de l'expérience de la Banque dans le secteur des télécommunications. Elle examine la façon dont l'aide du Groupe de la Banque Mondiale, depuis 1993, a influencé le développement des infrastructures d'information (c'est à dire l'ensemble constitué par les réseaux de télécommunications, l'équipement en matériel informatique, les logiciels, les services nécessaires pour une transmission efficace de l'information et le cadre stratégique, juridique et institutionnel du secteur) dans les pays en développement.

L'étude conclut que les recommandations de la revue de 1993 ont été généralement appliquées grâce aux mesures suivantes: a) l'adoption d'une nouvelle politique dominée par le développement du secteur privé (qui met l'accent sur la privatisation, la concurrence et un pouvoir régulateur indépendant) dans le cadre de la Politique Opérationnelle 4.50 (1995); l'intégration de cette nouvelle politique dans la plupart des opérations financières et non financières de la Banque; et c) l'augmentation de la part de la SFI dans le total du financement des télécommunications par le Groupe de la Banque (de 8% en 1986–92 à 32% en 1993–99). L'étude constate également que la performance du portefeuille de la Banque et de la SFI dans le secteur des télécommunications continue d'être supérieure à la moyenne, mais note que ces indicateurs ne couvrent pas une grande

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part is not subject to systematic performance monitoring.

At the same time, the study points out that, at a time when the information revolution presents developing countries with far-reaching opportunities and risks, the

Bank Group's ability to play a global policy leadership role has been hampered by its benign neglect of the sector at both the strategic and country management levels, as well as a fragmented internal organization. As a result, the number of countries where it has had a real impact is limited. In a majority of developing countries, the sector reform agenda remains unfinished, tele-density remains far below the minimum threshold required to join the information revolution, private investment in most lower-income countries has been lagging, and connectivity gaps have been growing within countries (between urban and rural areas and between higher and lower income groups).

The study recommends that: (a) the Bank Group restate its strategy in the broader information infrastructure, transcending its traditional focus on telecommunications, with a particular focus on optimizing the use of its instruments (lending and nonlending) and expert skills; and (b) gaps in the existing monitoring and evaluation systems be filled, at both the project and global level, to provide the necessary framework to assess the future effectiveness of the revised strategy.

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guido teniendo un desempeño mejor que el promedio, pero se advierte que las medidas actuales no captan el grueso de la actividad del Grupo del Banco en materia de infraestructura de la información—los componentes

de telecomunicaciones de los proyectos multisectoriales, los US\$2.000 millones por año aproximadamente de componentes de tecnología de la información en los proyectos del Banco, y la amplia gama de asociaciones y servicios de análisis y de asesoramiento—que en su mayor parte no están sujetos a un seguimiento sistemático del desempeño.

Al mismo tiempo, en el estudio se señala que en un momento en que la revolución de la información ofrece a los países en desarrollo grandes oportunidades y riesgos, la capacidad del Grupo del Banco de desempeñar un papel de liderazgo a nivel mundial en las políticas se ha visto menoscabada por la falta de atención prestada al sector tanto al nivel estratégico como al nivel de gestión en los países, y también por una organización interna fragmentada. Como resultado de esto, el número de países en que ha tenido un impacto real es limitado. En la mayoría de los países en desarrollo, el programa de reforma del sector está inconcluso, la teledensidad sigue muy por debajo del umbral mínimo necesario para participar en la revolución de la información, la inversión privada en la mayoría de los países de ingreso bajo es insuficiente y las deficiencias de conectividad han ido en aumento dentro de los países (entre zonas urbanas y rurales, y entre grupos de altos y bajos ingresos).

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partie des activités du Groupe de la Banque dans le domaine des infrastructures d'information — les composantes télécommunications des opérations multisectorielles, les composantes technologie de l'information des projets de la

Banque (dont le montant total est estimé à environ \$2 milliards par an) et une multitude de travaux analytiques, de services de conseil et de partenariats — qui pour la plupart ne sont pas soumis à un suivi systématique de la performance.

En même temps, l'étude souligne qu'à une époque où la révolution de l'information offre aux pays en développement des opportunités considérables, mais comporte aussi quelques risques, la capacité du Groupe de la Banque de jouer, à l'échelle mondiale, un rôle de leader sur le plan des politiques sectorielles est affectée par l'oubli relatif du secteur dans les stratégies et les opérations par pays, comme d'ailleurs par la fragmentation de l'organisation interne. Le résultat est que l'intervention de la Banque n'a eu un véritable impact que dans un nombre limité de pays. Dans la plupart des pays en développement, les réformes sectorielles sont restées inachevées, la densité du réseau de télécommunications est très inférieure au seuil minimum indispensable pour participer aux bénéfices de la révolution de l'information, les investissements privés progressent lentement dans la plupart des pays à faible revenu et les gaps de communication s'aggravent dans ces pays (entre les zones urbaines et rurales et entre les riches et les pauvres).

L'étude conclut par les recommandations suivantes: a) le Groupe de la Banque doit dépasser les frontières

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En el estudio se recomienda: a) que el Grupo del Banco reformule su estrategia relativa a la infraestructura de la información en sentido amplio, más allá del foco de atención tradicional en las telecomunicaciones, concentrándose especialmente en la optimización del uso de sus instrumentos (tanto crediticios como no crediticios) y sus conocimientos especializados, y b) que se subsanen las deficiencias en los sistemas de seguimiento y evaluación existentes, tanto al nivel de los proyectos como al nivel global, a fin de proporcionar el marco necesario para evaluar la eficacia futura de la estrategia revisada.

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de ses activités traditionnelles axées sur les télécommunications et réaffirmer ses objectifs stratégiques qui concernent l'ensemble des infrastructures d'information, mettant l'accent sur l'emploi optimal de ses instruments (financiers et non financiers) et de ses compétences; b) les déficiences présentes des systèmes de suivi et d'évaluation doivent être corrigées — à l'échelle des projets et de façon globale — afin de mettre en place un cadre pour l'évaluation future de l'efficacité de la nouvelle stratégie.



Robert Picciotto
Director-General, Operations Evaluation

EXECUTIVE SUMMARY

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With the globalization of the world's economy, communications is increasingly critical to economic growth and development. Indeed, the convergence of information and communication technologies and the explosion of the Internet are said to be launching an information revolution with the potential to reshape society and commerce. The extent to which developing countries benefit from this revolution will largely depend on the development of their "information infrastructure"—the increasingly integrated mix of telecommunications networks, computing hardware and software, and value-added services required for the efficient transmission of information, together with the related policy, legal, and institutional frameworks. While this study updates the 1993 OED telecommunications review, it also assesses how the World Bank Group's assistance has addressed the challenge brought about by the convergence of telecommunications and information technology (IT). It stops short, however, of a detailed evaluation of IT components of Bank and IFC projects, given their sheer number and the absence of detailed monitoring and evaluation (M&E) data.

While recognizing the Bank's achievements in the sector, the 1993 OED telecommunications review questioned the relevance of Bank interventions through much of the 1980s and early 1990s, pointing to the "disconnect" between the apparent success of Bank projects (with telecommunications standing out as

RÉSUMEN

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Con la globalización de la economía mundial, las comunicaciones son cada vez más importantes para el crecimiento y el desarrollo económico. De hecho, se ha dicho que la convergencia de las tecnologías de la información y de las comunicaciones y la explosión de la Internet han puesto en marcha una revolución de la información que podría alterar fundamentalmente las modalidades de la sociedad y del comercio. La medida en que los países en desarrollo se beneficiarán de esta revolución dependerá en buena parte del desarrollo de su "infraestructura de la información", a saber, el conjunto cada vez más integrado de redes de telecomunicaciones, equipo y programas de computadoras y servicios de valor añadido conexos necesarios para la transmisión eficiente de la información, junto con el marco jurídico, institucional y de políticas correspondiente. Este estudio actualiza el examen del sector de telecomunicaciones realizado en 1993 por el Departamento de Evaluación de Operaciones (DEO), y también evalúa la forma en que la asistencia del Grupo del Banco Mundial ha hecho frente al desafío planteado por la convergencia de las telecomunicaciones y la tecnología de la información (TI). Sin embargo, no pretende ser una evaluación detallada de los componentes de TI de los proyectos del Banco y de la CFI en razón de su gran número y de la ausencia de datos completos para fines de seguimiento y evaluación.

Aunque se reconocían los logros del Banco en el sector, en el examen

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Avec la globalisation de l'économie mondiale, le secteur des communications joue un rôle de plus en plus important dans la croissance et le développement économique. On dit, en effet, que l'alliance des technologies de l'information et des communications et l'explosion de l'Internet sont en train de déclencher une révolution de l'information capable de transformer de façon fondamentale le commerce et les relations sociales. La participation des pays en développement aux bénéfices de cette révolution dépendra beaucoup du développement de leurs «infrastructures d'information» (l'ensemble de plus en plus intégré que constituent les réseaux de télécommunication, les équipements informatiques, les logiciels et les services complémentaires nécessaires à une transmission efficace de l'information), ainsi que du cadre stratégique, juridique et institutionnel régissant le secteur. La présente étude met à jour la revue de l'OED de 1993 sur les télécommunications et évalue comment le Groupe de la Banque Mondiale a relevé le défi de l'alliance des télécommunications et de la technologie de l'information. Cependant l'étude ne comprend pas l'évaluation détaillée des composantes «technologie de l'information» intégrées dans des projets de la Banque et de la SFI; en effet ces composantes sont trop nombreuses et la Banque ne dispose pas des données nécessaires en raison de l'absence d'un système adéquat de suivi et d'évaluation.

La revue de l'OED de 1993 sur les télécommunications reconnaissait

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the top-performing sector in the Bank) and the sector's persistent dismal situation in most Bank borrower countries (in access, demand satisfaction, and quality of service). OED recommended (a) adoption and implementation of a telecommunications sector policy reflecting the three pillars of the "new" private sector-led sector agenda (privatization, competition, and regulation), while filling outstanding policy gaps (particularly regarding universal access); and (b) a more innovative use of Bank instruments, combined with greater coordination with IFC.

On balance, these recommendations have been heeded with (a) the issuance of OP 4.50 (1995); (b) the incorporation of the "new" agenda in most recent Bank lending and nonlending interventions; (c) the significant shifts that have taken place in staff skills; and (d) the increasing share of IFC in total Bank Group funding commitments for telecommunications (from \$210 million, or 8 percent of \$2.6 billion, during FY86-92 to \$706 million, or 32 percent of \$2.2 billion, during FY93-99). However, recommendations have been only partially implemented in two areas: (a) the potential for synergies between IFC and the Bank has not been fully taken advantage of (leading to the recent decision to merge the telecommunications units of the Bank and IFC); and (b) the Bank has not sufficiently diversified the use of its instruments, with more than half of its post-1993 lending in the form of multisector technical assistance (TA) loans.

The review of "old" agenda Bank projects completed after 1993 confirms lessons already documented in the 1993 review concerning the in-

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de las telecomunicaciones realizado por el DEO en 1993 se cuestionaba la pertinencia de las intervenciones del Banco en gran parte de los años ochenta y comienzos de los años noventa, y se señalaba la "desconexión" entre el éxito aparente de los proyectos del Banco (el sector de telecomunicaciones era el más exitoso del Banco) y la persistente situación desoladora del sector en la mayor parte de los países prestatarios del Banco (en lo que respecta al acceso, satisfacción de la demanda y calidad de los servicios). El DEO recomendaba a) la aprobación y la aplicación de una política para el sector de telecomunicaciones que reflejara los tres pilares del "nuevo" programa encabezado por el sector privado (privatización, competencia y reglamentación), y la eliminación de las deficiencias existentes (en particular con respecto al acceso universal), y b) un uso más innovador de los instrumentos del Banco, combinados con una mayor coordinación con la CFI.

En definitiva, esas recomendaciones han sido escuchadas con a) la emisión de la Política Operacional (OP) 4.50 (1995); b) la incorporación del "nuevo" programa en la mayor parte de los préstamos y actividades no crediticias más recientes del Banco; c) el cambio significativo que ha habido en los conocimientos del personal, y d) la creciente participación de la CFI en el total del financiamiento del Grupo del Banco para las telecomunicaciones (de US\$210 millones, es decir, el 8% de US\$2.600 millones, en los ejercicios de 1986-92 a US\$706 millones, o sea, 32% de US\$2.200 millones en los ejercicios de 1993-99).

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les résultats obtenus par la Banque dans le secteur, mais contestait la pertinence des interventions de la Banque pendant la plus grande partie des années 1980 et au début des années 1990, soulignant la contradiction entre le succès apparent des projets de la Banque (la performance du secteur des télécommunications étant supérieure à celle de tous les autres secteurs) et la situation catastrophique du secteur dans la plupart des pays emprunteurs (sur le plan de l'accès au service, de la satisfaction de la demande et de la qualité). L'OED recommandait donc: a) l'adoption et la mise en œuvre d'une politique des télécommunications reflétant les trois principaux objectifs (privatisation, concurrence et régulation) d'une « nouvelle » politique axée sur le leadership du secteur privé, mais corrigeant les défauts des systèmes existants (notamment sur le plan de l'accès universel), et b) un emploi plus imaginatif des instruments de la Banque et une meilleure coordination avec la SFI.

Dans l'ensemble, ces recommandations ont été appliquées, grâce aux mesures suivantes: a) la publication de la nouvelle Politique Opérationnelle 4.50 (en 1995); b) l'intégration des « nouveaux » objectifs dans la plupart des prêts et activités non financières récentes de la Banque; c) d'importants changements dans la structure des compétences disponibles, et d) l'augmentation de la part de la SFI dans le financement du secteur par le Groupe de la Banque (de \$210 millions, soit 8 pourcent d'un total de \$2,6 milliards au cours des exercices 1986-92, à \$706 millions, soit 32 pourcent d'un total de \$2,2 milliards au cours des exercices 1993-

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adequacy of traditional state monopolies to develop a modern network infrastructure. But it is still too early to measure the actual outcomes (in coverage, prices, and quality of service) of reforms promoted by Bank projects under the “new” agenda. These are still in the early stages of implementation and only a handful have been evaluated (Argentina, Mexico). Yet the evaluation of mature IFC projects and the review of information on ongoing Bank projects already confirm a number of lessons that have been amply documented in the research literature:

- Even partial competition (via the liberalization of mobile telephony) brings about increased investments, lower prices, and better quality of 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 is a major constraint to effective and independent regulation.
- Transparency in licensing and tariff setting (particularly for interconnection rates), as well as clarity about the role of the incumbent operator, is critical to attracting private investment.
- Based on Bank experience, private monopolies are not always better than public ones.

While in most cases the ultimate outcomes of the Bank’s refocused assistance and the IFC’s activities in specific countries cannot be fully measured, results already achieved under some recent projects—primarily in the few countries where Bank Group involvement was sub-

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Sin embargo, las recomendaciones se han puesto en práctica sólo parcialmente en dos esferas: a) no se han aprovechado del todo las potenciales sinergias entre la CFI y el Banco (lo cual llevó a la decisión adoptada recientemente de fusionar las unidades de telecomunicaciones del Banco y la CFI), y b) el Banco no ha diversificado el uso de sus instrumentos en la medida adecuada, y que más de la mitad del financiamiento concedido después de 1993 ha correspondido a préstamos de asistencia técnica multisectoriales.

El examen, en el marco del “antiguo programa”, de los proyectos del Banco completados después de 1993 confirma las enseñanzas ya documentadas en el examen de 1993 en cuanto a la ineficiencia de los monopolios estatales tradicionales para desarrollar una moderna infraestructura de redes. Pero es todavía muy pronto para medir los resultados efectivos (en cuanto a cobertura, precios y calidad de servicio) de las reformas promovidas por el Banco con arreglo al “nuevo” programa. Esos proyectos aún están en las primeras etapas de ejecución y sólo se han evaluado unos pocos (Argentina y México). Sin embargo, la evaluación de los proyectos de la CFI próximos a terminarse y el examen de la información sobre los proyectos en marcha del Banco confirman ya varias enseñanzas que se han documentado ampliamente en la investigación:

- Que incluso la competencia parcial (a través de la liberalización de la telefonía móvil) trae aparejado un aumento de las inversiones, precios más bajos y una mejor calidad de servicio;

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99). Cependant, dans deux domaines, les recommandations n’ont été que partiellement exécutées: a) le Groupe de la Banque n’a pas suffisamment exploité toutes les synergies possibles entre la Banque et la SFI (d’où la décision récente des deux institutions d’organiser la fusion de leurs unités de télécommunications) ; b) la Banque n’a pas assez diversifié les instruments employés (les prêts d’assistance technique multisectoriels représentent plus de la moitié des opérations de la Banque depuis 1993).

L’analyse des projets postérieurs à 1993 conçus sur la base des « anciennes stratégies » confirme les conclusions de la revue de 1993 sur l’incapacité des monopoles publics traditionnels de développer un réseau moderne. Néanmoins, il est encore trop tôt pour évaluer l’impact réel (accès, prix et qualité du service) des réformes encouragées par les projets inspirés par la nouvelle stratégie. En effet, l’exécution de ces projets vient seulement de commencer et très peu d’entre eux (Argentine et Mexique) ont déjà fait l’objet d’une évaluation. Cependant l’examen de certains projets plus avancés de la SFI et l’analyse des données disponibles sur les projets en cours de la Banque confirment plusieurs conclusions des nombreuses recherches faites sur le sujet:

- Même une concurrence partielle (par la libéralisation de la téléphonie mobile) stimule l’investissement, réduit les prix et améliore la qualité du service.
- La mise en place d’un organisme régulateur n’est pas un substitut adéquat pour des politiques et des stratégies gouvernementales bien définies.

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stantial and sustained—are encouraging (for example, significant private investment commitments and initial reductions in prices of both mobile and basic telephony in Bolivia, Morocco, Peru, and Sri Lanka). But this group of countries is small, and the current state of information infrastructure (II) in the developing world is decidedly mixed and presents a sobering picture. It belies the views of many nonsector specialists inside and outside the Bank Group that most developing countries have entered the postreform era and that recent progress in technology leaves them well positioned to gain from the information revolution:

- While telecommunications sector restructuring is now on the policy agenda of most developing countries, countries that have started to implement reform in earnest (that is, beyond the relatively “easy” steps of opening up value-added services) are in the minority. And some of these countries are facing serious implementation problems and delays (particularly with regard to the privatization of the basic service provider, the functioning of the new regulatory body, and the introduction of effective competition).
- Quality of service has improved and average growth in teledensity (both fixed and wireless) has recently accelerated in most countries, largely due to the rapid rise of mobile telephony. But penetration rates in a majority of countries remain far below 10 lines per 100 inhabitants, the level that experts consider the basic connectivity threshold to join the information revolution.

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- Que el establecimiento de un órgano de reglamentación no elimina la necesidad de una política y una estrategia gubernamental bien articulada;
- Que la escasez de personal calificado local en los países pobres es una limitación grave para la reglamentación efectiva e independiente;
- Que la transparencia en la concesión de licencias y la fijación de las tarifas (en particular para las tasas de interconexión), así como la claridad en cuanto al papel de la empresa operadora, son fundamentales para atraer inversiones privadas, y
- Que, sobre la base de la experiencia del Banco, los monopolios privados no siempre son mejores que los públicos.

Aunque en la mayoría de los casos no es posible medir en su totalidad los resultados definitivos de la asistencia reorientada del Banco y de las actividades de la CFI en países específicos, los resultados que ya se han obtenido en algunos proyectos recientes, sobre todo en los nuevos países en los que la participación del Grupo del Banco ha sido considerable y continuada, son alentadores (por ejemplo, importantes compromisos de inversión privada y reducción inicial de los precios de la telefonía móvil y básica en Bolivia, Marruecos, Perú y Sri Lanka). Pero ese grupo de países es pequeño y el estado actual de la infraestructura de la información en los países en desarrollo es muy variado e invita a la reflexión. Desmiente la opinión de muchos especialistas ajenos al sector tanto del Grupo del Banco como de otros sitios de que la mayoría de los países en desarrollo han entrado en

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- Le manque d'experts locaux dans les pays pauvres est un obstacle majeur à une régulation efficace et indépendante.
- La transparence dans l'octroi des permis d'exploitation et la fixation des tarifs (en ce qui concerne notamment les tarifs d'interconnexion) et une définition précise du rôle de l'opérateur sont indispensables pour la mobilisation d'investissements privés.
- L'expérience de la Banque montre que les monopoles privés ne sont pas toujours plus efficaces que les monopoles publics. Il n'est pas encore possible de mesurer l'impact final des nouvelles orientations de l'aide de la Banque et des activités de la SFI dans un certain nombre de pays précis; mais les résultats déjà obtenus dans le cadre de certains projets – surtout dans les nouveaux pays où les interventions du Groupe de la Banque sont importantes et continues – sont encourageants (citons par exemple l'importance des investissements privés et la réduction des tarifs de la téléphonie mobile et des services de base en Bolivie, au Maroc, au Pérou et au Sri Lanka). Néanmoins, il s'agit seulement d'un petit nombre de pays et la condition présente des infrastructures d'information (II) dans le tiers monde est inégale et dans l'ensemble peu satisfaisante, contrairement aux vues de nombreux généralistes – à l'intérieur et à l'extérieur de la Banque – selon lesquelles la plupart des pays en développement sont au stade de l'après-réforme et – grâce aux progrès récents de la technologie – sont bien placés pour bénéficier pleinement des effets de la révolution de l'information:

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- Despite the rise in private sector involvement in countries that have opened up their sectors, overall investment levels in lower-income and lower-middle-income countries are far from adequate to reach the connectivity threshold anytime soon.
- Existing international service revenue sources of many developing country telecommunications networks are under serious threat from cost-avoidance practices such as callback and use of the Internet, and from the impending demise of the international revenue settlement scheme.
- Within countries, connectivity gaps are growing between urban and rural areas and between higher- and lower-income groups.
- With very few exceptions, most countries have not embarked upon—nor even recognized the need for—a rethinking and broadening of their telecommunications policy to reflect linkages with other potentially IT-intensive sectors (such as education, health, and tax and trade reform).

Why is there such a disconnect between an apparently responsive Bank Group approach and the sobering IT picture?

First, the pace of change in the overall sector environment (both in technology and in market structure) has accelerated, particularly in the late 1990s with the onset of the Internet. The development of broadband access (which itself requires minimum levels of basic connectivity) rather than mere voice connection has become the new goalpost and the prerequisite for developing country access to the new information soci-

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- la etapa de postreforma y que los progresos tecnológicos recientes los han dejado en condiciones de cosechar los frutos de la revolución de la información:
- Si bien la reestructuración del sector de telecomunicaciones figura actualmente en el programa de políticas en la mayor parte de los países en desarrollo, los países que han empezado realmente a aplicar decididamente la reforma (es decir, más allá de los pasos relativamente “fáciles” de abrir los servicios de valor añadido) son una minoría. Además, algunos de ellos están haciendo frente a problemas de aplicación y demoras graves (en particular, con respecto a la privatización del proveedor de servicios básicos, el funcionamiento del nuevo órgano de reglamentación y la introducción de una competencia eficaz).
 - La calidad general del servicio ha mejorado y la teledensidad media (fija e inalámbrica) ha aumentado en la mayoría de los países, en buena medida debido al rápido aumento de la telefonía móvil. Sin embargo, las tasas de penetración en la mayoría de los países siguen muy por debajo de 10 líneas por cada 100 habitantes, el nivel que los expertos consideran que es el umbral de conectividad básico para participar en la revolución de la información.
 - Pese al aumento de la participación del sector privado en los países que han abierto sus sectores, los niveles de inversiones globales en los países de ingreso bajo y mediano distan mucho de ser suficientes para llegar al umbral de conectividad en un futuro próximo.

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- La restructuration du secteur des télécommunications fait désormais partie des politiques de la plupart des pays en développement, mais seuls quelques pays ont véritablement commencé à mettre en œuvre la réforme (au delà des mesures relativement « faciles » que sont la libéralisation des services auxiliaires); en outre, dans plusieurs de ces pays, les progrès sont lents et rencontrent de sérieux problèmes d'exécution (notamment en ce qui concerne la privatisation du fournisseur des services de base, le fonctionnement du nouvel organisme régulateur et l'introduction d'une concurrence effective).
- Dans la plupart des pays, la qualité du service est meilleure et la densité moyenne du réseau (fixe et mobile) a augmenté, grâce surtout à la croissance rapide de la téléphonie mobile. Cependant, dans un très grand nombre de pays, les taux de pénétration restent très inférieurs au taux de 10 lignes pour 100 habitants, que les experts considèrent comme le seuil minimum de connectivité pour une participation effective aux bénéficiaires de la révolution de l'information.
- Malgré la croissance des activités privées dans les pays qui ont libéralisé le secteur, les investissements dans les pays pauvres – et dans la tranche inférieure des pays à revenu intermédiaire – sont très inférieurs aux volumes nécessaires pour atteindre rapidement les seuils minimums de connectivité.
- Dans plusieurs pays en développement, les recettes internationales

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ety. And the rapid convergence of telecommunications and IT, and the way they increasingly transform all aspects of society, has rendered obsolete the Bank's traditional focus on a narrowly defined telecommunications sector.

Second, in the face of these new challenges, the Bank Group slipped into complacency for several reasons: (a) a lack of recognition outside the Bank's II community that the efficient transfer of knowledge—whose critical importance the *World Development Report 1998: Knowledge for Development* rightly emphasized—requires a foundation of network infrastructure (that is, levels of connectivity) that most developing countries are still very far from having; (b) the mistaken perception among large sections of management and staff that opening the sector to private investment, combined with the introduction of new technologies, would enable poor countries to “leapfrog” into the information age with little or no need for a public sector role—a perception belied by developed countries' experience; (c) the apparent health of the Bank Group's declining II portfolio—explained in part by IFC's concentration on generally higher-risk, but higher-reward, projects and the inadequacy of the Bank Group's performance monitoring systems with regard to components of multisector projects (now accounting for the bulk of the Bank's telecommunications lending activity and as much as \$2 billion in annual IT support) and wide-ranging advisory and analytical services; and (d) the illusion of action created by the sponsoring of myriad trust-funded activities, initiatives, partnerships, and “microevents” related to the II sector, with little co-

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• Las actuales fuentes de ingresos de los servicios internacionales de las redes de telecomunicaciones de muchos países en desarrollo se ven gravemente amenazadas por las prácticas dirigidas a evitar costos,

como los servicios de devolución automática de llamadas y el uso de la Internet, así como por la inminente desaparición del sistema de liquidación de los ingresos internacionales.

- Dentro de los países, están aumentando las diferencias de conectividad entre las zonas urbanas y las zonas rurales, y entre los grupos de ingreso alto y bajo.
- Con muy pocas excepciones, la mayoría de los países no han iniciado el procedimiento de replantear y ampliar su política de telecomunicaciones, ni han reconocido siquiera la necesidad de hacerlo, para que queden reflejados los vínculos con otros sectores posiblemente intensivos en materia de infraestructura de la información (como la educación, la salud, y la reforma fiscal y comercial).

¿Por qué existe esta desconexión entre un enfoque aparentemente adecuado del Grupo del Banco y este cuadro sombrío de la infraestructura de la información?

En primer lugar, el ritmo de cambio de las condiciones generales del sector (por ejemplo, en términos de tecnología y estructura del mercado) se ha acelerado, sobre todo a fines de los años noventa con el inicio de la Internet. El desarrollo del acceso de banda ancha (que requiere en sí mismo niveles mínimos de conectividad básica) en lugar de una simple conexión de voz, se ha

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des réseaux de télécommunications sont sérieusement menacées par les techniques du callback, l'emploi de l'Internet et le démantèlement prochain du système de règlement des communications internationales.

- À l'intérieur des pays, les disparités des taux de connectivité entre les zones urbaines et les zones rurales et entre les populations riches et pauvres sont en train de s'aggraver.
- Sauf un tout petit nombre d'exceptions, la plupart des pays – plusieurs ne sont même pas conscients du problème – n'ont pas encore entrepris les révisions et élargissements des politiques de télécommunications qui sont nécessaire pour intégrer les relations avec d'autres secteurs capables d'une utilisation intensive des infrastructures d'information (par exemple l'éducation, la santé et les réformes fiscales et commerciales).

D'où vient cette contradiction entre la situation peu satisfaisante du secteur des II et l'évolution apparemment favorable des priorités du Groupe de la Banque?

Premièrement, l'évolution des technologies et de la structure du marché s'est accélérée, surtout depuis la fin des années 1990 au moment du lancement de l'Internet. Le remplacement des communications vocales par une multitude de services (qui nécessitent un seuil minimum de connectivité) est devenu le nouvel objectif du secteur; c'est aussi la condition nécessaire pour la participation des pays en développement à la nouvelle société d'information. Enfin, les méthodes traditionnelles de la Banque – la

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ordination or monitoring of their design, funding, and impact. A noteworthy exception is *infoDev*, an innovative Bank-sponsored public-private grant program, which proved its agility in launching a quick and effective Y2K assistance program and has the potential to play a more central role in the Bank Group's II assistance.

Third, the Bank Group's fragmented organization in the sector (with many units active, and sometimes competing, in the provision of II-related assistance), combined with distorted internal incentives created by the Bank's budget and work planning systems, has hampered the Bank Group's ability to optimize the use of its available instruments and expert skills. In particular, task management arrangements and budget limitations associated with the widespread use of multisector loans by the Bank have prevented optimal deployment of specialized anchor staff. And the absence of a clearly recognized and funded informatics thematic group has further contributed to this fragmentation in IT-specific issues. Similarly, fragmentation in the administration of Bank-managed trust funds and internal pricing distortions for advisory and analytical services (for example, between economic and sector work, trust-funded technical assistance, and the fee-based services of IFC's Corporate Finance Services Department) have often resulted in poor coordination in the provision of Bank Group advice to countries. In turn, these constraints have affected the design of Bank interventions, which too often have focused primarily on inputs and processes (privatization transactions, hiring of legal or regulatory consultants) without sufficient attention to

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convertido ahora en la nueva meta y el requisito previo para el acceso de los países en desarrollo a la nueva sociedad de la información. Además, la rápida convergencia de las telecomunicaciones y la tecnología de la información, y la manera en que ambas están transformando cada vez más todos los aspectos de la sociedad, han dejado obsoleta la atención que el Banco ha prestado tradicionalmente a un sector de telecomunicaciones definido en forma muy específica.

En segundo lugar, ante estos nuevos desafíos, el Grupo del Banco cayó en la complacencia por varias razones: a) la falta de reconocimiento fuera de la comunidad que se ocupa de la infraestructura de la información en el Banco de que la transferencia eficiente del conocimiento, cuya importancia crítica se puso de relieve con razón en el Informe sobre el desarrollo mundial 1998/99: El conocimiento al servicio del desarrollo, requiere como base una infraestructura de redes (es decir, niveles de conectividad) que la mayoría de los países en desarrollo están muy lejos de tener; b) la percepción errónea de grandes segmentos de directivos y del personal de que la apertura del sector a la inversión privada, combinada con la introducción de nuevas tecnologías, permitiría a los países pobres "saltar" a la era de la información, sin ninguna o con muy poca necesidad de participación estatal; esta percepción ha sido desmentida por la experiencia de los países desarrollados; c) la aparente solidez de la decreciente cartera de proyectos de infraestructura de la información del Grupo del Banco, que se explica en parte por la concentración de la CFI

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priorité accordée au seul secteur des télécommunications au sens étroit du terme – sont désormais dépassées, du fait de la convergence croissante des télécommunications et des technologies de l'information et des transformations qu'elle implique pour tous les aspects de la vie sociale.

Deuxièmement, en face de ces nouveaux défis, le Groupe de la Banque a relâché ses efforts pour les raisons suivantes: a) peu nombreux, en dehors des spécialistes des infrastructures d'information de la Banque, sont ceux qui reconnaissent qu'un transfert efficace du savoir – dont le Rapport sur le Développement dans le Monde: Connaissance au Service du Développement, de 1998, soulignait à juste titre l'importance – doit être basé sur une infrastructure de réseau (c'est à dire des taux de connectivité) que la plupart des pays en développement sont encore loin de posséder; b) beaucoup d'experts et de cadres supérieurs de la Banque s'imaginent à tort que la simple ouverture du secteur à l'investissement privé et l'introduction des nouvelles technologies permettront aux pays pauvres de sauter dans l'ère de l'information, sans intervention significative du secteur public – notion que dément l'expérience passée des pays développés; c) la santé apparente du portefeuille – en déclin – du Groupe de la Banque dans le secteur des infrastructures d'information s'explique en partie par la concentration des financements de la SFI sur des projets à haut risque et à haut rendement et par l'inefficacité des systèmes de suivi du Groupe de la Banque en ce qui concerne d'une part les composantes

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substantive policy and strategic issues, arguably the area where the Bank can add the most value. And the lack of a strong institutional framework for effective coordination between the Bank and IFC may have resulted in forgone opportunities. Meanwhile, high-quality, high-impact Bank Group activities were found to be associated with cases where these disincentives were overcome by individual staff initiatives or a country director's strategic vision of II.

Finally, not until recently was the need recognized for an integrated *operational strategy* (at the global, regional, and country levels) that goes beyond the general policy principles in OP 4.50 and reassesses the Bank Group's role and comparative advantage in the new, broader II "sector." IFC's annual "strategies" have been more akin to detailed marketing plans and have lacked a well-articulated policy and strategic framework. These gaps further contributed to the fragmentation of the Bank Group's approach to II in individual countries, with critical decisions too often left to staff, consultants, or not addressed at all for lack of budget resources (as appears to be the case in many Bank multisector projects). (For example, regarding what advice to give on sector structure, licensing regimes, approaches to universal service, or interconnection pricing; how to decide on the respective roles of the Bank and IFC; or how to establish linkages with other sectors such as health and education.) A case in point is the persisting ambiguity of the Bank Group's policy on the role of the public sector in fostering rural access, which has led staff to shy

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en proyectos generalmente de mayor riesgo pero de mayor rendimiento y por la deficiencia de los sistemas de seguimiento del desempeño del Grupo del Banco con respecto a los componentes de proyectos multisectoriales (que constituyen actualmente la mayor parte de los préstamos para telecomunicaciones del Banco y equivalen a un apoyo de US\$2.000 millones por año para la tecnología de la información), y a los variados servicios de asesoramiento y otros servicios no crediticios, y d) la apariencia de acción que se creó al apoyar una gran cantidad de actividades, iniciativas, asociaciones y "microeventos" relacionados con el sector de la infraestructura de la información y financiados con fondos fiduciarios, con escasa coordinación o seguimiento en cuanto a su diseño, financiamiento e impacto. Una excepción notable es infoDev, un programa innovador patrocinado por el Banco con donaciones públicas y privadas, que demostró su agilidad en el lanzamiento de un programa de asistencia rápido y efectivo para la transición al año 2000 y que tiene posibilidades de desempeñar un papel más central en la asistencia del Grupo del Banco en el ámbito de la infraestructura de la información.

En tercer lugar, la organización particularmente fragmentada del Grupo del Banco en el sector (al contar con muchas unidades activas, y a veces en competencia, en la prestación de asistencia relacionada con la infraestructura de la información), combinada con incentivos internos distorsionados creados por los sistemas de presupuesto y de planificación del trabajo del Banco, ha menoscabado la capacidad del

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II des projets multisectoriels (qui constituent aujourd'hui l'essentiel des prêts de la Banque aux télécommunications et représentent près de deux milliards de dollars d'appui annuel aux technologies de l'information), et d'autre part les nombreuses activités de conseil et autres interventions non financières du Groupe; enfin d) une illusion d'activité a été créée par le lancement d'une multitude d'initiatives, de partenariats et de microinterventions soutenues par des fonds fiduciaires, sans coordination et suivi effectif de la conception, du financement et de l'impact de ces initiatives. Une importante exception est l'infoDev, programme original de subventions publiques et privées, appuyé par la Banque, qui a démontré son agilité par le lancement rapide d'initiatives efficaces pour faciliter le passage à l'an 2000; infoDev peut être appelé à jouer un rôle plus important dans l'aide du Groupe de la Banque au secteur des II.

Troisièmement, l'organisation très fragmentée du Groupe de la Banque (de nombreuses unités interviennent dans le secteur des II et se font parfois concurrence) et les distorsions dans la structure des incitations internes (qui résultent des systèmes de planification et de budgétisation des activités de la Banque) n'ont pas permis au Groupe d'optimiser l'emploi des instruments et des compétences disponibles. En particulier le système des chefs de projets et les contraintes budgétaires résultant de l'emploi fréquent des prêts multisectoriels ont rendu impossible l'utilisation optimale des principaux spécialistes du secteur. De la même façon, la gestion dispersée des fonds fiduciaires et les

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away from promoting innovative policy options or proposing Bank financial support (for example, to private-public partnerships) in that area, leaving a gap that IFC has not been able to fill for lack of sufficient investor interest.

Notwithstanding the existence within the Bank Group of substantial expertise in areas related to II, benign neglect of the sector at both the strategic and country management levels has hampered the Bank's ability to play a policy leadership role. This is at a time when many developing countries are faced with the prospect of being left out of the information revolution altogether, with potentially irreversible consequences for their long-term economic and social well-being. Indeed, in recent years, the Bank Group missed the opportunity to reverse this trend on several occasions. *First*, in 1995, when the former Telecommunications and Information Division organized the highly successful first Symposium on Information and Development (with high-level representation from borrowing countries and industry leaders) without much operational follow-up by the Bank's Regional units. *Second*, in 1996, when the draft of a World Bank Strategy on Information in Development—itself largely built on the ground-breaking work of a 1990 Bankwide task force—was prepared but never finalized. And *third*, upon the publication of *World Development Report 1998: Knowledge for Development*, which had the potential to sensitize critical audiences to the magnitude of the challenges presented to our clients by the information revolution, but whose main impact so far has been the Bank's re-

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Grupo del Banco de optimizar el uso de los instrumentos disponibles y de sus conocimientos de expertos. En particular, la organización al nivel de los jefes de proyecto y las limitaciones presupuestarias asociadas con el uso generalizado por el Banco de préstamos multisectoriales han impedido el despliegue óptimo de personal de coordinación especializado. De manera análoga, como resultado de la fragmentación de la administración de los fondos fiduciarios gestionados por el Banco y de las distorsiones internas de los precios de los servicios analíticos y de asesoramiento (por ejemplo, entre los estudios económicos y sectoriales, la asistencia técnica financiada con fondos fiduciarios y los servicios basados en el cobro de honorarios que presta el Departamento de Cofinanciamiento y Servicios de Asesoría Financiera de la CFI), a menudo la coordinación de la asesoría del Grupo del Banco a los países ha sido deficiente. A su vez, esas limitaciones han afectado el diseño de las intervenciones del Banco, que con mucha frecuencia se han concentrado fundamentalmente en los insumos y procesos (transacciones de privatización, contratación de consultores jurídicos o especialistas en reglamentación) sin prestar suficiente atención a las cuestiones de política y estratégicas sustantivas, que constituyen posiblemente la esfera en que el Banco puede añadir más valor. Es posible también que la falta de un marco institucional sólido para una coordinación eficaz entre el Banco y la CFI haya llevado a la pérdida de oportunidades. Mientras tanto, se observó que las actividades de alta

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distorsions de prix entre les différentes formes de conseils et de travaux analytiques (par exemple entre les études économiques et sectorielles, les assistances techniques financées par les fonds fiduciaires et l'aide rémunérée de la SFI) ont souvent eu pour conséquence une mauvaise coordination des activités de conseil aux pays du Groupe de la Banque. Ces facteurs ont ensuite influencé la conception des opérations de la Banque, trop souvent axées sur les produits et les processus (opérations de privatisation, recrutement de conseillers juridiques ou de consultants en matière de réglementation), aux dépens des problèmes fondamentaux de stratégies et de politiques, domaines dans lesquels la Banque est capable d'apporter une contribution particulièrement importante. Enfin, la faiblesse du cadre institutionnel régissant la coordination entre la Banque et la SFI peut avoir fait perdre à la SFI des opportunités d'intervention dans le secteur. En même temps, il apparaît que certaines activités du Groupe de la Banque, dont la qualité et l'impact ont été remarquables, ont souvent été le produit d'initiatives individuelles ou d'une vision stratégique du secteur par un responsable de pays, en dépit de l'obstacle que constitue un système d'incitations internes déficient.

Enfin, jusqu'à une date récente, la haute direction de la Banque n'avait pas pris conscience de la nécessité d'une stratégie opérationnelle intégrée (à l'échelle globale, régionale et des pays) allant au delà des principes généraux de la Politique Opérationnelle 4.50 et comportant une réévaluation du rôle et des avantages comparatifs du Groupe de la Banque dans le vaste secteur des in-

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cent impetus toward *inward-oriented* knowledge management efforts.

But two very recent major initiatives by senior management (the Global Gateway and the IFC-Softbank Internet venture) may signal a real breakthrough—as long as their primary focus on content does not detract from the seriousness of the connectivity challenge evidenced in this study. Indeed, the ongoing preparation of the FY01 Sector Strategy Paper (SSP) on Information Infrastructure, together with the recent management decisions to merge the telecommunications units of the Bank and IFC and to consolidate the management of all Finance, Private Sector, and Infrastructure Network (FPSI) non-lending services, provides a unique opportunity for the Bank Group to overcome the fragmentation of recent years and squarely reposition II on the Bank Group's core development agenda.

In this context, the forthcoming SSP should incorporate the following recommendations:

- *Policy.* The forthcoming SSP should restate the Bank Group objectives in the broader II sector in terms of ultimate results (for example, access to information, pricing and quality of services, fiscal impact) rather than just means and intermediate outcomes (private sector investment, competition, or regulation), as OP 4.50 does. It should *address outstanding policy gaps and differences in regulatory* reform strategy regarding the Bank Group's approach to sequencing sector liberalization and privatization,

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calidad y alto impacto del Grupo del Banco estaban asociadas con casos en que estos desincentivos fueron superados gracias a la iniciativa personal de algunos funcionarios o a la visión estratégica acerca de la infraestructura de la información del director a cargo de las operaciones del Banco en un país determinado.

Por último, hasta hace muy poco tiempo no se había reconocido la necesidad de tener una estrategia operacional integrada (al nivel mundial, regional y de los países) que fuera más allá de los principios generales de política contenidos en la OP 4.50 y reevaluara el papel y la ventaja comparativa del Grupo del Banco en el nuevo "sector" ampliado de la infraestructura de la información. Las "estrategias" anuales de la CFI han consistido más bien en planes de comercialización detallados y han carecido de una política global y bien articulada y de un marco estratégico. Estas deficiencias contribuyeron también a la fragmentación del enfoque del Grupo del Banco de la infraestructura de la información en los distintos países. Muchas veces las decisiones críticas solían quedar en manos del personal o de consultores, o simplemente no se encaraban por falta de recursos presupuestarios (como parece ser el caso en muchos proyectos multisectoriales del Banco). (Por ejemplo, con respecto al asesoramiento que debía darse sobre la estructura del sector, los regímenes de licencia, el enfoque del servicio universal o los precios de interconexión; a la manera de decidir las respectivas funciones del Banco y de la CFI; o a la forma de establecer vínculos con otros sectores, como los de salud y educación). Un ejemplo es la ambi-

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frastructures d'information. Quant aux stratégies annuelles de la SFI, elles ressemblent plutôt à des plans détaillés de marketing et ne sont pas basées sur un cadre de stratégies et de politiques clairement définies. Ces dé-

ficiences ont aggravé la dispersion des activités du Groupe de la Banque dans les pays; en outre, des décisions fondamentales (concernant par exemple les conseils relatifs à l'organisation du secteur, aux systèmes d'octroi des permis d'exploitation, au développement d'un service universel et aux prix des interconnexions, la définition des rôles respectifs de la Banque et de la SFI ou l'établissement de liens avec d'autres secteurs tels que la santé et l'éducation) ou bien étaient basées sur les préférences individuelles des experts ou des consultants – ou, pire, n'étaient pas prises faute de ressources budgétaires adéquates (notamment dans le cas des projets multisectoriels). Un bon exemple est l'ambiguïté permanente de la politique du Groupe de la Banque sur le rôle du secteur public dans le développement des services en milieu rural; cette ambiguïté a découragé le personnel de la Banque de promouvoir des initiatives originales ou de proposer des appuis financiers (par exemple pour des partenariats publics et privés), créant un gap que la SFI n'a pas pu combler en raison du manque d'intérêt des investisseurs.

Bien que le Groupe de la Banque ait une bonne expertise dans le secteur des II, le manque d'intérêt des cadres supérieurs et des responsables des pays a entraîné un déclin graduel du leadership intellectuel de la Banque – acquis pendant la période

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as well as to universal service/rural access and its linkages with the Bank's poverty-reduction agenda (including through interventions in other sectors such as education and health).

- *Institutional options.* While ensuring consistency with the September 1999 Bank Group private sector development (PSD) strategy and drawing on lessons learned from recent experience in reforming countries, the forthcoming SSP should provide *detailed guidance to Bank Group staff on a range of II policy and strategic options* best suited to various categories of borrowers, rather than a rigid "one-size-fits-all" reform model. The SSP could use the country segmentation framework proposed in a recent *infoDev*-financed background study. Similarly, the SSP should promote the use of a broader range of Bank Group instruments, away from the excessive reliance of recent years on multisector TA loans.
- *Regional/country strategies.* The SSP should include detailed Regional Bank Group II strategies, building on the recent, very successful exercise carried out for the Europe and Central Asia Region (ECA) telecommunications strategy. To this end, management of the newly merged Bank/IFC unit should give top priority to carrying out a rapid *country-level II policy and strategy stock-taking exercise* covering every country where the Bank or IFC is involved. This exercise should not aim at the preparation of polished country reports, but rather at providing the basic in-

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güedad persistente de la política del Grupo del Banco sobre el papel del sector público en el fomento del acceso en las zonas rurales, que ha llevado al personal a abstenerse de promover opciones de política innovadoras o de

proponer apoyo financiero del Banco (por ejemplo, para la creación de asociaciones entre el sector público y el sector privado) en esa esfera, dejando así una laguna que la CFI no ha podido llenar por falta de suficiente interés de los inversionistas.

Pese a la existencia dentro del Grupo del Banco de considerables conocimientos y especialistas en esferas relacionadas con la infraestructura de la información, esta falta de atención por parte de la administración superior y de los directivos a cargo de las operaciones del Banco en los países ha provocado una erosión gradual del liderazgo intelectual del Banco en el sector, que se había ganado durante la época, sin duda más sencilla, de los monopolios estatales. Actualmente, muchos países en desarrollo se ven enfrentados a la perspectiva de quedar totalmente excluidos de la revolución de la información, situación que tendría consecuencias posiblemente irreversibles para su bienestar económico y social a largo plazo. En los últimos años, el Grupo del Banco perdió, en efecto, la oportunidad de invertir esa tendencia en varias ocasiones. En primer lugar, en 1995, cuando la antigua División de Telecomunicaciones e Información organizó con gran éxito el primer Simposio sobre la información y el desarrollo (con representación de alto nivel de los países prestatarios y del sector), sin que hubiera un adecuado seguimiento operativo por

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moins compliquée des monopoles publics. Ce déclin intervient au moment où un grand nombre de pays en développement risquent de ne pas pouvoir participer à la révolution de l'information, avec peut-être des conséquences irréversibles pour leur prospérité économique et sociale à long terme. Récemment, le Groupe de la Banque a manqué plusieurs occasions de renverser cette tendance. Premièrement, en 1995, l'ancien département de l'Énergie, des Mines et des Télécommunications a organisé, avec succès, le premier Symposium sur l'Information et le Développement (qui a réuni des responsables de haut niveau des pays emprunteurs et de l'industrie); mais ce symposium n'a pas été suivi d'initiatives opérationnelles importantes de la part des unités régionales de la Banque. Deuxièmement, en 1996, un projet de Stratégie de la Banque Mondiale sur l'Information et le Développement – basé en grande partie sur les travaux remarquables d'une équipe de la Banque en 1990 – a été préparé mais jamais terminé. Troisièmement, la Banque, en 1998, a publié le Rapport sur le Développement dans le Monde: La Connaissance au Service du Développement; ce rapport aurait pu sensibiliser des publics importants sur l'ampleur du défi de la révolution de l'information pour les clients de l'institution. Mais, pour l'instant, le principal bénéficiaire du rapport a été l'impulsion récente donnée à la gestion du savoir à l'intérieur de la Banque.

Néanmoins, deux importantes initiatives très récentes de la haute direction (le Portail Universel et le lancement par la SFI d'une Banque de Logiciels) sont peut-être le signe

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Intellectual foundation for the formulation of the Bank Group's operational strategy. Consideration should be given to using *infoDev* resources more systematically to support such country-level II policy and strategic work.

- *Partnerships.* The SSP should propose ways to streamline the vast array of current external partnerships in II, based on a systematic evaluation of their relevance, impact, and efficiency. The excessive fragmentation of their management within the Bank Group should be specifically addressed, possibly by formally assigning overall strategic and coordination responsibility to the manager of the newly merged Bank/IFC unit.
- *Staffing.* The SSP should include a plan to continually update staff skills to cope with the demands of this dynamic sector and enable the Bank to maintain policy leadership. The SSP would build on the shift that has already taken place in recent years, both in the Bank and IFC, in response to the new private sector-led agenda. Given the rapid technological changes and the increasing scope of the information infrastructure sector, this may include expanding beyond the telecommunications sector the successful staff exchange program already in place and setting up a well-structured knowledge sharing program with leading private sector companies.
- *Monitoring and evaluation.* The SSP should draw on this report to summarize lessons from recent Bank Group experience. And it should include a detailed frame-

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parte de las unidades regionales del Banco. En segundo lugar, en 1996, cuando se preparó pero nunca se finalizó el proyecto de una estrategia del Banco Mundial sobre la información en el desarrollo, que se elaboró en gran medida tomando como base la labor innovadora de un grupo de trabajo establecido en 1990. En tercer lugar, en oportunidad de la publicación del Informe sobre el desarrollo mundial 1998/99: El conocimiento al servicio del desarrollo, documento que tenía la posibilidad de sensibilizar a un público de importancia fundamental acerca de la magnitud de los desafíos con que se enfrentaban los países a raíz de la revolución de la información, pero cuyo principal efecto ha sido hasta el momento el impulso reciente por parte del Banco de iniciativas de orientación interna sobre gestión de los conocimientos.

No obstante, hay dos grandes iniciativas muy recientes impulsadas por la administración superior (el Portal mundial sobre el desarrollo y la iniciativa de la CFI y Softbank en Internet) que pueden significar un avance trascendental, en la medida en que el principal foco de atención de ambas iniciativas "a saber, el contenido", no reste importancia al desafío que plantea la conectividad, según se comprueba en el presente estudio. En efecto, la actual preparación del documento de estrategia sectorial para el ejercicio de 2001 sobre la infraestructura de la información, así como la reciente decisión de la administración de fusionar las unidades de telecomunicaciones del Banco y la CFI y de consolidar la gestión de todos los servicios no crediticios de la Red sobre Finanzas,

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d'un changement radical – pour autant qu'elles ne font pas oublier la gravité du problème de connectivité souligné par l'étude. La préparation en cours du document de stratégie sectorielle sur les Infrastructures d'Information pour l'exercice 2001 et les décisions récentes d'organiser la fusion des unités de télécommunications de la Banque et de la SFI et de consolider la gestion de tous les services non financiers du Réseau Finance, Secteur Privé et Infrastructure sont pour le Groupe de la Banque une occasion unique de lutter contre la dispersion des années antérieures et de placer le problème des infrastructures d'information au centre des objectifs de développement de la Banque.

Dans ce contexte, le futur document de stratégie sectorielle devrait comprendre les recommandations suivantes :

- *Politiques.* Le document devra réaffirmer les principaux objectifs du Groupe de la Banque dans le vaste secteur des infrastructures d'information, qui donnent la priorité aux résultats finaux (par exemple l'accès à l'information, le prix et la qualité des services, les incidences budgétaires) et non pas seulement aux moyens employés et aux produits intermédiaires (investissement privé, concurrence ou régulation), comme dans la Politique Opérationnelle 4.50. Le document devra aborder le problème des déficiences des politiques et des disparités dans les stratégies de réforme du cadre réglementaire, inhérentes aux conceptions du Groupe de la Banque sur l'enchaînement des processus de li-

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work for the future monitoring and evaluation (M&E) of the revised Bank Group policy and strategy. To this end, current M&E processes should be enhanced at three levels: (a) at the project/activity level, by setting M&E systems for interventions that currently fall through the cracks (telecommunications/informatics/II components of multisector Bank projects and the Bank Group's advisory and analytical services); (b) for IFC projects, by specifying at appraisal the project's expected contributions to sector and development impact objectives and tracking their progress toward achievement in supervision and evaluation reports; and (c) at the global level, by incorporating in the SSP specific, relevant indicators of Bank Group effectiveness, including sector outcomes and development impacts.

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Sector Privado e Infraestructura (FPSI), brindan una oportunidad única para que el Grupo del Banco elimine la fragmentación observada en los últimos años y decida volver a colocar a la infraestructura de la información en el lugar que le corresponde en su programa básico de desarrollo.

En este contexto, en el documento de estrategia sectorial de próxima aparición se formulan las siguientes recomendaciones:

- *Políticas.* El próximo documento de estrategia sectorial debe volver a exponer los objetivos que se persiguen en el sector de la infraestructura de la información en términos de los resultados últimos (por ejemplo, acceso a la información, fijación de precios y calidad de los servicios, aspectos fiscales), y no solamente en los medios y los resultados intermedios (inversión privada, competencia o reglamentación), como ocurre con la OP 4.50. Debe ocuparse de las deficiencias en las políticas y las diferencias en la estrategia de reforma de las reglamentaciones que siguen existiendo con respecto al enfoque del Grupo del Banco acerca de la secuencia de la liberalización y la privatización del sector, así como del servicio "universal" y el acceso de las zonas rurales y sus vínculos con el programa de reducción de la pobreza (inclusive mediante intervenciones en otros sectores, como el de la educación y la salud).
- *Opciones institucionales.* Al tiempo que se asegura la coherencia con la estrategia del Grupo del Banco sobre desarrollo del sector privado, de septiembre de

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béralisation et de privatisation, sur « l'universalité » du service, sur l'accès du monde rural et sur les liens avec les politiques de réduction de la pauvreté (notamment grâce aux interventions dans d'autres secteurs tels que l'éducation et la santé).

- *Options institutionnelles.* Le futur document devra être compatible avec la stratégie de développement du secteur privé de septembre 1999, mais, sur la base de l'expérience récente des pays réformateurs, il devra aussi donner des directives détaillées au personnel du Groupe de la Banque sur les politiques et les options stratégiques dans le secteur des II; au lieu de la rigidité des solutions standards, ces directives devront coller aux situations particulières de différentes catégories d'emprunteurs. La stratégie pourra utiliser les classements de pays proposés par une étude récente financée par Info-Dev. De la même façon, le document de stratégie devra encourager l'emploi d'instruments opérationnels diversifiés, au lieu du rôle prépondérant récemment accordé aux prêts d'assistance technique multisectoriels.
- *Stratégies régionales et de pays.* Le document de stratégie sectorielle devra comprendre des stratégies régionales détaillées en matière d'infrastructures d'information, sur la base de l'expérience réussie de la Région Europe et Asie Centrale pour la préparation d'une stratégie des télécommunications. À cette fin, la direction de la nouvelle unité commune de la Banque et de la SFI devra donner la plus haute

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1999, y aprovechando las enseñanzas obtenidas de la experiencia reciente en países que han introducido reformas, en el próximo documento de estrategia sectorial se debe proporcionar orientación precisa al personal del Grupo del Banco sobre diversas opciones estratégicas y de política en materia de infraestructura de la información más adecuadas para las distintas categorías de prestatarios, en lugar de un modelo de reforma rígido, igual para todos. En el documento de estrategia sectorial se podría utilizar el marco de segmentación de países propuesto en un reciente estudio de antecedentes financiado por infoDev. Del mismo modo, en el documento se debe promover el uso de una gama más amplia de instrumentos del Grupo del Banco, para no depender excesivamente de los préstamos multisectoriales de asistencia técnica, como ha ocurrido en los últimos años.

- *Estrategias a nivel regional y de los países.* El documento de estrategia sectorial debe contener las estrategias regionales detalladas del Grupo del Banco en materia de infraestructura de la información, aprovechando el exitoso proceso realizado para la estrategia de telecomunicaciones de la región de Europa y Asia Central. A tales efectos, los directivos de la unidad del Banco y la CFI recientemente consolidada deberían asignar la primera prioridad a una evaluación rápida de las políticas y estrategias nacionales sobre infraestructura de la información que abarque todos los países en que el Banco o la CFI

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priorité à un inventaire rapide des politiques et des stratégies d'II au niveau des pays, couvrant tous les pays où opèrent la Banque et la SFI. Cet inventaire ne devra pas aboutir à la préparation de rapports parfaits sur chaque pays, mais il devra établir les bases intellectuelles pour la formulation de la stratégie opérationnelle du Groupe de la Banque. Il conviendra d'examiner la possibilité d'utiliser systématiquement les ressources d'infoDev pour appuyer les analyses de politiques et de stratégie d'II au niveau des pays.

- *Personnel.* Pour assurer le maintien du leadership de la Banque, le document de stratégie devra comprendre un plan d'ajustement permanent de l'expertise du personnel de la Banque aux exigences d'un secteur dynamique. La stratégie sera basée sur le modèle des initiatives récemment prises par la Banque et la SFI au service des nouveaux objectifs de développement du secteur privé. Compte tenu de la rapidité des évolutions technologiques et de l'élargissement du secteur des infrastructures d'information, le plan pourra étendre au delà du secteur des télécommunications le programme en cours d'échanges de personnel et mettre en place un programme bien structuré de partage de l'information avec d'importantes entreprises du secteur privé.
- *Suivi et évaluation.* Le document de stratégie pourra utiliser le présent rapport pour un bref rappel de l'expérience récente du Groupe de la Banque. Il devra comporter un cadre précis pour

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desarrollan actividades. En esta tarea no debería preverse la preparación de informes acabados sobre los países, sino más bien el establecimiento de una base intelectual para la formulación de la estrategia operacional del Grupo del Banco. Debe considerarse la posibilidad de utilizar los recursos de infoDev de manera más sistemática para apoyar la labor en materia de políticas y estrategias de infraestructura de la información al nivel de los países

- *Dotación de personal.* En el documento de estrategia sectorial se debe incluir un plan de perfeccionamiento continuo de las aptitudes del personal para poder satisfacer las necesidades de este dinámico sector y permitir que el Banco mantenga su liderazgo en materia de políticas. Se debería tomar como base el cambio de orientación que ya se ha producido en los últimos años tanto en el Banco como en la CFI, en respuesta al nuevo programa impulsado por el sector privado. En vista de los acelerados cambios tecnológicos y del aumento del ámbito de acción del sector de la infraestructura de la información, este plan puede contemplar la ampliación a otros ámbitos del exitoso programa de intercambio de personal que existe en la actualidad en el sector de las telecomunicaciones, y el establecimiento de un programa bien estructurado de intercambio de conocimientos con importantes empresas del sector privado.
- *Seguimiento y evaluación.* El documento de estrategia sectorial debe basarse en el presente informe para resumir las ense-

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le suivi et l'évaluation future des nouvelles stratégies du Groupe de la Banque. À cette fin, il conviendra de renforcer sur trois plans les procédures de suivi et d'évaluation : a) au niveau des projets et autres activités, en établissant des systèmes de suivi et d'évaluation portant principalement sur les interventions échappant actuellement à ces contrôles (les composantes télécommunications/informatique et II des projets multisectoriels de la Banque et les services de conseils et autres activités non financières du Groupe de la Banque); b) en ce qui concerne les projets de la SFI, en précisant, au stade de l'évaluation, la contribution prévisible du projet aux objectifs de développement économique et sectoriel et en utilisant les rapports de supervision et d'évaluation pour analyser les progrès réalisés; c) au niveau global, par l'introduction dans le document de stratégie sectorielle d'indicateurs appropriés de l'efficacité du Groupe de la Banque, y compris les résultats du secteur et les effets sur le développement.

ñanzas recogidas de la experiencia reciente del Grupo del Banco. Asimismo, debe incluir un marco detallado para las futuras actividades de seguimiento y evaluación de las políticas y la estrategia modificadas del Grupo del Banco. Para ello deben perfeccionarse los actuales procedimientos de seguimiento y evaluación, en tres niveles: a) al nivel de los proyectos y actividades, mediante el establecimiento de sistemas de seguimiento y evaluación de las intervenciones que actualmente escapan al seguimiento (telecomunicaciones/informática/componentes de infraestructura de la información en proyectos multi-sectoriales del Banco y servicios analíticos y de asesoramiento del Grupo del Banco); b) al nivel de los proyectos de la CFI, especificando en la evaluación inicial los aportes previstos de los proyectos a los objetivos sectoriales y en términos de desarrollo, y haciendo un seguimiento de los avances en la consecución de éstos en los informes de supervisión y evaluación, y c) al nivel mundial, mediante la incorporación en el documento de estrategia sectorial de indicadores específicos pertinentes de la eficacia del Grupo del Banco, inclusive resultados sectoriales y el impacto en el desarrollo.

ABBREVIATIONS AND ACRONYMS

CAS	Country Assistance Strategy
CFS or CCF	Corporate Finance Services Department (IFC)
DECRG	Development Research Group (WB)
ECA	Eastern Europe and Central Asia Region
EDI	Electronic data interchange
EMT	Energy, Mining, and Telecommunications Department (WB)
EMTII	Telecommunications and Informatics Division (WB)
ERR	Economic rate of return
ESMAP	Energy Sector Management Assistance Program
ESW	Economic and sector work
FIAS	Foreign Investment Advisory Services
FPSI	Finance, Private Sector, and Information Network
FRR	Financial rate of return
GDP	Gross domestic product
GKP	Global Knowledge Partnership
GPE	Growth of productive enterprise
IAD	Internal Audit Department
IAR/XPSR	Investment Assessment Report/Expanded Project Supervision Report
ICT	Information and communications technology
IFC	International Finance Corporation
II	Information infrastructure
<i>infoDev</i>	Information for Development Program
IT	Information technology
ITU	International Telecommunications Union
M&E	Monitoring and evaluation
MIGA	Multilateral Investment Guarantee Agency
MIS	Management information systems
OED	Operations Evaluation Department (WB)
OEG	Operations Evaluation Group (IFC)
OP	Operational Policy
PSD	Private sector development
PSR	Project Status Report (WB)
PSR	Project Supervision Report (IFC)
PTO	Public telecommunications operator
QAG	Quality Assurance Group
SAL	Structural Adjustment Loan
SECAL	Sector Adjustment Loan
SLT	Sri Lanka Telecommunications
SSP	Sector strategy paper
TA	Technical assistance
TAL	Technical Assistance Loan
TATF	Technical Assistance Trust Funds
VANS	Value-added network services
VSAT	Very small aperture terminal
WBI	World Bank Institute
WDR	World Development Report
WTO	World Trade Organization

INTRODUCTION

Study Objectives and Rationale

The telecommunications and information technology (IT) sectors of the world economy changed dramatically throughout the 1990s, driven by major improvements in technology, the development of new services with potential widespread applications (for example, the Internet), industry restructuring, the shift in the composition of capital flows to developing countries toward private direct investment, and major changes in government policies. The convergence of technologies, services, and markets in these sectors has created what can be best understood as a single information infrastructure (II) sector. The rapid growth of II is expected to further accelerate, offering unprecedented opportunities for economic and human development in poor countries. The advent of e-commerce, in particular, has the potential to alter fundamentally the way commerce and trade are conducted in many countries. Government service delivery, education and training, working, and consumption practices will all be affected.

In response to these developments, most developed countries, and some developing countries, have adopted "information society" policies. Many developed countries have allocated resources to ensure that II access will be extended to all people. Concern is growing, however, that most developing countries will not be able to take advantage of II opportunities, furthering the gap between rich and poor countries.

The recent rapid changes in the II sector have been accompanied by significant changes in the Bank Group's activities and approach in this sector. Among the changes have been the build-up of significant International Finance Corporation (IFC) and Multilateral Investment Guarantee

Agency (MIGA) portfolios; major shifts in the mix of instruments (lending and nonlending) used by the Bank; development of new partnerships (for example, *infoDev*); and staffing and organizational realignments within the Bank Group. This study evaluates the effectiveness of the Bank Group's response to the challenges of the 1990s. It was also scheduled to contribute to the preparation of the Bank Group Sector Strategy Paper (SSP) for *Information Infrastructure*.

Study Scope and Methods

The study was designed as more than an update of the Operations Evaluation Department's (OED) 1993 telecommunications review¹ in two major

respects. First, it is the first *joint* World Bank OED–IFC Operations Evaluation Group (OEG) evaluation of both Bank and IFC activities in a sector. Second, it attempts to expand the scope of the evaluation beyond the narrow confines of the telecommunications sector—within the constraints of data availability (see below)—consistent with the broader II focus of the SSP. However, given its limited budget and absence of fieldwork, the study did not set out to provide fundamentally new insights into the “how to” of telecommunications sector reform, a subject abundantly covered in the recent literature (the report does summarize generic lessons on sector reform and illustrates them with examples drawn from Bank Group experience). Rather, the study’s primary focus, and its main value-added, is on the relevance, efficacy, and efficiency of the Bank Group’s assistance strategy in a sector in which it has been an essentially marginal player—in financial terms at least.

On the World Bank side, the Bank Group activities reviewed for the study were the 35 telecommunications projects completed and evaluated since the 1993 OED review (both stand-alone telecommunications projects and multisector or adjustment loans with telecommunications or II components), the 57 projects that are still active, and Bank-funded sector work, as well as some 25 trust-funded advisory activities (mostly under the aegis of the Private Sector Development Department, or PSD) undertaken in the II area since 1993. The study also draws from the findings of two independent evaluations of informatics components of Bank projects and of the Information for Development (*infoDev*) program.² On the IFC side, the report covers an evaluation of 21 telecom³ investment operations approved since FY93⁴ and a review of the design and characteristics of the three telecommunications advisory assignments (managed by Corporate Financial Services, or CFS) and the 27 telecom-related projects financed by the Technical Assistance Trust Fund (TATF) program. No systematic review of informatics or II components of nonteletcommunications IFC operations was carried out because there was no

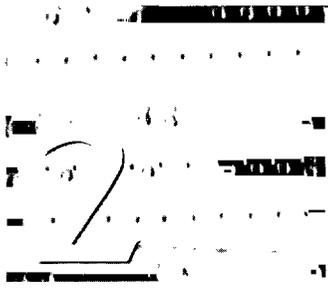
database of such projects/components.

The review did not carry out any fieldwork and drew from the following sources:

- A review of key Bank and IFC policy and strategy documents (OP 4.50 and annual IFC telecommunications strategies for FY93–00), project and activity reports (concept papers, appraisal and completion reports, as well as selected supervision reports), and previous evaluations.
- An analysis of selected internal cost data.
- Interviews of Bank and IFC staff.
- Telephone calls and exchanges of e-mails with a sample of stakeholders (borrowers, private sector and other donors, and multilateral organizations) and IFC clients selected nonrandomly and based on ease of access.
- An analysis of evaluation and performance ratings (OED ratings of the 35 completed projects covered by the study as well as performance ratings of the 21 IFC investment operations approved during FY93–96, using an evaluation framework adapted from the self-evaluation system).⁵

More recent Bank projects as well as non-lending services, for which evaluations of outcome were not yet possible or available, were reviewed for their design characteristics and relevance. Supervision ratings of active Bank projects were used primarily to assess aggregate trends and patterns in the current Bank telecommunications portfolio.⁶

The review of individual Bank and IFC activities was carried out using the respective evaluation frameworks of OED and IFC, which take into account differences in mandates and project features. In addition, six countries (Brazil, Hungary, Indonesia, Jordan, Sri Lanka, and Tanzania) where both the Bank and IFC have been active were selected for joint reviews by combined OED/OEG teams. These country reviews assessed the design, implementation, and impact of the Bank Group’s assistance as a whole. Although not based on a randomly selected, representative sample, the country reviews were helpful in illustrating good as well as poor examples of Bank Group synergies.



OVERVIEW OF BANK GROUP ASSISTANCE BY SECTOR

Until the late 1980s, economies of scale and scope, together with the public utility characteristics of telecommunications, kept ownership, control, operation, and policymaking squarely in the public sector. While public monopolies in developing countries attempted to expand their telecommunications networks and to fulfill social welfare objectives through such instruments as cross-subsidization, high levels of inefficiency kept them from constructing more than the rudiments of a national telecommunications system.

Recent Sector Developments

The 1993 OED review documented pressures for change in the sector since the early 1990s. These pressures came from rapid technological innovation in the industries supplying equipment to public telecommunications operators (PTOs), advances in the technologies of supply, and innovations in network use that were driven primarily by value-added network service (VANS) suppliers. Rapid convergence of telecommunications and information technology (IT), increasing differentiation and diversification in value-added services, and heightened competition based on continual innovation and access to global markets have now rendered monopoly control of telecommunications infrastructure inefficient.

In developed countries, technological innovations, carried out by large corporate users,

have generated most of the pressures for telecommunications reform. Relatively high levels of network penetration and a mature and diversified market have resulted in reform objectives that emphasize competition to lower prices and provide a diversified portfolio of VANS to a demanding customer base. In contrast, in developing countries, poor network penetration, less-developed domestic capital markets, limited technological expertise, and constraints on raising resources by government departments have made foreign private investment indispensable to expanding the telecommunications infrastructure. Capital-starved PTOs, burdened with inefficient management and budgetary and fiscal constraints, have increasingly found themselves unable to deal with the needs of technological advances or investment in large-scale infrastructure rollout. One way to overcome this has been through policy

reforms to open the economy and reduce constraints on private and foreign investment.

But liberalization and privatization, in developed and developing countries alike, have exposed complex policy and regulatory issues. These include the form that restructuring of the PTO will take, terms of privatization, market structure in competitive segments, legal arrangements, functioning of regulatory agencies, compatibility between political considerations of universal access and employment, and economic considerations of efficiency, competitiveness, and innovation. Perpetual and rapid changes in technology, network architecture, and service provision raise complex issues and conflicts in the industry that need to be resolved. Using policy and regulatory decisions to do this strains the institutional capacity of even the most developed countries.

Implications for the Bank Group's Development and Poverty Reduction Agenda

The development since the 1993 OED review with the most profound implications for developing countries is the growing convergence of telecommunications and information technology, currently exemplified by the Internet revolution, with its attendant opportunities and risks. Predicting the impact of this revolution on the developing world is a perilous exercise, particularly as the revolution is disrupting the observed historical relationships between network development and socioeconomic parameters, making it difficult to use econometric techniques.

Nonetheless, a growing body of research points to three main areas in which networking can accelerate social and economic development:

- It fosters growth through improved efficiency and competitiveness (including by attracting foreign investment) and better opportunities to exploit low factor costs in international markets.
- It permits a more efficient delivery of social services (education, health care, public administration), particularly to the most isolated and poorest segments of the population, such as in rural areas.
- It provides opportunities to increase social capital by reinforcing social cohesion, equal-

izing access to information and knowledge, fostering political participation, and enabling the bypassing of failing domestic institutions.

However, a recent study commissioned by *infoDev* for the forthcoming sector strategy paper (SSP)¹ offers a stark warning: many countries—the so-called latecomers, characterized by low connectivity rates, moderate or low literacy levels, and low incomes—may be unable to participate in this revolution. This will lead to an *increasing* gap in social and economic well-being between the information “haves” and “have-nots” of the world.

Given the magnitude and still-evolving nature of this challenge, the Bank Group's future role will have to be redefined in light of its main comparative advantages, including:

- Its access to and ability to act as a catalyst for global experience and knowledge
- Its experience, through IFC, in financing private sector projects in developing countries
- Its ability to engage borrowers on key strategic and policy issues
- Its ability to act as an honest broker among often-competing donors and private industry standards or agendas
- Its ability to deal with the cross-cutting dimensions of the new information infrastructure sector (particularly within a Comprehensive Development Framework)
- Its capability to mobilize substantial resources for the piloting and scaling up of promising grassroots initiatives.

Bank Assistance in the 1990s

Policy and Strategic Framework

The relative telecommunications policy vacuum that the 1993 OED review identified has been formally filled by OP 4.50 of May 1995. The content of this policy statement is in line with the recommendations of *World Development Report 1994: Infrastructure for Development*. Specifically, OP 4.50 advocates “(a) largely private provision of telecommunications services; (b) a regime of open entry and competition; and (c) Government responsibility for sector policy and regulation, reconciling commercial and social equity objectives.” Accordingly, the OP makes

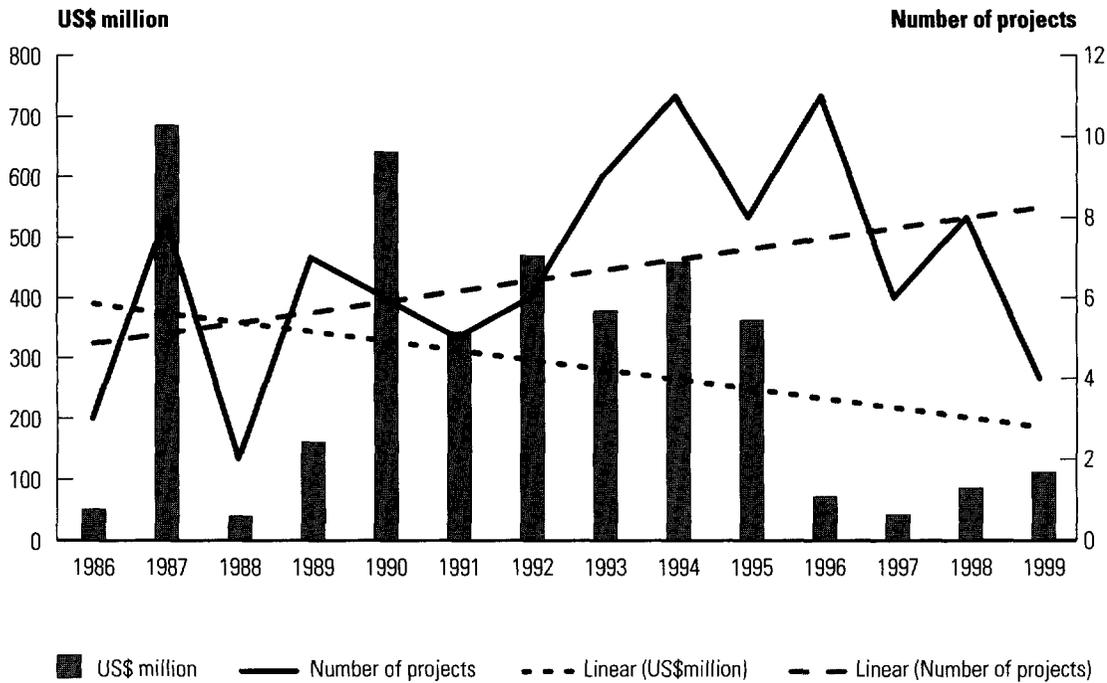
lending to state enterprises contingent on sector reform and mandates that “the Bank, IFC, and MIGA work together in formulating joint assistance packages, making flexible and innovative use of their various instruments.” The OP, however, has not yet been given operational form through either a global Bank strategy or a set of regional telecommunications strategies (except for a June 1999 strategy for the Europe and Central Asia Region). Nor does the Bank have a similar policy statement, or operational strategy, for IT or the II sector.

World Development Report 1998: Knowledge for Development sowed the seeds for such a broader approach, however, and the forthcoming Bank Group sector strategy paper on information infrastructure (FY01) is expected to fill outstanding gaps. The sector strategy paper is expected to reassess existing telecommunications policies in the context of the convergence of telecommunications and IT, take an integrated Bank Group approach, and operationalize the Bank Group policy.

Telecommunications in Bank Projects

The 1993 OED review documented trends and patterns in Bank telecommunications lending through the 1980s and early 1990s. It found a predominance of relatively large investment loans (on average five per year, accounting for 2 to 3 percent of total Bank lending) and an increase in lending to the Europe and Central Asia Region, mostly from 1990 onward. It also noted the gradual appearance, mostly from 1990, of lending instruments such as sector adjustment loans and multisector loans (including technical assistance loans and structural adjustment lending) that had telecommunications components or conditionality. The OED review saw the use of the new lending instruments—together with an increased emphasis in project design on broader issues of sector structure, competition, and private sector participation—as evidence that the Bank had already embarked on the “new” telecommunications sector agenda that was subsequently formalized in OP 4.50.

Figure 2.1 Bank Telecommunications Projects Are Increasing in Number, Decreasing in Funding



Indeed, changes in the scope and form of Bank involvement in the sector since 1993 have accelerated dramatically. The number of projects is increasing, while the total commitments are declining (figure 2.1). Furthermore, the regional distribution of lending has changed and there has been a shift toward multisectoral lending instruments rather than individual investments (figure 2.2).

The characteristics of the FY93–99 period are:

- A significant increase in the total number of approved projects involving telecommunications to an average of eight per year between FY93 and FY99.
- A reduction of 40 percent in the estimated volume of Bank funds dedicated to telecommunications activities. The new figure is about \$210 million per year on average—*excluding* information technology components of Bank projects—that is, less than 1 percent of total Bank lending.²
- A complete reversal in the respective shares of telecommunications-only versus multisector projects, with the latter accounting for as much as two-thirds of the total during that period.
- The predominance of technical assistance

(TA) loans compared with other instruments—half the total number of operations, mostly for multisector projects in public enterprise reform, privatization, and regulatory reform.

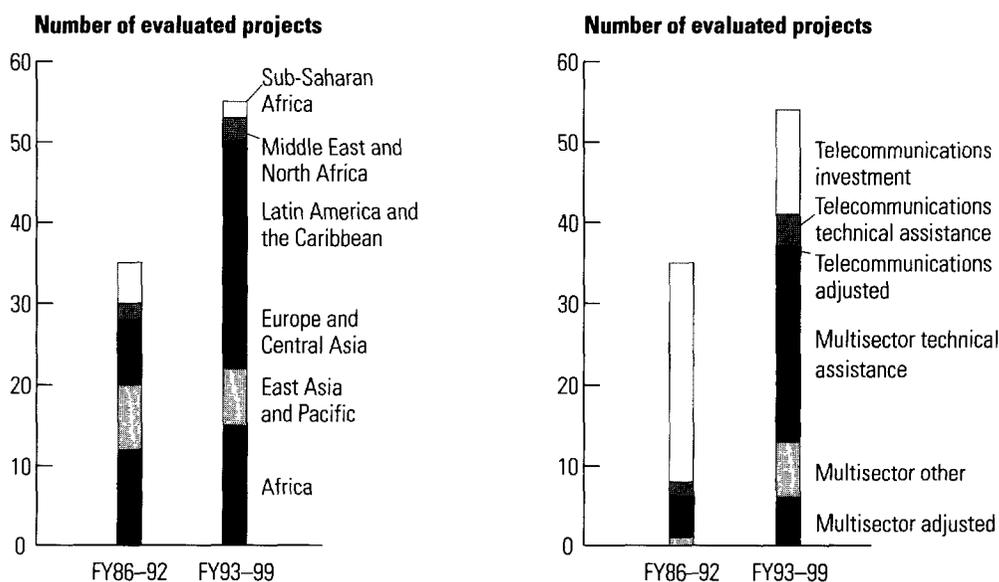
- A heavy concentration of activities in the Africa and Latin America and the Caribbean Regions, comprising almost exclusively multisector loans, which together account for 34 of the 54 projects.

Project Objectives and Design

The trend in the objectives and components of the telecommunications projects reviewed by the study has followed the overall lending trend in infrastructure. Since 1993, Bank telecommunications projects have clearly shifted toward the sector reform and privatization objectives embodied in OP 4.50 and away from physical infrastructure, commercialization, and capacity building (table 2.1 and Annex C).

Physical objectives. Most projects through the 1980s focused on financing investment to modernize and expand physical plant and networks. In the 1990s, however, the content of the physical components changed to spectrum man-

Figure 2.2 The Regional Distribution of Projects and the Instruments Used Have Changed



Source: World Bank data.

Table 2.1 **Project Objectives Have Shifted from Physical Infrastructure toward Reform and Privatization**

Project objective	Pre-1993 approvals		Post-1993 approvals	
	Number	Percent ^a	Number	Percent ^a
Physical infrastructure	33	89	23	42
Energy	5	14	7	13
Information infrastructure	0	—	4	7
Commercialization or corporatization	25	68	19	36
Capacity building	33	89	34	62
Sector reform	17	46	47	82
Universal service	0	0	0	0
Legislation or regulation	8	22	37	67
Privatization	6	16	42	76

a Does not add to 100 percent
Source: World Bank and IFC data.

agement equipment. Competition in mobile telephone markets and the increasing demand for mobile telephone services have intensified emphasis on procurement and installation of hardware and software for radio spectrum planning, management, and monitoring systems.

Agency-level institution building. In the 1980s, projects sought to strengthen the organization and management of state-owned telecommunications enterprises—what the 1993 OED review called “institutional strengthening at the agency level.” In such projects, TA to help commercialize the monopoly and improve its functioning included training and consultancy in financial management, or modernizing accounting and financial systems and procedures; commercial management, or billing and collection systems; human resources management; management information systems (MIS), or improving project management; and auditing procedures, materials management, and operations and maintenance.

Regulatory framework. A majority of the projects approved after 1993 (67 percent) had significant components to set up a sector-specific regulatory agency. Projects emphasized the importance of independent regulation and a legal framework to regulate the sector. Assistance to the regulatory agency usually consisted of training for regulatory staff and, sometimes, specialized consulting services.

Privatization of the incumbent monopoly. While most projects before 1993 emphasized reform and operational efficiency of the monopoly enterprise, subsequent projects have included private sector participation as an objective. Usually this has involved partial or complete divestment of the assets of the state, at least as a long-term goal.

Introduction of competition. Technological advances have made continued monopoly control of the telecommunications sector untenable. And both Bank policy and recent projects have emphasized the entry of additional operators in the various segments of the telecommunications sector as an essential condition of sector reform. Except in Latin America and the Caribbean, most projects focused on introducing competition in mobile telephone operations, viewing competition in basic wireline service as more of a long-term goal.

Tariffs and interconnection fees have also been important to liberalization, but have been mentioned in comparatively fewer projects. Where tariffs or interconnection have been mentioned, it has usually been in the form of tariff studies conducted by external consultants.

Economic and Sector Work and Trust Fund–Financed Technical Assistance Activities

As in its lending interventions, the Bank has radically altered the focus of its telecommunications

nonlending activities. Whereas most of the Bank's economic and sector work before 1993 was formal country or Regional sector reports and memoranda, none has been issued since 1993, with the exception of a 1996 discussion paper on telecommunications reform in Mexico, a 1997 discussion paper on telecommunications policies for Sub-Saharan Africa, and the 1999 Europe and Central Asia Region telecommunications strategy. Instead, the Bank's effort has consisted of research papers or "viewpoints" on generic issues of sector regulation and competition. In addition, a large research project on telecommunications reform in Africa was recently undertaken by the Bank's Development Research Group, with partial funding from the U.S. Agency for International Development.

In addition to Bank-funded nonlending services, 11 telecom-related activities totaling about \$300,000 were funded in the FY94-98 period under the Privatization Trust Fund (administered by the Bank's Private Sector Development and Privatization Group), and 14 more activities, totaling about \$2.8 million, were funded by the Policy and Human Resources Development Fund between 1991 and 1996. However, the information available on the size and scope of these activities reveals that they have only partly filled the gap in country-focused policy and strategy work. Instead, many have concentrated on supporting individual privatization transactions or providing support to Bank project preparation.

Information Technology in Bank Projects

The latest inventory of Bank projects with IT components³ identifies more than 1,000 such projects in the portfolio. Those components have included (a) investments in communications infrastructure and information technology; (b) technical assistance in the set-up of institutional management systems, including project operations systems (for example, for health, education, or microcredit projects) and financial management systems (for example, for budget formulation, billing, and the like); and (c) related training. Total funding for the components is estimated to have averaged more than \$2.0 billion per year in recent years, 84 percent for the purchase of goods and 16 percent for consulting services. Africa and Latin America and the Caribbean had the largest

shares of projects with informatics components (29 percent and 20 percent, respectively) as did the telecom, public sector management, and education sectors (respectively, 19 percent, 11 percent, and 10 percent). Few projects had a primary focus on IT; those that did were mostly in the area of tax or trade reform.

infoDev

infoDev is a global grant program that began in September 1995 at the Bank's initiative. Its objective is to promote innovative projects that use information and communication technology (ICT) for economic and social development. The program is managed by the Bank, which also provides contributions in kind, and it receives funding from several bilateral and multilateral donors as well as a handful of private enterprises and non-profit foundations. *infoDev* activities include workshops, assessments, demonstration projects, and feasibility studies.

As of December 31, 1999, *infoDev* had approved a total of 113 projects (outside the Y2K Initiative) and had provided grants totaling \$19.7 million, pointing to a relatively small average project size of about \$174,400. Grants can be provided only to outside partners that have an arm's-length relationship with the World Bank Group. The largest number of activities involved information sharing and dissemination (30.7 percent), followed by local services (28 percent), global rule setting (17.3 percent), capacity building and training (17.3 percent), advocacy (4 percent), and research and statistics (2.7 percent). Thirty-five percent of the projects were interregional or global, while 30 percent were in Africa, 16 percent in Latin America and the Caribbean, 9 percent in Europe and Central Asia, and only 2 percent in the Middle East and North Africa. In addition to these activities, *infoDev* managed the separately funded Y2K Initiative launched in February 1998, which had approved 136 grants in 74 International Development Association countries, for a total of \$25.6 million as of December 1999.

Other Partnerships and Initiatives in Information Infrastructure

The *infoDev* program is the largest and most visible of numerous Bank-sponsored initiatives

and partnerships broadly related to the information infrastructure (II) sector. The most recent initiative is the proposed Global Gateway (box 2.1). While two initiatives—Africa Connectivity Initiative and Knowledge for Development—deserve special mention because of their dedicated staff and funding,⁴ many others are microactivities sponsored by various parts of the Bank without much apparent coordination or monitoring of their design, funding, and impact. While no complete inventory could be found, a partial list of client-focused, knowledge-based initiatives at the World Bank published on the Global Knowledge Partnership's (GKP) Internet site lists 42 activities, most of which were apparently inspired by the *World Development Report 1998: Knowledge for Development* and the Bank's recent emphasis on knowledge management.

Africa Connectivity Initiative. In collaboration with other United Nations agencies and multilateral development organizations, the Internet Connectivity Initiative in the Africa Region promotes the development of connectivity activities in Sub-Saharan Africa. The initiative has organized a major conference on the theme in collaboration with the Economic Commission for Africa and the International Development Research Centre; identified four pilot countries—Ghana, Malawi, Mozambique, and Senegal—for accelerated preparation of connectivity components; and produced a handbook on connectivity. *infoDev* is funding two activities of the Africa

Connectivity Initiative, "ICO/21st Century for Africa" and "Rural Telecommunications."

Knowledge for Development Partnership. The World Bank Institute (WBI) has recently initiated a forum to foster cooperative activities that promote access to, and effective use of, knowledge and information as tools of sustainable development. WBI also provides information dissemination, partnership management and outreach, and activity coordination for the GKP—an evolving, informal collaboration of some 50 organizations, including *infoDev*, working to promote knowledge for development.

IFC Assistance Since 1993

Policy and Strategic Framework

IFC promotes growth in the developing world by financing private sector projects and providing technical assistance and advice to governments and businesses. IFC participates in a project only when it can make a special contribution that complements the role of market operators. It plays a catalytic role, stimulating and mobilizing private investments. By investing in viable commercial enterprises, IFC accepts the same risks and expects to earn the same returns as private participants in the same risk categories. The profitability of IFC's investments is important in bringing market discipline to its projects and in reducing the financial burden on its shareholders. Profitable IFC investments have been vital in demonstrating to private investors that well-

Box 2.1

The Global Gateway Internet Partnership for Development

The World Bank Group has recently launched an effort to build a Global Development Gateway on the World Wide Web in support of worldwide poverty alleviation. The Gateway will be built by and serve developing country governments, the international donor community, the media, civil society, and the private sector. It will help people, agencies, and companies by connecting them to new ideas, funding, and opportunities. It will exchange knowledge and information with governments and their partners that will promote national, regional, and local development. The Bank Group is preparing

a three-year business plan and budget to construct a global gateway and help developing countries create national gateways in conjunction with the Comprehensive Development Framework.

The gateways will support countries in their own initiatives to use the benefits of the Internet for their development. Several are already being implemented. The first phase (a proof of concept) was scheduled for launch in the first half of 2000. Major private companies have been invited to contribute to planning and funding this progressive venture.

structured, careful investments can offer attractive risk/reward opportunities.

In the telecommunications sector, IFC policy is governed by OP 4.50, and its projects are held to the same financial, economic, and environmental policy standards as other IFC projects.⁵ IFC's telecommunications sector strategies, which are updated annually, reflect IFC's mandate to support financially and economically viable projects where private capital is otherwise not available on reasonable terms and where other investors are prepared to provide at least 75 percent of the financing. IFC's annual telecommunications sector strategies have generally been focused on identification of opportunities and on a business and marketing plan to support those opportunities. Given their business and marketing focus, they generally have not articulated IFC's development impact objectives and strategic framework nor has there been a process to formally discuss them with Bank sector management.⁶

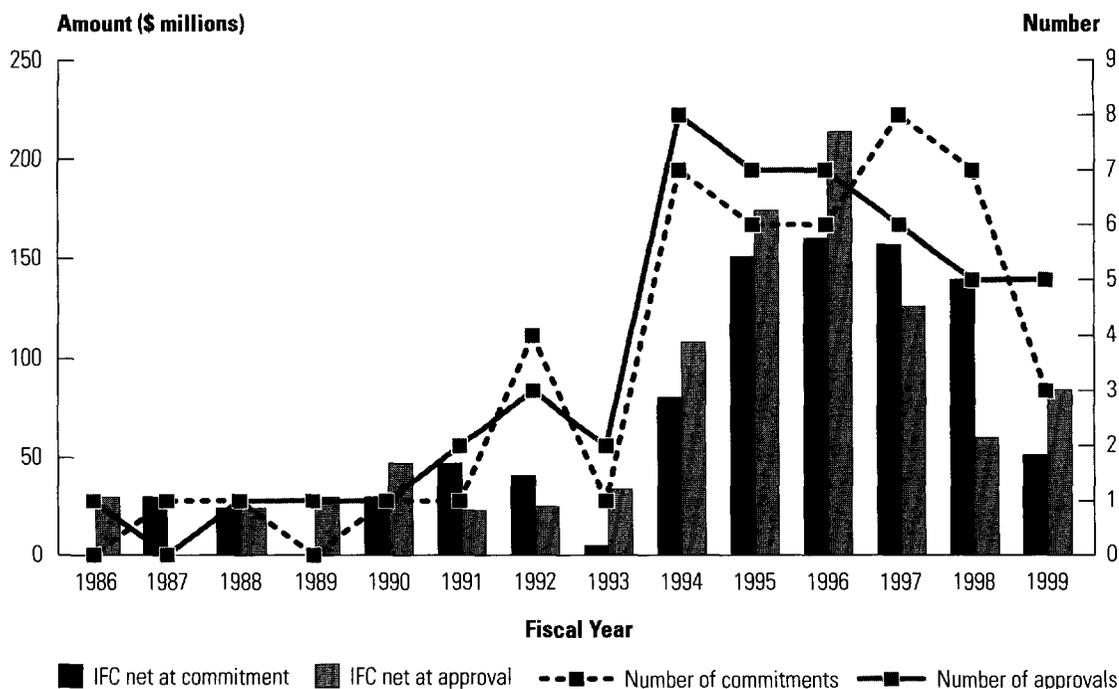
Telecommunications Investments

IFC made its first investment in telecommunications in FY70, a \$4.5 million loan to help finance a \$180 million fixed-line expansion project in Asia. The next investment was approved in FY86. As of end FY99, IFC's cumulative gross investment commitments⁷ amounted to \$2.2 billion, of which 43 percent, or \$0.92 billion, was for IFC's own account and the balance of \$1.3 billion was for the account of participant commercial banks. These commitments were made for 41 projects in 30 countries, with total project costs of \$8.5 billion (figure 2.3). These translate to a mobilization rate⁸ of 9.3x compared with 5.6x for IFC's total portfolio in FY99. Average net investment is \$23 million, while average project cost is \$208 million. These are significantly larger than IFC's portfolio averages. At end-FY99, IFC's exposure in telecommunications represented 8 percent of the total disbursed portfolio.

Other features of the telecommunications portfolio include the following:

- Since FY70, IFC has \$280 million total equity or quasi-equity investments in 28 projects. These investments represent 30 percent of net commitments. About three-quarters of the equity investments are in eight countries that, in 1997, had telephone densities⁹ ranging from 2.47 (Indonesia) to 30.42 (Hungary).
- From the traditional basic networks, IFC's investments recently have been moving to the mobile telephone subsector. As of end-FY99, IFC's net investment commitments to mobile telephone projects amounted to \$298 million, or 32 percent of the total. IFC also has investments in basic and mobile projects which, when combined with "mobile," account for 61 percent of total net investment commitments, or \$559.3 million.
- The telecommunications portfolio is heavily weighted by funding toward Latin America and the Caribbean, which accounts for \$373 million, or about 41 percent of net commitments, as of the end of FY99. However, recent committed approvals show a shift toward Eastern Europe and Sub-Saharan Africa. From its peak of 66 percent in FY96, committed approvals on new projects in Latin America and the Caribbean dropped to 30 percent in FY97 and to none in FY98 and FY99.
- Three quarters, or \$706 million, of net commitments are for projects approved after the Telecommunications Division was created in FY93.
- The decline in the dollar volume of commitments and approvals reflects the recent shift from large post-privatization wireline investments in the mid-1990s to relatively smaller mobile telephone investments in higher-risk countries. The drop in commitments is due to the difficulty in concluding agreements in higher-risk countries where the regulatory framework is less developed.
- The decline in both number and dollar amounts of approvals in recent years is also due to IFC's increased focus on difficult markets, where projects are few and smaller and where private sector interests are limited. Given the success and demonstration effects of early IFC and subsequent private sector telecommunications projects, along with the overall improved outlook for these liberalized markets, private flows to these markets have increased. This prompted IFC to move on to newer and riskier markets where IFC's pres-

Figure 2.3 IFC Annual Telecommunications Commitments and Approvals, 1986-99



Source: IFC data.

ence can have a larger impact in stimulating private sector investments.

- By number, 63 percent of the commitments are in low- and lower-middle-income countries. But by funding, only 40 percent of commitments are in these countries, reflecting the small size of projects.
- By number, 71 percent of the commitments are in high- and high-medium-risk countries.¹⁰ By funding, 69 percent of commitments are in these countries.

Other IFC Activities—Telecommunications

Advisory services. IFC's Corporate Finance Services Department (CFS) provides fee-based advisory services that facilitate private sector participation in state-owned-and-operated enterprises. It has undertaken three telecommunications advisory assignments (Ecuador, Haiti, and Uganda) since its establishment in FY89 (4 percent of the total CFS advisory assignments through FY99). All three assignments dealt with

privatization of the state-owned telephone company. One assignment included advice on the licensing of a second national operator. Two assignments were undertaken in FY95 and one in FY96. No Foreign Investment Advisory Service (FIAS)¹¹ activities were undertaken specifically in the telecommunications sector.

Technical assistance. IFC provides TA funding using grants from bilateral and multilateral donors under the Technical Assistance Trust Funds (TATF) Program. The TA assignments under the TATF program are developed and task-managed by IFC's operations staff. Technical assistance under this program includes feasibility and prefeasibility studies, project identification studies, strengthening of the environment for private sector development, capacity building for private businesses and government agencies, and privatization. IFC approved 27 telecommunications sector TATF projects from FY91 to FY99 for a total of \$1.9 million.

Among the notable features of the telecommunications TA approvals are:

- Telecommunications TA approvals in the 1990s averaged 2.9 percent of the total TA approvals.
- Sub-Saharan Africa accounted for 57 percent of the TA projects by funding, followed by Asia (17.5 percent), Latin America and the Caribbean (12 percent), Europe (8.3 percent), and Central Asia, the Middle East, and North Africa (5.4 percent). This reflects IFC's more proactive telecommunications strategy in high-risk countries.
- Up to 52 percent of the countries with TATF assignments are low income. Approvals in these countries account for 72 percent of funding. By number, 81 percent of the countries with TATF assignments are high and high-medium risk. By funding, 95 percent of approvals are in these countries.
- While Sub-Saharan Africa had only 2 percent of IFC's committed telecommunications investments, more than half of TA assignments were in that Region. Latin America and the Caribbean had 41 percent of IFC's telecommunications investments, although it had only 12 percent of TA assignments. This is probably due to the difference in the level of reform process and liberalization between the two Regions.
- Telecommunications TA included such assignments as structuring a privatization strategy for the state-owned telecommunications operator; providing preprivatization and project preparation assistance (preparation of feasibility studies, organizational strategies, and market assessments), and reviewing the domestic telecommunications sector.
- Through FY99, IFC made investment commitments to five telecommunications projects that featured TATF assignments related to project preparation.
- All four TATF assignments on regulatory reform were connected with CFS privatization advisory activities.

Other IFC Activities in the Information Infrastructure Sector

Whereas its telecommunications investments have shifted from basic telephone to mobile telephone networks, IFC has made only a few non-telecommunications investments in the II sector.

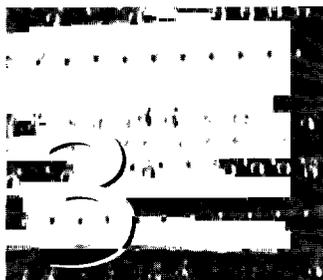
As of the end of FY99, IFC's investment commitments in this area amounted to only \$120 million, or 13 percent of the total in the sector. IFC made its first investment in this area in FY92, an \$8 million investment in a project to manufacture digital telecommunications switches. Other IFC investments had the following components:

- Upgrade of earth (satellite) station facilities to introduce and link an electronic data interchange (EDI) service for business-to-business electronic commerce; support an existing, expanding Internet subscriber support base; and enable the creation of private data networks.
- Establish paging systems; a nationwide satellite-based tiny aperture terminal (VSAT) network for data and occasional voice; and nationwide e-mail and fax store-and-forward services.
- Manufacture, launch, and operate a commercial satellite for domestic and regional communications and TV broadcasting applications. Expand a cable TV network.

Information Infrastructure Components of Nontelecommunications Projects

Any project in any sector can have telecommunications and II components. For instance, general manufacturing projects can include telecommunication and II facilities. A hospital project can have a telemedicine component, while an education project can include Internet infrastructure. However, IFC does not keep a separate database of nontelecommunications projects with II components.

Investments in telecommunications and II are also made through investment funds. IFC has five committed technology and infrastructure funds that are likely to have significant subprojects in II. Only two of them have significant investments in telecommunications and telecom-related businesses. One equity fund has a third of its approved investments by value in a wide-area network systems integrator. The other fund has made nearly half of its investments in eight telecommunications projects. IFC's investment commitments in these two equity funds represent 70 percent of the total investment commitments made by IFC in those five technology and infrastructure funds.



PROJECT AND SECTOR OUTCOMES

Efficacy of Bank Telecommunications Projects—Performance and Outcomes

Telecommunications projects have generally performed better than the overall Bank portfolio or the infrastructure portfolio, but most ratings have declined. Table 3.1 shows OED ratings for the 35 projects completed since 1993 and ratings of projects completed before 1993. The pre-1993 population was exclusively representative of “old agenda” projects approved in the 1970s and early 1980s. About a fourth of the post-1993 projects reviewed for this study were approved after 1990 and reflect, at least partly, the “new agenda.”

Completion Ratings

A closer look at the post-1993 project ratings reveals that this deterioration may have been temporary. The 12 most recent projects (those

approved after 1990) received substantially better sustainability and institutional development ratings than those approved in the late 1980s (table 3.2). This is noteworthy considering that

Table 3.1



Rating factor	Telecommunications		Infrastructure		All sectors	
	Pre-1993	Post-1993	Pre-1993	Post-1993	Pre-1993	Post-1993
Satisfactory outcome	90	83	62	68	76	69
Likely sustainability	88	72	61	49	55	47
Substantial institutional development	30	45	30	33	28	32
Satisfactory Bank performance	n.a.	85	n.a.	74	n.a.	72
Satisfactory borrower performance	n.a.	63	n.a.	65	n.a.	68

Source: OED data.

this latest set of projects had more ambitious institutional development objectives.

Supervision Ratings

Assessing ongoing projects on the basis of supervision self-ratings is a perilous exercise in any sector, but for telecommunications the problem is compounded because the majority of the active portfolio (39 of 57 projects) consists of multisector projects whose overall ratings may not reflect the performance of the telecommunications component. The small portfolio (18) of stand-alone telecommunications projects continues to perform well above the Bank average, with only 7 percent rated at-risk and no problem projects (compared with 19 percent and 14 percent for the Bank as a whole). However, a review of the latest Project Supervision Reports (PSRs) and an FY99 annual review of portfolio performance rating for the 39 active multisector projects involving telecommunications reveals some worrisome findings:

- Almost a third of the PSRs did not comment on the telecommunications component, a clear indication of insufficient attention to telecommunications in the supervision of multisector projects.
- Only seven PSRs rated the telecommunications component separately (as allowed under the new format).
- Some 18 percent of the 39 active multisector projects were rated as at-risk overall and 15 percent as problem projects.

Institutional Development Impact and Sustainability of "Old Agenda" Projects

Physical objectives. Most completed projects achieved—and often exceeded—their physical

objectives for expanding networks and introducing new technology. In the few instances where the objectives could not be met, the cause was poor management or the weak institutional capacity of the public telecommunications operation (PTO), as in Papua New Guinea. Significant project achievements included setting up of fiberoptic backbones (Pakistan); deploying digital technology (Senegal, Togo, Western Samoa); increasing transmission capacity through network expansion (Côte d'Ivoire, India, Indonesia, Laos, Nepal, Pakistan, Senegal); increasing switching capacity (Benin, Laos, Poland); improving service quality (Fiji, Pakistan); and expanding telecommunications services to rural areas (Morocco, Nepal).

Agency-level institution building. When the institutional development objectives of projects are aimed at capacity building in state-owned enterprises, they were only partly successful. While management information systems (MIS), billing systems, and rationalized management practices were introduced, the state-owned enterprise usually remained ineffective, underscoring the inadequacy of existing institutional arrangements for the sector and precipitating sector reform. In Nigeria (1990 project), for example, few of the physical, institutional, and policy objectives were met as project implementation suffered from procurement delays due to Nigerian Telecommunications Ltd.'s weak implementation capacity, excessive government interference, and rapid management turnover. In Uganda (1989), the primary physical objectives were met but fell substantially short of targeted improvements in operational efficiency and quality of service, mainly because of Uganda Posts and Telecommunications Corporation's (now Uganda Telecom Ltd.) weak implemen-

Table 3.2 But Institutional Development and Sustainability Ratings Are on an Upward Trend (percent)

Rating factor	Pre-1990 approvals	Post-1990 approvals
Likely sustainability	71	75
Substantial institutional development	35	58

Source: OED data.

tation capacity. However, most projects did achieve the objective of reorganizing the PTO on commercial lines, usually by converting it into a state-owned corporation (Côte d'Ivoire, Guinea, Hungary, Indonesia, Morocco, Pakistan, Senegal, Sri Lanka, Togo).

Institutional Development Impact and Sustainability of "New Agenda" Projects

Progress on key dimensions of sector reform (as embodied in OP 4.50) by a sample of Bank borrowers includes the following.

Privatization. The inherently difficult and contentious nature of privatization has made both project documents and Bank strategy cautious about privatization. While almost all projects after 1994 mention private sector participation and restructuring of government agencies, privatization has only become an explicit objective in the most recent projects. In most projects aimed at sector reform, Bank advisory services have helped the borrower to draw up contracts for privatizing the monopoly. Full or partial privatization was successfully completed with the Bank's help in a number of countries (Argentina, Bolivia, the Czech Republic, Indonesia, Mexico, Peru, Sri Lanka, the Brazilian state of Rio Grande do Sul). And privatization is under way in several others (Bulgaria, Cameroon, Honduras, Madagascar, Moldova, Nicaragua). But privatization has been a slow process and has run into political (Uruguay) and other problems: license terms were unacceptable to private investors (Ecuador), investors lacked confidence in the institutional environment, especially given the early experience of private investors (Tanzania).

Regulation. In some countries, Bank efforts to set up regulatory bodies have foundered on lack of country capacity, even when projects included training and consultant services. In Mexico (1990), for instance, limited public administration budgets, noncompetitive government salaries, and burdensome procurement made it difficult to upgrade the capabilities of a line ministry to meet the regulatory challenges of such a technically advanced sector. In other countries (Bolivia, Indonesia, Panama, Peru, Sri Lanka), the regulator has become more ef-

fective. Some projects have sought to strengthen the regulatory structure and the environment for private investment even after the institutions had been established (as in Colombia and, more recently, the Dominican Republic). But setting up an independent regulator has not necessarily been the solution to sector problems. In many instances (Guinea, Hungary, Poland) the sector has attracted private investment even without a strong regulator. In other instances, setting up a regulatory agency has been inadequate stimulus for sector reform. For example, Tanzania has had limited success despite having an independent regulator (although it has attracted a global mobile telephone operator whose operations became a financial success, it has failed to attract private investment in the PTO). Furthermore, long-term sustainability of the regulator often remains fragile due to poor incentive structures, overambitious regulators (Tanzania), or undue government influence. In other cases, however, the Bank's help was central to the successful strengthening of regulatory capacities (Bolivia).

Competition. Most recent Bank projects have included assistance with drawing up licenses and creating conditions for competition. There has been a notable difference in the degree and phasing of competition between fixed and mobile telephony projects. In mobile telephony, it is more common to have a faster phase-in of competition because companies are new, and so are management, labor, and technology. Customers are less price-sensitive and are therefore able to afford cost-based tariffs. And the costs of build-out obligations are substantially less. For these reasons, mobile telephony was almost always opened to competition in the initial stages of reform, with spectacular results on coverage and prices.

Fixed telephony projects, in contrast, usually involve the acquisition, modernization, and expansion of recently privatized networks. These networks usually come with an inefficient management, a bloated workforce, outdated technology, and non-cost-based tariffs. Faced with the challenge of transforming an inefficient operation into a profitable company while committing to a capital-intensive build-out investment program, project sponsors view limited exclusivity as one

way of lowering risks. Furthermore, countries have seen the granting of exclusive licenses as an easy way to maximize privatization proceeds. On the whole, where initial exclusivity periods were granted, as in Argentina, Bolivia, Mexico, and Peru in the mid-1990s, they were initially kept relatively short (or were subsequently shortened through negotiation) and were offset by obligations to invest in low-density, particularly rural and low-income urban, areas. Some observers believe, however, that many countries were too eager to grant exclusive licenses without first truly "testing" the market (as did, for instance, Ghana, which in 1998 opened up the fixed-telephony segment to outright two-party competition without granting even limited exclusivity to its just-privatized fixed-line operator). Alternative approaches were pursued in some Asian countries. The Indonesia telecommunications sector,

for instance, works on a public-private principle, with private sector participation taking a variety of forms in collaboration with the domestic carrier, TELKOM, and the international carrier, IN-DOSAT. Private operators are allowed into the fixed-services market through joint ventures with these companies.

Impact of reform. Many new agenda projects are still in their initial phase of reform implementation and it is still too early to measure ultimate outcomes—with the exception of mobile telephone penetration, which in most cases increased exponentially immediately after the introduction of competition (in El Salvador the number of mobile telephone lines surged from 50,000 to 150,000 in less than a year). And even in less-recent projects, detailed data on ultimate impact—in increased penetration (by areas and income groups), improvements in quality of

Box 3.1

The Impact of Peru's Telecommunications Reform

In 1993, the Peruvian government embarked on a major reform of its telecommunications sector. The program was supported by two Bank loans: the Privatization Adjustment Loan (L3595) and the Privatization TA Loan (L3540), both approved in FY93. New laws enacted in 1993 and 1994 provided for the privatization of CPT and Entel (the two state-owned utilities) and the establishment of an independent regulator, the Supervising Agency for Private Sector Investment in Telecommunications (OSIP-TEL). Given Peru's limited attractiveness to private investors at the time, the government agreed to grant the new foreign operator (Telefónica of Spain) temporary exclusivity (five years, later renegotiated down to four years) 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.

The mobile telephone market was partially liberalized right away and is now fully competitive (with three current licensees, including Bell South of the United States). Following the expiration of the exclusivity period in 1998, new operators entered the telephony market, with 172 companies currently active. Private investment in rural areas is now promoted and partially subsidized (via an earmarked 1 percent tax on phone bills) by a dedicated Telecommunications Investment Fund (FITEL). The results of the reform have been impressive (see table).

Indicator	1993	1998
Sector investments (US\$ million)	28	2 099
Number of fixed lines/penetration (per 100 people)	660 000 2.9	1 850 000 7.6
Number of mobile telephone lines/penetration (per 100 people)	50 000 0.2	600 000 2.4
Number of public phones	8 000	50 000
Number of towns with phone service	1 450	3 000
Percentage of poor households with a phone	1	21
Average waiting time for connection	118 months	35 days
Connection fee (US\$)	1 500	150

Source: OSIP-TEL data.

service, decreased prices by type of service, changes in government fiscal revenues—are not systematically included in supervision reports, particularly for multisector projects. Available data on selected countries point to clearly positive impacts in mobile telephone penetration (but generally concentrated in middle-to-higher-income urban groups), lower prices for mobile telephone and international calls, and significant improvements in the quality of fixed-telephony service. At the same time, significant variations exist across countries with regard to local call pricing, penetration in low-income and rural areas, and the fiscal impact of reform. Peru appears to be one of only a few countries where the impact of reform has been fully monitored and where it has been clearly positive on most counts (box 3.1), thus hinting at a possible best practice model.

Factors in Project Performance

Global market pressures and borrower participation in international agreements and negotiations such as the General Agreement on Tariffs and Trade and the World Trade Organization were powerful incentives for client countries to heed Bank advice on sector reform. In particular, liberalization, which in some countries dismantled cross-subsidies and introduced competition in value-added network services (VANS), brought price decreases that induced large corporate users—who provide the bulk of PTOs' revenues—to migrate to reformed markets that offered better opportunities. This increased pressure on traditional PTOs to follow the reform path themselves.

Country factors have also had a major influence on the performance of projects, and largely explain the divergence of project outcomes. Where country commitment was strong, as in Indonesia and Sri Lanka, Bank projects have been very successful. Gaining support for the reform process from the political and bureaucratic leadership was key. In Sri Lanka, for example, the continuity of officials within the political structure and in the bureaucracy, who have been strong supporters of the reform program, has been critical to the relative success of the reform program.

Consensus among all major stakeholders proved crucial to both the success and the sus-

tainability of reforms. In Indonesia, an important component was the organization of seminars, workshops, and studies on restructuring and reform. Where there was resistance to liberalization, a more pragmatic and cautious approach sometimes proved successful. In the early stages of liberalization in Sri Lanka, for instance, the Bank's pragmatism in making the original objectives of the Second Telecommunications project less ambitious in anticipation of labor problems contributed to a more successful outcome and enabled the reform process to proceed.

Bank factors that contributed to project success included staff continuity, sequencing of sector assistance, and a long-term presence. Bank performance in Nigeria (1990 project) suffered from excessive staff turnover during supervision and the absence of a full midterm review. In contrast, in Sri Lanka and Indonesia, continuity of task managers has helped to create good working relationships between the Bank and country officials and has elicited both commitment and support from the borrowers. When projects have not succeeded, it has often been because the lessons of previous projects were not heeded. In Guatemala (1984), for instance, concern at appraisal about Guatemala Telephone Company's (GUATEL) implementation capacity was well founded but did not produce sufficient skepticism regarding the setting of the project implementation schedule. In Ecuador (1995), the Bank was slow to acknowledge that the loan was troubled and slow to cancel it.

Information Technology Components of Bank Projects

While Bank lending in information technology (IT) is estimated at more than \$2 billion a year, recent (1996, 1998) Internal Audit Department reviews concluded that the sector lacked institutionwide leadership and focus and that the Bank had not recognized the importance of a clearly organized informatics practice. The reviews recommended greater attention to IT as a significant component of development and a clear strategic plan to organize the informatics practice within the Bank. The 1998 review also recommended integrating IT activities more closely with other programs related to information infrastructure (II), such as *infoDev*.

Bank Performance—Process Aspects and Choice of Instruments

Standard input indicators point to above-average levels of process efficiency in the sector: over the past five years, lending costs for stand-alone telecommunications projects have averaged \$317,000 per project, with a supervision intensity of \$63,000 per year (compared to overall Bank averages of \$350,000 and \$62,000, respectively). This is impressive when looked at in conjunction with the above-average performance record of these projects. However, this does not take into account the recent reliance on multisector loans and nonlending activities. Information compiled by OED raises serious concerns about the use of multisector loans to address the sector reform objectives pursued by the Bank since 1993:

- Overall supervision ratings for multisector projects are significantly worse than those of telecom-only projects. And available data on the status of sector reform in Bank borrowers shows that, on balance, progress has been slower where the Bank's involvement was limited to components of multisector projects (with some noteworthy exceptions, such as Bolivia and Peru).
- Bank supervision under multisector projects appears to be below par: almost a third of the most recent PSRs for such projects do not even mention telecommunications. Of those that do, only a few rate the telecommunications component separately. Supervision efforts for these projects appear to focus excessively on short-term process aspects (such as procurement of consultants), partly because task management is assumed by nonsector specialists, leaving little time and resources for substantive Bank inputs on sector policy and strategy.
- Also, Bank resources assigned to preparation/appraisal of the telecommunications components of these projects, at an average of \$30,000 per project,¹ have been far below those spent on telecom-only projects (with a few noteworthy exceptions, such as in Bolivia, Ecuador, and Kenya). And Bank resources spent on the supervision of these components, at an average of 2.2 staff-weeks per

project in FY99, have been excessively low, both in absolute terms and compared with the average figure for telecom-only projects (again, with a few exceptions, such as Cameroon, Ecuador, and Gabon).

These findings confirm the opinion expressed by Bank staff during interviews that *de facto* budget constraints on the amount of time specialized staff can spend on telecommunications components of multisector projects have negatively affected the quality, and thus the impact of the Bank's contribution wherever its intervention has been limited to this instrument. In contrast, the more "standard" levels of lending and supervision resources assigned to telecom-only projects are associated with better-than-average performance. In other words, the Bank's attempts to foster broad sector reform "on a shoestring" may have been shortsighted. Unfortunately, Bank management, particularly country managers, continues to believe that the Bank can use a single multisector operation to both *trigger and support the implementation of* complex structural reform in several sectors at once—and do so within standard budget coefficients.

Assessing the cost-effectiveness of the Bank's numerous nonlending activities in the II sector would require a minimum amount of data and information on *both* their cost and their impact (beyond anecdotal "evidence"), which is not currently available. However, their sheer number and relatively small unit size, the large amount of scarce staff time they absorb, and the apparent lack of intra-Bank coordination raise serious concerns about overall efficiency. Indeed, the recent external review of *infoDev* (box 3.2) highlights the program's lack of focus and high ratio of operating costs to grants as weaknesses to address. Considering that *infoDev* is widely considered a highly effective program, it is doubtful that other Bank-sponsored or -executed nonlending activities are faring much better.

Inefficiency in the deployment of nonlending services has also been exacerbated by the distorted internal "pricing" regimes that result from the variety of associated funding arrangements, particularly the various tied and untied trust funds administered by different units of the Bank Group. Occasionally, this has led various parts of the Bank

Box 3.2 *infoDev*—An Interim Evaluation

infoDev is the only II nonlending program or activity to have been independently evaluated. A 1998 review of the program concluded that it had a high level of success in achieving its mandate of aiding the development of information and communications technology, as well as supporting private sector and institutional development. It also pointed to some weaknesses, however, such as inadequate mechanisms to disseminate project experiences, complicated management procedures, insufficient emphasis on social and developmental dimensions of

information and communications technology, a high ratio of administration costs to grants (35 percent), and a mismatch between the magnitude of Y2K issues and the program's limited capabilities. It recommended greater attention to information dissemination and evaluation. The program has taken steps to remedy the shortcomings identified by the review and implement some of the recommendations. In particular, overhead costs have been brought down to about 15 percent, which is in line with comparable grant programs.

Group to offer conflicting advice to a borrower (Tanzania), which seriously undermines credibility. Such "pricing" and organizational disincentives were overcome whenever individual staff took the initiative to informally coordinate their activities at the working level or when the country manager took a strategic approach to the Bank's involvement in the sector, based on quality rather than internal pricing criteria.

IFC Projects—Outcomes and Performance

Development Outcome

The evaluation population consisted of the 21 mature operations approved from FY93 to FY96. Approvals since FY97 have not reached sufficient maturity for evaluation. The development outcome analysis was done using a modified IAR/XPSR evaluation framework (described in Annex A).

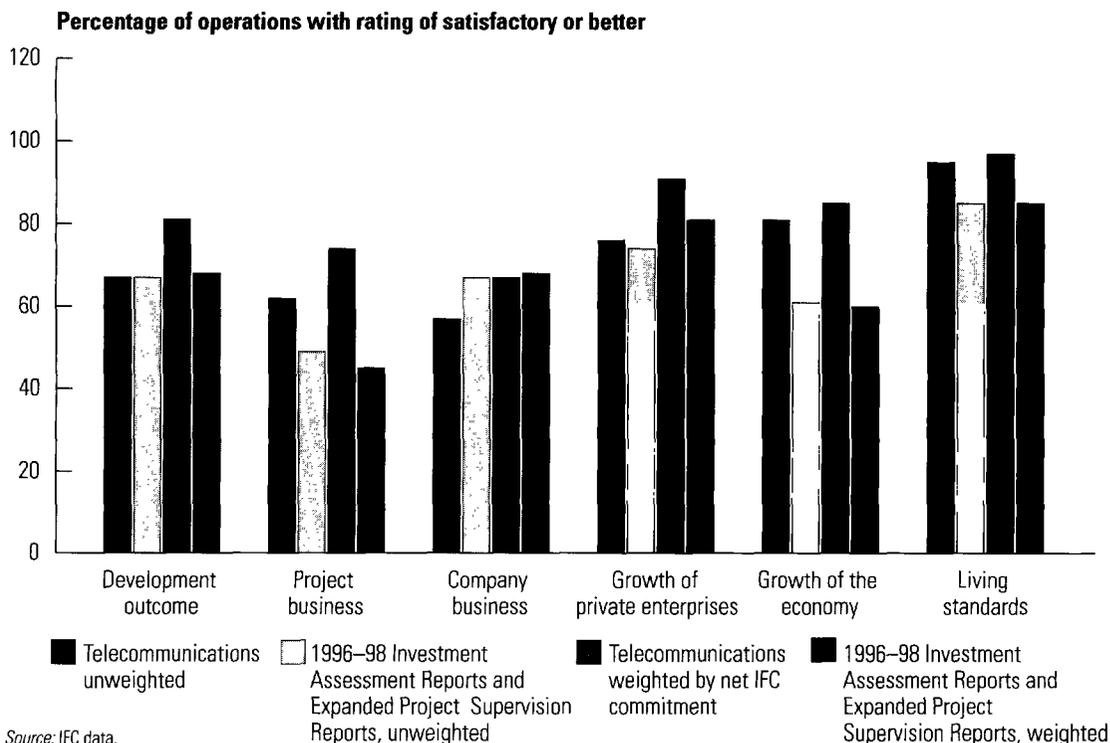
The characteristics of the evaluation population do not closely resemble the later approvals. The evaluation population has 18 percent of investment commitments by amounts in the mobile telephone sector. The later approvals have 83 percent. The evaluation population has 47 percent of investment commitments by amounts in Latin America and the Caribbean Region, while only 18 percent of the later approvals are in that Region. Up to 64 percent of the evaluation population's investment commitments enjoyed limited exclusivity. Only 21 percent of the later approvals have the same status. Greenfield projects account for 43 percent of the evaluation population's investment com-

mitments versus 38 percent in the later approvals. Because of the significant differences in characteristics of the evaluation population from the later approvals, the report could not use the findings from the evaluation population to draw statistically valid inferences about the later approvals.

Fourteen of the 21 operations achieved a satisfactory-or-better development outcome rating.² This is consistent with the 67 percent successful-or-better development outcome rating of the 1996–98 Investment Assessment Report (IAR) population covering all IFC sectors. Figure 3.1 shows the summary rating results for each performance dimension. Operations with satisfactory-or-better project and company business success generally had satisfactory-or-better development outcomes, consistent with the 1996–98 IAR/Expanded Project Supervision Report (XPSR) pattern. The performance was better based on weighted average (by net investment commitments), with 81 percent of the 21 operations obtaining a satisfactory-or-better rating compared with 68 percent achieved by the 1996–98 IAR/XPSR population.

Project business success. Thirteen of the 21 projects evaluated had satisfactory-or-better project business success. These 13 projects represent 74 percent of net IFC commitments on the 21 operations. Major contributors to project success were a transparent and conducive regulatory environment (limited exclusivity or duopoly), faster-than-expected demand growth, and strong management. Reasons for poor performance included cutthroat competition, delayed imple-

Figure 3.1 Performance Dimension Rating of FY93-96 Telecom Approvals



mentation, overexpansion, high capital costs, lack of economies of scale, and interconnection revenue-sharing issues.

Company business success. The evaluation population scored lowest in this performance dimension; only 12 out of 21 were rated satisfactory or better. These 12 projects with satisfactory-or-better company business performance account for 67 percent of net IFC commitments on the 21 operations. Most companies achieved a satisfactory-or-better rating because of the success of the projects. One operation with a satisfactory-or-better rating on project business success was less than satisfactory on company business success.³ This is consistent with IFC's experience from the 1996-98 IAR/XPSR population, which implies that project success does not guarantee company success.

Contribution to growth of productive private enterprise. Sixteen of the 21 projects were rated satisfactory or better. These 16 projects comprise

91 percent of the net IFC commitments on the 21 operations. Most of the projects were first or early entrants in the telecommunications sector and their success has inspired further private sector participation. Some projects have stimulated existing players and subsequent entrants to improve operations in order to stay competitive. Other projects enabled existing private enterprises to expand their businesses and operate more efficiently because of access to reliable telecommunications facilities. Telecommunications network projects created downstream linkages such as mobile phone dealers and service centers, and rural community-operated payphone centers.

Contribution to growth of the economy. Seventeen projects (representing 85 percent of net IFC commitments on the 21 operations) out of 21 received a satisfactory-or-better rating. Most projects provided telecommunications services that are worth more to customers than the price they pay. The projects helped stimulate economic

growth by providing efficient and less-costly communication infrastructure. They have also removed the financial burden from the government of operating telecommunications companies. Given their generally good operating performance, these projects have provided substantial tax revenues to the government.

Contribution to improving living standards. The evaluated operations performed best in this category. Twenty projects out of 21 were rated satisfactory or better. These 20 projects account for 97 percent of net IFC commitments on the 21 operations. The projects' contribution to living standards included job creation, skills training, access to telephones, reduced waiting time for new telephone connection, lower telephone tariffs, improved service, clearer connection, and a higher percentage of telephone calls getting through and completed. Nonbasic telecommunications projects provided increased access to timely information. In all cases, that project economic rates of return inclusive of consumer surplus almost certainly exceeded their formal rates of return indicates that projects have benefited the economies at large more than they have benefited the project financiers.

Results by Region

The evaluation population is too small to draw any conclusion on regional trends. For instance, there are only two projects in Sub-Saharan Africa and one in Central Asia, the Middle East, and North Africa. This section of the report, therefore, illustrates IFC's experience in the different Regions and does not draw conclusions on regional trends.

Evaluated operations in Sub-Saharan Africa and Central Asia, the Middle East, and North Africa had a perfect satisfactory-or-better rating on all development outcome performance dimensions, despite the relatively high-risk rating of the countries in these two Regions. Latin America and the Caribbean ranked second, with six out of seven receiving a satisfactory-or-better development outcome, although only three out of seven of the operations had a satisfactory-or-better rating on company business success. Four out of seven operations in Europe achieved a satisfactory-or-better development outcome rating. The poor-performing projects were adversely af-

ected by weak strategic partners or none at all, an unclear regulatory environment, and economic slowdown.

Asia was the worst performer: only one of four operations achieved a satisfactory-or-better development outcome. Regulatory and sponsor issues adversely affected project performance. In two markets, an unexpected issuance of additional operating licenses put extreme pressure on the viability of the less-than-strong existing operators. The sponsor's lack of commitment and weak financial resources brought down one project. A project in a country heavily affected by the Asian crisis was able to respond effectively by scaling down project scope. Consequently, this project appears likely to weather the crisis.

Results by Subsector

The report classified the projects into four subsectors: mobile telephone⁴ only, basic (fixed line), mobile and basic, and others (cable television, satellite, telecommunications peripherals, and other miscellaneous telecommunications services). Because of the small size of the evaluation population, the "basic and mobile" and "others" subsectors are underrepresented and therefore could not be used to predict with confidence the results of similar operations.

The eight investment operations with "mobile telephone only" projects scored high on all performance dimensions: seven out of eight had a satisfactory-or-better development outcome rating, accounting for 99 percent of net IFC investment commitments on the eight mobile telephone operations. Mobile telephone projects were either pioneers or early entrants in the sector and enjoyed fixed-term exclusivity or duopoly. The only mobile telephone project that did not do well suffered from cutthroat competition that pushed mobile telephone tariffs in that market to one of the lowest in the world. "Basic and mobile" operations were the second-best performing subsector with two out of three achieving a satisfactory-or-better development outcome. The poor-performing project was hit by an economic slowdown that dampened demand and by the foreign technical partner's withdrawal from the country.

Four out of seven of the "basic" investment operations achieved a satisfactory-or-better

development outcome. These four operations account for 57 percent of IFC net commitments on the seven “basic” operations. All three operations with less-than-satisfactory performance had problems with, or had no strong and committed, strategic partners. In one operation, the sponsors’ conflicting interests stalled the project. Another operation was a rural telephony network where the original sponsor abandoned the project after concluding that growth potential was limited given the small population of the concession area. The third operation had difficulty meeting build-out requirements because of no strategic partner and weak financial resources.

Investment operations in the “other” sector performed the worst, with only one out of three rated satisfactory or better in development outcome. One less-than-satisfactory project overbuilt capacity and was unable to induce a proportionate increase in demand due to a slowdown in the economy. The other project that did not do well experienced significant delays in implementation. Demand for these peripherals or nonbasic services proved to be income-elastic and therefore more vulnerable to macroeconomic swings.

Performance Drivers and Obstacles

Operations that achieved a satisfactory-or-better development outcome are closely associated with satisfactory-or-better investment performance. Of the 14 operations with a satisfactory-or-better development outcome, 12 have satisfactory-or-better investment performance. IFC operations that achieved satisfactory-or-better investment performance (and development outcome) generally feature the following characteristics.⁵

- *Markets and marketing.* The ability to respond quickly to emerging market opportunities and threats, such as accelerating expansion capital expenditures to meet a rapidly rising demand, introducing prepaid calling cards and other innovative payment plans to address declining customer credit quality, and building brand loyalty in anticipation of new or increased competition.
- *Physical products and services.* Superior network quality, advanced technology, compet-

itive operating efficiency, strong billing operations, and good customer services.

- *Operating license.* Pioneering/first entrant, limited exclusivity (mostly for fixed-line telephony) or duopoly status.

Among the reasons for less than satisfactory investment performance (and development outcome) are:

- *Regulatory issues.* Unfavorable and nontransparent regulatory environment, unbalanced revenue sharing with the national operator, high license fees, short license periods, overcrowded market, subsidized state-owned competitors, and unfavorable interconnection agreements.
- *Sponsor/management problems.* Weak sponsor commitment, expertise, experience, coordination, control and/or resources, and working relationship with local partners; lack of management expertise.
- *Macro environment.* Currency depreciation, financial crisis, and economic slowdown.

Main Lessons from Bank Group Project Experience

It is too early to measure the full impact of reforms promoted by Bank projects under the “new” agenda as most are in their early stages of implementation and only a handful have been evaluated. Nonetheless, the evaluation of mature IFC projects and the review of ongoing Bank projects offer several lessons regarding sector reform approaches (lessons specific to IFC telecommunications operations are presented in Annex B):

- Even partial competition, through liberalization of mobile telephony, can bring about increased investments, lower prices, and improved service quality.
- Establishing a regulatory body does not obviate the need for a well-articulated government policy and strategy.
- Weak institutional capacity in poor countries is a major constraint to effective regulation. Two steps are crucial to regulatory sustainability: (a) adequate capacity building within the regulatory body to ensure its effectiveness and efficiency; and (b) attention to the broader institutional environment that would determine the regulatory structure’s ability to function with transparency, accountability, and

independence from undue political interference. Ghana demonstrates the importance of this: although the Bank helped in drafting legislation and setting up the regulator, the regulator has not operated successfully.

- Transparency in licensing and tariff setting (particularly for interconnection rates), as well as clarity regarding the role of the incumbent operator, are critical to attracting private investment.

In two areas, however, Bank and IFC experience and views have occasionally diverged: (a) the degree to which, in some countries, exclusivity periods need to be granted initially in order to attract private investment; and (b) whether the privatization of the incumbent operator should be completed and an independent regulatory body fully established before opening the sector to private investment (in some countries, Poland among them, privatization was undertaken relatively successfully, even in the absence of an independent regulator).

Several lessons relate to the Bank Group's own performance in the sector:

- An objective assessment of government commitment to reform is essential. As the Bank's Second Telecommunications Project in Hungary demonstrated, when there is political will and commitment to the reform process, even supporting the public PTO through investment lending can be highly instrumental in the actual reform and privatization. In contrast, when political will and institutional capabilities for reform were lacking, reform lagged: in Tanzania many of the critical elements—capital restructuring and tariff increases—were finally achieved only after the International Development Association threatened to suspend processing of the third project.
- Indonesia and Sri Lanka have demonstrated the advantage of long-term Bank involvement and staff continuity. In these countries, the Bank sequenced its reform support—from physical investment, to institutional strengthening and corporatization of the monopoly, to introduction of competition and regulation. In Papua New Guinea, Bank supervision was fragmented and deficient primarily due to an unusually high turnover of

task managers (five task managers in six years), leading to a lack of consistent support to the borrower.

- The choice of Bank Group instruments—lending and nonlending—and their effective coordination has had a demonstrable effect on the Bank Group's effectiveness in the sector.

Sector Outcomes

Broad sector outcomes need to be differentiated from the outcomes of specific Bank Group interventions because: (a) Bank Group interventions have been limited to a relatively small subset of developing countries, and (b) the outcome of Bank Group projects was assessed against stated objectives that were sometimes narrow in scope (such as specific geographical areas or parts of the whole network) or focused exclusively on means (such as initiation of the privatization process, enactment of a law) rather than results. Three sector-specific trends merit particular analysis: institutional reform in the telecommunications sector, improvement of national telecommunications systems, and development of an II capacity. The information presented here derives mainly from recent Bank and International Telecommunications Union (ITU) data.

Institutional Adjustment and Sector Reform

Privatization. A recent ITU report finds that 88 countries have fully or partly privatized their PTOs.⁷ In the majority of countries, the PTO is still government-owned, but if the countries that have plans to privatize do so, government-owned PTOs will become a minority by 2003. However, most poor countries have not privatized. The Arab states and 20 to 30 percent of African countries have not yet even accomplished the old agenda objective of separating postal from telecommunications activities. Every Region has a significant number of countries that have not acted on the ownership issue. Indeed, even in Western Europe, the majority of countries have not yet privatized.

Regulation. The trend in regulation tends to follow the trend in ownership. By August 1999, 84 countries had established separate telecommunications regulators. By the end of

Table 3.3**Competition in the Market for the Youngest Services, 1999 (percent)**

Service	Countries
Local	32
Long distance	26
International	26
Leased lines	40
Cellular mobile	66
Internet	80

Source: International Telecommunications Union.

2000, another 15 countries were expected to act. As with ownership, poor countries are lagging behind in establishing independent regulatory agencies.

Competition. Competition is most common in the youngest services, mobile telephone and Internet (table 3.3). Internet service providers typically lease telecommunications capacity to provide value-added services and compete directly with a PTO if the PTO establishes its own Internet services. Competition in the mobile telephone subsector has largely been driven by private investment in new operators.

The ITU does not distinguish in its data between developed and developing countries. Thus, the data for some regions look better than others because they include developed countries that undertook institutional adjustments some time ago. If about 50 high-income countries are removed from the data, then the progress percentages for institutional adjustment decline significantly. The first countries to adopt adjustments were those where institutional adjustments were

easiest to implement and resistance to them was relatively low (see box 3.3). Thus, the institutional adjustment process for developing countries is still at an early stage, and for most poor countries it is just beginning.

For countries that have embarked on institutional adjustments, continuing attention and support to capacity building is required to ensure their long-term sustainability. There is already enough evidence in some countries of rushed and failed privatizations, misguided regulation programs, and misdirected competition policies to demonstrate that institutional adjustment is not a one-time country injection to achieve change. The most important investments in institutional adjustment projects are those made in local human capital.

Improvement of the National Telecommunications System

In the aggregate, significant amounts of private investment have been committed to national telecommunications systems, and there is a gen-

Box 3.3**Resistance to Institutional Adjustment**

An important factor behind the resistance of some developing countries to institutional adjustment is the decline and impending collapse of the system for international revenue settlements among country telecommunications operators. Many developing countries—for which revenue settlement payments for terminating international calls are the principal source of

telecommunications revenue and an important source of hard currency—are fearful that increased competition will jeopardize the financial viability of their national telecommunications systems. Expert advice and assistance in how to mitigate this short-term fiscal impact in the transition period (such as via tariff rebalancing) could go a long way toward alleviating those fears.

Table 3.4

**Low-Income Countries Lag in Teledensity
(main telecommunication lines per 100 inhabitants)**

Income group	1995	1998	Increase	1998, excluding major urban centers
Low-income countries (61)	1.1	1.6	0.5	1.1
Lower-middle-income countries (114)	5.4	8.2	2.8	6.6
Upper-middle-income countries (23)	12.8	16.5	3.7	13.8
High-income countries (52)	52.1	56.1	4.0	47.8
Africa	1.8	2.2	0.4	1.4
Asia	5.4	7.3	1.9	6.3

Source: International Telecommunications Union.

eral impression that in many developing countries the systems have improved significantly. The principal measures of improvement in national systems are increased connectivity, investment in infrastructure, and improved service quality. In all three areas, however, low-income countries are faring far worse than countries in higher income categories.

Connectivity. National telecommunications systems provide the connectivity essential for any kind of electronic communication or information exchange. Although the primary purpose of the systems now in place is voice communication, the IT now being developed in many countries can transmit any form of communication or information exchange—voice, data, image, music, video. Those who do not have access to a network connection are denied access to all services. For those who are connected, the range of service possibilities is determined by the capacity and capabilities of the network. It may be only voice telephone; it may be all IT services; or, more likely, it may be a range of services between these extremes.

The most commonly used indicator of telecommunications system development in a country is total main lines per 100 population. Table 3.4 summarizes ITU data for countries by income group.

Countries with main line penetration rates of 50 or higher are regarded as having a universal service coverage of at least 90 percent of households and reasonable access to a telephone in all inhabited areas. Countries with penetration rates below 5 typically do not have even mini-

mal national coverage. Most experts consider that countries need to reach 10 before they have a foundation for developing a national IT of any consequence for the domestic economy.

Despite a small increase in main line penetration rates between 1995 and 1998, low-income countries are a long way from having developed national telecommunications systems, let alone ITs. At the present growth rate, it will take nearly a decade for those countries to reach an average penetration rate of 5, and about 15 years to reach 10. As a significant majority of low-income countries have penetration rates well below the average, 35 to 40 countries will fall well behind even at this rate of development. Moreover, the gap between the low-income countries and the other countries has risen dramatically and will likely continue to widen through 2000 and beyond. The absolute increase in penetration rates for middle-income countries is 6 times that of the low-income countries. Surprisingly, it is the high-income countries, those that already have universal service, that have the largest increase in main lines per 100 inhabitants of any income group. This suggests that the growth in second lines in households to provide for continuous Internet access in many high-income countries may be faster than the growth in first lines in developing countries.

Removing the data for major urban centers affords a better indication of geographical coverage. The data show lower numbers across all countries: 83 countries have penetration rates below 4 and 56 countries have rates below 1.

Investments. The trend in investment helps explain why many countries have not been able to develop national telecommunications systems more rapidly. More recent (1998) ITU data put telecommunications investments in high-income countries at \$134 per capita. In contrast, in at least 95 countries, investment was less than \$10 per capita and in at least 21 countries, it was less than \$1 per capita (if nonreporting candidate countries are included, the number would increase to about 45). More significantly, figure 3.2 shows that investments, as a percentage of GDP, have increased more rapidly in middle-income and upper-middle-income countries than in OECD countries since 1995. This provides some hope that the gap with OECD countries will gradually be closed. Meanwhile, however, investments have remained flat in low-income countries (with the important exception of China, which has spent a remarkable 3.3 percent of GDP on the telecommunications sector in the past five years).

The contrast between investment patterns of middle-income and low-income countries is also striking when comparing recent trends in private sector financing (figure 3.3).

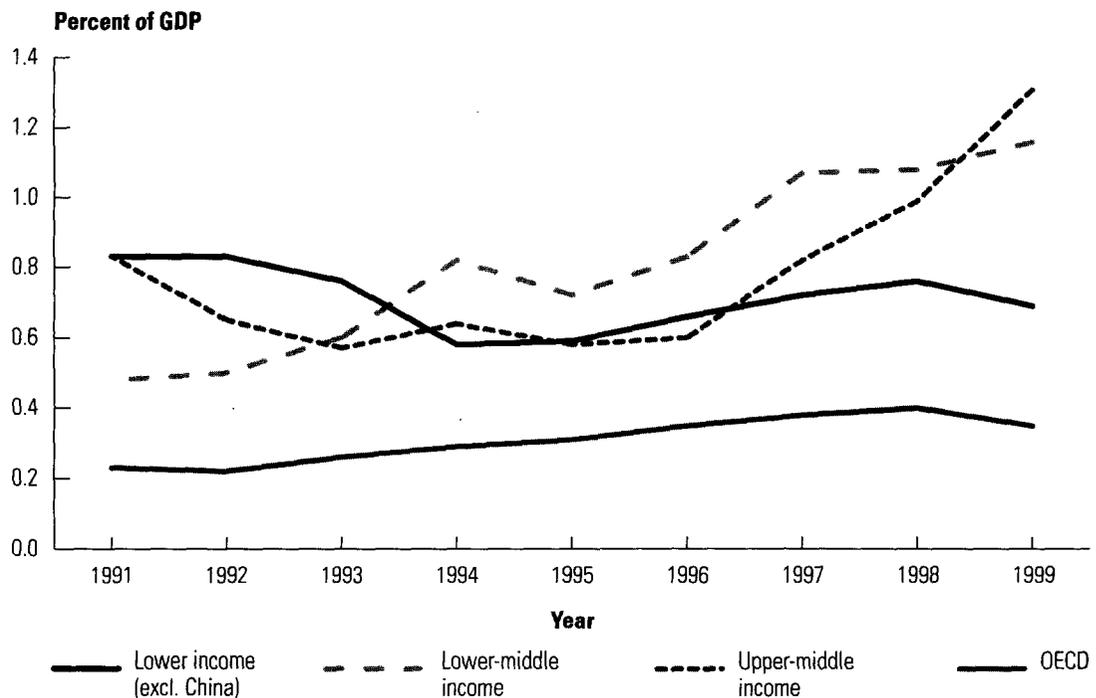
This reflects the fact that, as for other infrastructure sectors, the recent increase in private financing of telecommunications has been heavily concentrated in a few, mostly upper-middle-income, Latin American and Asian countries.

Quality of service. Notwithstanding the limited and uneven progress achieved on overall investment levels, improvements in the quality of service have been substantial and widespread, as illustrated by the statistics on faults per line. This improvement has been most pronounced and sustained in countries that have carried out deep and early sector reform (such as Hungary, Indonesia, Mexico, Peru, Sri Lanka).

Information Infrastructure Development

Given the enormous challenges of building national telecommunications systems to supply

Figure 3.2 Telecommunications Investments Have Accelerated in Some Developing Countries but Lagged in Most Low-Income Countries . . .



Source: Pyramid Research.

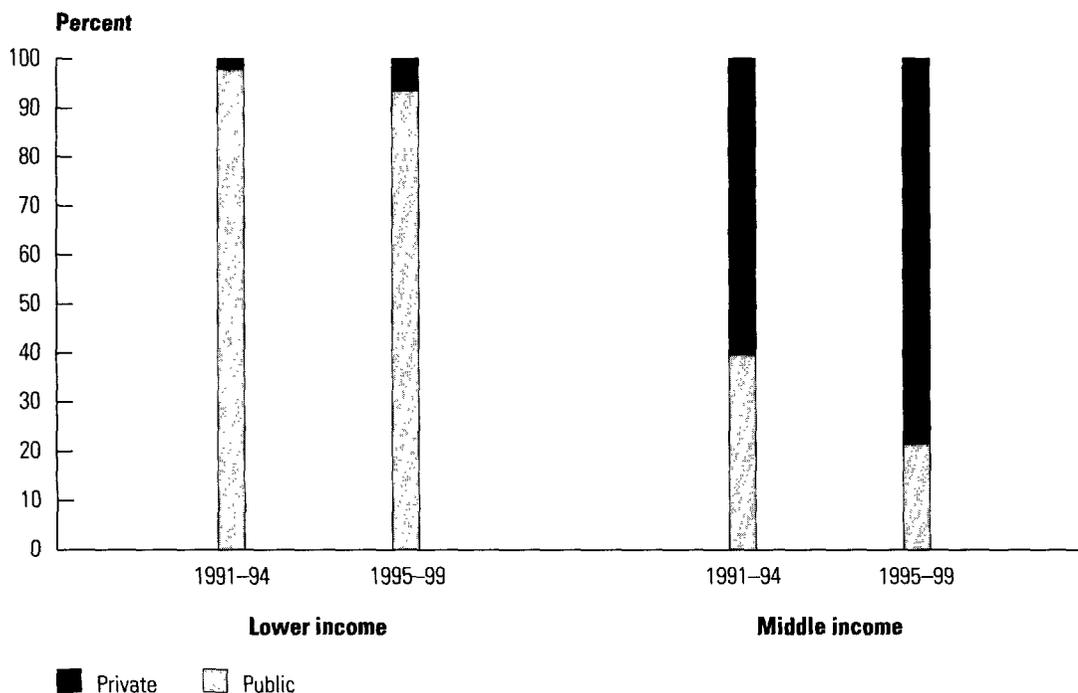
basic services in developing countries, adding the even more difficult challenge of establishing national IIs might seem unrealistic. If high-income countries are undertaking investments per capita in the telecommunications sector that are 12 times those of lower-middle-income countries and 54 times those of low-income countries, there is little hope that most developing countries will participate in the global information economy of the next century.

The challenge—and the opportunity—lie in the ability of II to make a national telecommunications system significantly more efficient, more capable, more valuable, and more profitable to individual users, firms, industries, and the government. But that will not happen automatically, nor will it happen without careful research, planning, and implementation. Governments and regulators should establish an II policy and regulatory framework with a view to maximizing efficient private sector participation, supplemented as appropriate by pub-

lic-private partnerships (for example, to foster low-income and/or rural access).

Every country will have a program, however large or small, to improve its national telecommunications system. By considering specific opportunities for II improvements where benefits greatly exceed additional costs, these programs can move along a more productive path at every stage of development. By integrating telecommunications system and II development into a single program, a country can generate additional resources that may have an accelerator affect on the telecommunications sector and the economy. If developing countries and development institutions see II development as a step in a linear process that must follow telecommunications system development, few poor countries will ever get to the II step. But if II development is seen as a catalyst to stimulate a more rapid building of the national telecommunications systems of developing countries, chances of success increase measurably.

Figure 3.3 . . . As Has the Percentage of Private Sector Financing



Source: Pyramid Research.

Relevance of Bank Group Interventions in the 1990s

The relevance of Bank Group interventions can be assessed by answering four questions:

- Were the stated objectives of the interventions in line with existing Bank Group policies?
- Were the interventions focused on the countries most in need of assistance?
- Were the instruments used suited to the stated objectives and to individual country circumstances?
- Have Bank Group policies been appropriate given the evolving sector environment?

Consistency with existing policies. Detailed analysis of the objectives and design of Bank interventions and IFC activities shows that they have been broadly consistent with the principles in OP 4.50. In the few countries where Bank investment lending for the telecommunications sector continued (Indonesia, Jordan, Sri Lanka), it was explicitly tied to firm government commitments on sector reform. IFC, given its private sector mandate, has focused on supporting the “private provision” aspect of the policy. The Bank, for its part, has tended to emphasize competition and regulation. This difference in focus is evident in the occasional IFC financing of projects in countries with clearly suboptimal regulatory and policy environments (for example, no independent regulator and the main telephone operator remaining state-owned, as in El Salvador and Uganda), while the Bank is alleged to have taken an excessively dogmatic view and blocked potentially beneficial IFC preprivatization loans in some cases (as in Bulgaria and Romania). While understandable, these different perspectives need to be reconciled at the country level via an agreement on a joint sector strategy.

Country selection. The review of sector outcomes suggests that lower-income countries were (and are) in more urgent need of assistance than others, given the lag in sector reform, the growing gaps in investments and teledensity, and their lesser access to foreign private capital. The breakdown of Bank interventions by country income groups suggests that the Bank has been responsive to that need: almost half of its projects have been in lower-income countries (including 15 in Sub-Saharan Africa). Reflecting investors’ in-

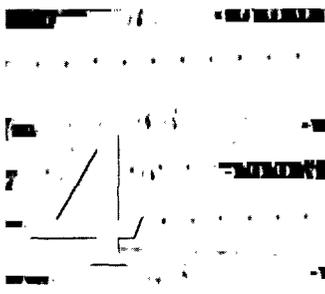
terest and IFC’s development agenda, IFC’s investee companies are heavily concentrated (up to 63 percent) in low-income and lower-middle-income countries, although they account for only 40 percent of investment volume. This also reflects the relatively small size of investments in poorer countries. More investments have been made in poorer countries in recent years (Moldova, Tanzania, Uganda, and Zambia).

Appropriateness of Bank Group instruments. The Bank’s use of lending and nonlending instruments in the sector has relied excessively on “inefficient” multisector loans and a fragmented approach to advisory and nonlending services. The countries where the Bank has had the most impact, Indonesia and Sri Lanka, are those where it took a long-term view of reform and supported initiation and implementation with a mix of instruments, including economic and sector work, trust-funded activities, and investment and technical assistance (TA) lending. The Bank Group’s organizational structure has not fostered a coordinated approach to the use of Bank and IFC instruments. Of particular concern, without clear criteria on their priority use there is potential for overlap (or even conflict) between Corporate Finance Services advisory services directed to the government (including the attendant Technical Assistance Trust Funds assignments) and similar advisory activities provided or funded by the Bank.⁸ The choice of Bank Group instrument in funding the main incumbent operator before privatization has been another ambiguous area, again due to the lack of clear criteria: Bank funding has been criticized for risking the perpetuation of state dominance of the sector, while IFC preprivatization loans have been viewed by some as creating perceptions of conflict of interest (that is, between the Bank Group’s dual role as advisor and investor). To address this concern, IFC does not participate in privatization projects where it has had an advisory role.

Relevance of Bank Group policy and strategy to sector environment. Overall, the policy principles of OP 4.50 have remained relevant to global sector trends and needs. However, they need to be updated in two areas: the government’s (and the Bank’s) role in fostering

access by the poor (especially in rural areas) and the implications of convergence, particularly of the Internet revolution (the next chapter elaborates on these two issues). Most important, these general policy principles have not been translated into integrated sector operational strategies, either at the global or Regional/country level, until the very recent Eastern Europe and Central Asia Region strategy. The IFC's annual "strategies" have been more akin to detailed marketing plans and have lacked a well-articulated development agenda and strategic framework. The absence of detailed strate-

gies has contributed to the fragmentation of the Bank Group's approach to II in individual countries, with critical decisions too often left to staff or consultants—or worse yet, not addressed at all for lack of budget resources (as appears to be the case in many multisector projects). (For example, regarding what advice to give on sector structure, licensing regimes, approach to universal service, or interconnection pricing; how to decide on the respective roles of the Bank and IFC; or how to establish linkages with other sectors such as health and education.)



OUTSTANDING POLICY AND STRATEGIC ISSUES

Rural and Universal Access

The Bank's role in rural telecommunications and the linkages of the sector to the poverty-reduction agenda has been unclear. While the importance of telecommunications to the efficient functioning of the government and the economy is recognized, when it comes to allocating Bank resources for poverty reduction, the telecommunications sector has taken a back seat to health, education, and water in the Country Assistance Strategy (CAS) process. The linkages of informatics and telecommunications to the Bank's poverty-reduction mandate have not been sufficiently well researched or sold to the Regional teams.

Rural components have generally been rare in telecommunications projects—only five projects before 1993 had such components, although that situation may be changing (see box 4.1). One reason is the ambiguity of the Bank Group's policy on the role of the public sector in fostering rural access, which has led staff to avoid promoting innovative policy options or proposing Bank financial support (for example, to private-public partnerships) in that area. This has left a gap that IFC has not been able to fill, apparently for lack of investor interest (only two such IFC investments have been made, and their performance has been less than satisfactory).

Besides the role of the public sector, there has also been a lack of agreement within the

Bank Group as to when rural access issues are best addressed. Some have argued that it should be a two-stage process, since there is little evidence that pure rural telephony is commercially viable on a stand-alone basis in most developing countries. In their view, initial efforts should concentrate on sector liberalization and competition to improve the overall efficiency of the country's telecommunications network and help reduce the build-out cost to extend coverage to the rural areas. Only in a second stage, several years later when numerous private competitors are active, can a sector-wide universal access charge be levied to subsidize expansion of rural coverage. This was the approach followed by Chile. Others have argued that there is too high a risk of rural

Box 4.1

Rural Telecommunications Focus May Be Increasing

Some recent Bank projects have rural components. A recently approved Bank project in Mauritania, for example, has a component to prepare a strategy for delivering information access and related services to rural and disadvantaged communities. The project is especially significant in its intention to identify

and test innovative institutional solutions to improve connectivity and access. It will finance consultants to study opportunities created by new technologies, exploring how new services could be further facilitated to improve access to remote and disadvantaged communities.

Box 4.2

Grameen Phone: Model for a New Approach to Rural Telecommunications?

In 1998 IFC approved an investment in a project to install and operate a nationwide digital cellular network in one of the world's poorest and least-developed countries. The project will provide capacity for 190,000 subscribers, covering 55 percent of the area of the country.

The aim of the project is to provide connectivity and promote small business development in rural areas. It created a company to sell airtime at wholesale rates to a nonprofit organization that will identify rural women entrepreneurs and help them establish village payphones. The nonprofit organization will also

help women entrepreneurs access financing from the local sponsor (a leading microcredit bank) for the purchase of cellular handsets. The village payphone program will benefit from the company's access to the sponsor's extensive microcredit bank network of 1,100 branches covering some 39,000 villages.

Early results of a pilot program involving about 300 villages revealed that the village payphone concept is feasible. Each woman entrepreneur can net an average of \$2 a day, or \$700 a year, from the village payphone operations. This earning potential is more than twice the country's annual per capita income.

access issues *never* being addressed if they are not put squarely on the reform agenda right from the outset, as was done by Peru (see box 3.1). Developing country experience is too limited to conclusively support one or the other approach.

There have been many recent examples of piloting new grassroot approaches to rural telecommunications in Africa, Latin America, and Asia (some supported by *infoDev*). However, their scaling-up has proved elusive so far (although the approach taken by Grameen Phone, box 4.2, appears promising). The experience of Red Científica Peruana, a local nongovernmental organization aggressively pursuing the installation of a network of infocenters throughout Peru, exemplifies the constructive role government can play in providing seed money and the difficulties of mobilizing lots of financing from foreign private investors who usually give priority to heavy corporate and high-income users.

Holistic Approach to Information Infrastructure Issues

None of the Bank projects approved before 1993 addressed broad II issues, but in an encouraging trend, four of the newer projects do. One of these, the Information Infrastructure Development Project in Indonesia, has adopted a holistic approach to II development. To meet a general objective of extending communications and information networks to facilitate sustainable regional development and economic growth, the project aims to expand the postal network to rural regions; extend e-mail, Internet, and tourism information services; introduce new value-added services using existing postal and electronic networks; develop legal and regulatory frameworks that will enhance sustainability; and strengthen institutional capability and capacity in relevant agencies and administrations. The project promotes private sector partnerships in the provision and management of

Figure 4.1

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

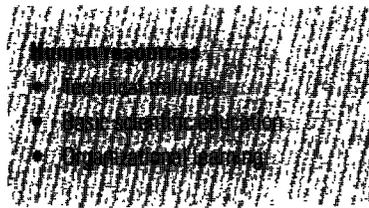
- Competition policy
- Interconnection rules
- Tariff regime
- Accounting rates
- Universal service

Information policy

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

Telecommunications infrastructure

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



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

Source: Adapted from Nirupam Bajpai and Anupama Dokeniya. *Information Technology-Led Growth Policies: A Case Study of Tamil Nadu*. Research Paper, Harvard Institute for International Development, August 1999

information networks and systems and promotes private sector development at the user end of the value chain of information services. The proposed Information Infrastructure Sector Development Loan in Morocco follows a similar approach. It supports the government in extending its liberalization of the telecommunications sector to the information technology (IT) and postal sectors, including the financial services provided through the postal network, recognizing the importance of strong synergies among the three sectors.

The Bank has gradually taken actions that recognize the recent rapid changes in the information and communications technology (ICT) sector. IT activities have been evaluated twice in recent years, and most of the specialized IT staff has been incorporated into the telecommunications division. *infoDev* has been established as a catalyst to stimulate information infrastructure (II) activities. *World Development Report 1998: Knowledge for Development* identifies a new role

for II in the development process. More recently, the Comprehensive Development Framework has attempted to treat development as an integrated process. These changes in direction and priorities for the Bank's development program all point to a potentially more influential role for telecommunications and II. Although these developments are more relevant to the future direction of Bank activities than to past projects, they are useful for judging trends and directions of the telecommunications and IT programs.

World Bank Group Coordination

The location of most of the Bank's telecommunications expertise in a central unit—the Telecommunications and Informatics Division (EMTII—now the Global Information and Communications Technology unit)—should, in theory, have fostered cross-fertilization of experiences from different countries. However, it has also meant that the telecommunications sector has

often been given a lower priority by country directors and, consequently, in CASSs. Coordination with the country directors has been handled through informal relationships between the country/Regional unit and the sector staff at EMTI. Where these relationships have been good, the Bank's presence in the telecommunications sector of that country has been significant and the country has benefited from sound technical advice (such as in Latin America and Caribbean countries, Sri Lanka, and Indonesia). Where coordination between the country/Regional unit and the sectoral unit was limited, sectoral experts have had less opportunity to be extensively involved in the process of sector reform.

In IFC, coordination between the Regions and the Telecommunications Division was also an issue until FY99 when the Regional departments were given responsibility for setting sectoral priorities within the countries. While it is too early to evaluate the outcome of this arrangement, it clearly allows for more coordinated IFC support in the telecommunications sector. However, competition among industry departments for the attention of Regional investment departments is high. There may be a bias among Regional departments toward more familiar sectors that may not include telecommunications, especially given the rapid change in technology and scope of this sector.

Organizational issues have been particularly prevalent in the informatics sector. Most notably, the sector has lacked institutionwide leadership and focus. And the absence of a clearly recognized and funded informatics thematic group has further contributed to the Bank's fragmented approach to IT-specific issues.

Fragmentation in the administration of Bank-managed trust funds and internal pricing distortions for advisory and nonlending services (such as between economic and sector work, trust-funded technical assistance, and Corporate Finance Services Department [CFS] services) have often resulted in poor coordination of Bank Group advice to countries. Privatization of state-owned monopolies has been particularly contentious due to the differing perspectives on this issue within the Bank Group. While most Bank projects mention privatization of the dominant

monopoly as an important component of the reform process that the Bank loans have been aimed at, this objective has often been part of more general multisector privatization projects, often administered by Private Sector Development units. Perpetuation of exclusivity has occasionally resulted, sometimes because of insufficient inputs by telecommunications experts in project management. This happened in Armenia, for instance, where the government awarded 15-year exclusivity to the privatized monopoly.

IFC's recent support for pre-privatization projects marked a departure from the traditional Bank and IFC respective fields of intervention and has presented new challenges for coordination. As of end-FY99, IFC had approved four pre-privatization projects, three of which have been committed (Hungary, Latvia, and Macedonia). Two of these operations have been evaluated in this report, and both of them achieved a satisfactory-or-better development outcome. The first IFC pre-privatization investment was structured in FY94, in close coordination with Bank staff, to help complete the financing of an expansion project partly funded by a Bank loan. IFC's key objectives were to help launch the first major telecommunications privatization in Eastern Europe and to give confidence to potential strategic investors. These objectives were met based on the amount of interest shown by world-class telecommunications operators and the privatization revenues realized by the government.

But investing in a pre-privatization project is seen by some as having the potential to create a financial incentive for IFC to lobby for extending exclusivity while it is in a strong position to do so—before its public partner is actually privatized. The review, however, did not find any evidence to support such perception. In fact, in all four preprivatization projects supported by IFC, the basic parameters (including exclusivity and the attendant build-out obligations of the project) of the license have been structured prior to IFC's involvement. In one operation, the exclusivity period is being renegotiated in response to increased private sector interest following the early success of the project and to align with current exclusivity periods being granted in other markets. To avoid the perceived conflict of interest in a dual

role as advisor and financier, IFC does not participate in projects where CFS is, or has been, an advisor to the government on privatization of the state telecommunications company. As in non-privatization projects, IFC has accessed Technical Assistance Trust Funds to provide project preparation assistance to pre-privatization projects. All IFC pre-privatization projects have been undertaken in coordination with the Bank. IFC did not proceed with the pre-privatization proposals in instances where the Bank and IFC have disagreed on the rationale for IFC's pre-privatization involvement.

While Bank and IFC telecommunications staff agree on the opening up of the sector to competition, there have been differences of opinion on speed and timing. IFC staff have generally supported the private sector's view that limited exclusivity is important in attracting huge financial commitments from international operators to meet the build-out requirements in pre-privatization and in enhancing the viability of pioneering projects (such as mobile phones) in countries with less-developed regulatory frameworks. This view has not been unanimously shared in the Bank, however, since others see it as in conflict with the Bank's objectives of establishing competitive regimes in its projects as quickly as markets will pursue. IFC's position is that limited exclusivity to the extent deemed necessary by private investors to commit to build-out requirements is not in conflict with the Bank's objectives. Rather, it lays the groundwork for a sustainable and healthy open competition. Successful projects have a strong demonstration effect in attracting new players in the country once the limited exclusivity has expired. Failed projects could provide a negative demonstration effect, especially in cases where the global strategic partners walked away from their projects because of a difficult enabling environment. Furthermore, a limited exclusivity period can

also provide some breathing room for the government to implement drastic tariff rebalancing measures before full competition sets in. Indeed, most IFC projects with expired exclusivity are now operating against key global players in a competitive environment. Evidence reviewed in this study appears to confirm that short (that is, no more than 4 or 5 years) initial exclusivity periods for fixed telephony operations can be beneficial in countries with very limited access to foreign private capital (for example, Peru in 1993). At the same time, exclusive licenses (including de facto restrictions on new entrants) are becoming rare for the wireless and international segments under current business environments.

IFC staff have generally argued that the state-owned telecommunications operators should be privatized before liberalization to offer a level playing field for new entrants (Annex B). However, this is rarely the case and, with appropriate risk mitigation measures, IFC has supported private telecommunications operators in undertaking projects in such markets with a less-than-desired enabling environment. For its part, Bank staff have usually argued that privatization of state-owned telecommunications operators is not a prerequisite for liberalization.

Both Bank and IFC staff agree that coordination between the Bank and IFC has been informal—with project task managers (on the Bank side) and investment officers (on the IFC side) consulting and providing input to their respective projects (in some countries, Bank and IFC staff have consulted each other in advising the regulators on international best practice). The merger of Bank and IFC staff into a joint practice group should resolve these coordination issues, but may exacerbate potential conflicting-interest challenges when Bank Group staff wish to be involved in both policy advice and transactions in the same country.

CONCLUSIONS AND RECOMMENDATIONS

Successful Projects but Variable Sector Impact

The trend documented in this review is similar to the one identified in the 1993 OED telecommunications review: projects have generally succeeded when measured against their physical and financial objectives, but evidence remains inconclusive that they have had any broad impact on developing countries as a whole in terms of ultimate outcomes. Most Bank and IFC investments were processed and delivered appropriately and achieved their physical targets and better-than-average returns. Indeed, there are some impressive success stories. But in the aggregate, (declining) Bank Group-financed investments have made only a limited contribution to the expansion and improvement of developing countries' national telecommunications systems, nor is there evidence that they have significantly contributed to overall development or to the alleviation of poverty.

The magnitude of the problem of building national telecommunications systems in developing countries and the limited effectiveness of loans for system expansion were key factors in the shift in Bank Group priorities to institutional reform and promotion of private sector investment. This was justified not by failures of past Bank projects to achieve physical and financial objectives, but rather by gradual recognition that the program was not helping to meet broader Bank Group objectives. This shift in priorities is justified not only by Bank experience but also by external evidence. However, explicit recog-

nition of the broader objectives in designing "new agenda" projects and assessing their effectiveness has not been standard Bank and IFC practice. While the evaluation of most IFC projects has shown demonstrable development impacts, development objectives have not been well articulated at entry or monitored at supervision. IFC, then, faces a risk parallel with the Bank of achieving well-documented financial success but being less clear on development impacts, especially since not all projects are evaluated under the Investment Assessment Report/Expanded Project Supervision Report system. Unless such

practices change, the Bank and IFC may continue the pattern of successful projects with limited demonstrable impact on the broader objectives.

An Enhanced Focus on Institutional Reforms

In one respect the Bank's role as a catalyst for institutional reform has been impressive, as many countries have launched major structural reform programs in association with Bank loans. Moreover, as major institutional reform generally takes considerable time to be fully implemented, the long-term effects cannot be expected to be evident in the short term. But the effectiveness of long-term institutional reform will be heavily influenced by the impact of initial reforms in early adopters.

The Bank's policy on sector reform has specified an integrated package of privatization (for additional capital and skill), competition (for market efficiency), and regulation (for fair competition, reasonable prices, and universal service development). The integration of the three elements is important not only because they reinforce one another and provide synergy benefits, but also because the adoption of one element without the others risks achieving little, or even creating greater difficulties. Moreover, some forms of privatization, competition, and regulation are more likely to promote development than others. But the Bank Group's implementation of this policy has not been entirely consistent for a variety of reasons. Most notable is the divergence of views between the Bank and IFC on the priorities of the different policy elements. In practice, there seem to have been no bounds on how the policy principles of OP 4.50 could be interpreted and implemented, in the absence

of guidelines that set best-practice targets and identify bounds on the range of unacceptable institutional reform conditions (for example, terms for exclusive monopoly licenses). Such guidelines would not only have improved the Bank Group's effectiveness, they would have preempted the Bank's critics who have viewed some Bank activities as primarily in the interest of foreign capital rather than domestic development.

Effective institutional reform also requires special attention to building human capital, particularly knowledge and understanding to create constituencies for reform and competence for implementing the new institutional structure beyond the initial transition phase. Most Bank activities for building human capital have been small and brief, directed more toward fixing a current problem by calling on external consultants than on building human capital to make the new institutional structures promote long-term development objectives (El Salvador is an exception; see box 5.1). In part this has been the result of an excessive reliance on multisector loans, which have proved inadequate to pursue long-term sector goals. The Bank's more recent emphasis on stand-alone telecom/information technology technical assistance projects with a focus on long-term institutional strengthening (Chad, Mali, Mauritania) should help address this pitfall.

In many countries the new structures are not yet well grounded; in some, they are precarious; and in some, they appear to be failing. If the reforms initiated by Bank projects are to be effective over the longer term, the Bank will need to mount a significantly expanded program for building the human capital necessary to implement them. This will require assistance over longer periods and

Box 5.1

Building Human Capital—The El Salvador Experience

In El Salvador the Bank has been helping to develop a program for a "learning society" through its 1996 Competitiveness Enhancement technical assistance project. The initiative is driven by broad-based Salvadoran participation and leadership with a modest level of input from the Bank. Six "learning circles" have been created around thematic areas of rural development, small and medium-

size enterprise development, education, migration, government, and municipal and local development. An Internet conference bringing together Salvadoran stakeholders and an international specialist panel from a dozen countries was co-moderated in February 1999 by the coordinator of the Salvadoran learning society initiative and a Bank staff member advising the program.

continuing, direct involvement of Bank staff, not just consultants. The Bank must be seen by the countries as a partner in the reform process, not as an external enforcer, as it is in some countries.

Neglected Institutional Options

World Development Report 1994: Infrastructure for Development identified four major options for effecting change to improve provision and performance and to expand capacity: (a) public ownership and public operation, (b) public ownership and private operation, (c) private ownership and private operation, and (d) community and user provision. Until the early 1990s, telecommunications loans focused almost exclusively on (a). Now they focus almost entirely on moving toward (c) through (mostly multisector) technical assistance loans, and phasing out direct loans to governments for network improvement. Moreover, there is little evidence that serious evaluation of institutional options is undertaken in project design. This is surprising in that even the most developed countries, among them the United States and Canada, achieved universal telephone service using all four options, and they are still part of the countries' national strategies today. In these countries option (d) has been important in extending the telecommunications network to underdeveloped areas and maintaining universal service. In fact, most developed countries are now experimenting with a variety of public-private partnerships for building their national IIs.¹

It is sound policy for the Bank to stop making telecommunications loans to governments where they are not effective. It is also sound policy to use loans to promote sector reform whenever this opens options that were previously closed. This suggests that Bank lending to governments, particularly in the context of public-private partnerships or in combination with some kind of IFC involvement, should be seriously considered on its own merits and, based on experience and country circumstances, not rejected as a matter of principle.

Toward an Integrated Approach to Information Infrastructure Development

Information infrastructure (II) development will require much more integration of activities across

the telecom, information technology, *infoDev*, and IFC programs. While a degree of personal cooperation between some individuals currently exists, there has been insufficient coordination and no evident integration. Bringing information technology into the Telecommunications Division has evidently changed very little, primarily because the division's activities have been (unnecessarily) narrowly defined and not connected.

In a broad sense, the Bank should deepen its technical advice and lending support for the regulatory framework and institutional reforms necessary to ensure private provision of II. IFC should continue to leverage its private sector experience by catalyzing private investments in response to sector adjustments and, as appropriate, to help stimulate institutional reforms. To achieve an integrated II approach, each product group must widen the parameters of its work. The telecommunications sector must take on longer-term issues of application and implementation in the developing countries. Information technology (IT) must take on issues of institutional reform that set the framework for their work. It would make sense to incorporate *infoDev* into this group as fostering essential experimentation, research, and applications that can provide a basis for a more demand-led II development program by the Bank Group (for example, scaling up by IFC projects of successful grassroots pilots, be they in rural networks, value-added services, or private II applications in other sectors such as education and health). The merger of IFC's telecommunications division and the Bank's telecom/information technology unit provides the potential for an expanded and integrated program of investment options.

Selecting Bank Group Instruments

The Bank Group has a wide range of instruments it can use in country development programs and projects. Indeed, the 1993 OED evaluation recommended that the Bank consider a broader range of instruments in pursuit of the new private sector-led agenda. Overwhelmingly, recent Bank lending for telecommunications has been in the form of technical assistance loans (TALs). Increased attention to building human capital, mitigating risks, and providing for partnerships and

flexibility means that the full range of Bank instruments must be employed. This will ensure greater continuity of Bank involvement and more substantive inputs by specialized sector staff throughout the period of sector restructuring.

IFC provides long-term loan and equity financing to viable private sector projects. It plays a catalytic role by investing no more than 25 percent of the project cost, thereby stimulating and mobilizing private investments. IFC also provides technical assistance and advice to private businesses and governments. With support from the Bank, IFC made its first preprivatization investment in the telecommunications sector in FY94. This privatization project helped complete the financing of an expansion project partly funded by a Bank loan. Two other preprivatization investments have been subsequently committed, and both were with the support and cooperation of the Bank. Preprivatization investments by IFC can be appropriate under certain circumstances, for example, in difficult markets and where IFC's presence can add value. While the two preprivatization investments evaluated in this study achieved satisfactory-or-better development outcomes, IFC should continue to use this instrument selectively because of the increased potential for conflict of interest.² Ideally, they should be used where parallel efforts are being undertaken by the Bank at the regulatory level and IFC at the transaction level.

Greater coordination in the use of Bank and IFC advisory activities (including the attendant technical assistance, or advisory assignments) is needed to improve synergies. This should be facilitated by the newly merged Bank/IFC advisory unit. Advisory services to governments on policy and regulatory reform should be carried out in full coordination with relevant Bank and IFC units to avoid potential duplication or conflict with similar Bank activities in the context of an integrated country II strategy. Sri Lanka provides a good illustration of how IFC and the Bank can leverage their respective comparative advantage to help foster reform (see box 5.2).

Research Capacity and Application of Research Knowledge

The Bank has published numerous research and discussion papers examining issues and problems

associated with II development, including both theoretical and applied issues. Yet there is little evidence that the benefit of this research and analysis finds its way into projects. For example, a 1994 paper examining innovative use of competitive processes and accountability standards by the Chilean regulator to promote rural network development, which achieved outstanding success, has apparently had no impact so far on any project design in any country. Linkages between research and practice clearly need to be strengthened.

The Bank is also in a strong position to undertake research on such II development issues as the scope and limits for private market development in different markets and Regions, the significance of externality and public good characteristics of II networks, and alternatives to the international revenue settlements system for developing countries. In addition, research on best-practice II development standards, including applications by governments in areas such as health and education, could strengthen project design and improve the possibilities that future projects will perform at a best-practice or optimal standard, rather than the uninspired standards currently employed.

Recommendations

The Bank Group's two very recent major initiatives in the II sector (the Global Gateway and the IFC-Softbank Internet venture) signal that its benign neglect of the sector at both the strategic and country management level may have ended. Thus, the ongoing preparation of the FY01 Sector Strategy Paper (SSP) on Information Infrastructure, together with the recent management decisions to merge the telecommunications units of the Bank and IFC and to consolidate the management of all Finance, Private Sector, and Infrastructure Network nonlending services, provide a unique opportunity for the Bank Group to overcome the fragmentation of recent years and to squarely reposition II on the Bank Group's core development agenda.

In this context, the forthcoming SSP should incorporate the following recommendations:

- *Policy.* It should restate the Bank Group objectives in the broader II sector in terms of ultimate results (such as access to information,

Box 5.2

IBRD and IFC Leverage Their Comparative Advantages—The Sri Lanka Experience

The Bank Group's involvement in Sri Lanka's telecommunications sector dates back to 1979, when the Bank approved the First Telecommunications Project, which was designed to improve efficiency and develop the physical network of the government telephone monopoly. The project was completed in 1987 and was rated successful. In 1988, the first mobile telephone license was granted to a private operator. In 1991, the Bank approved the Second Telecommunications Project to (a) spinoff a corporatized telecommunications operator from the P&T Department; (b) strengthen the institutional capabilities of the corporatized telecommunications operator (Sri Lanka Telecommunications Ltd., or SLT); (c) promote private sector participation; and (d) improve services and increase connectivity. In the same year, a law was passed that established a separate dominant telephone operator (SLT) and regulator (Sri Lanka Telecommunications Authority) and opened-up the market to further private sector investments. The Second Telecommunications Project exceeded its physical and institutional objectives.

In 1993, IFC invested equity in the second mobile telephone company in the country. The investment was in response to a foreign telecommunications operator's request for IFC's participation. IFC saw this as an opportunity to provide comfort to a foreign sponsor undertaking an important project that would provide competition to the private monopoly, lower costs, improve

services, and widen access. IFC's role has been completed, and in 1997 IFC, along with the original foreign sponsor, sold its investment in this company to a strategic partner. Today, Sri Lanka has four mobile telephone operators and has one of the most competitive tariffs in the Region.

The Bank approved its third telecommunications project, Telecommunications Regulation and Public Enterprise Reform Technical Assistance, in 1996. Among the project's objectives were furthering institutional reforms, strengthening the regulatory framework, and promoting private investments, operation, and competition. The 1991 Telecommunications Act was also amended to create a more independent regulator, the Telecommunications Regulatory Commission (TRC).

In 1997, SLT was partially privatized when Japan's Nippon Telegraph and Telephone Corporation acquired 35 percent of the company and assumed management of its operations. SLT has exclusivity in international long distance voice services until 2002. In the domestic market, competition comes from two private fixed-line operators (Lanka Bell and Suntel) using wireless local loop (WLL) technology that was licensed by TRC in 1996.

Today, Sri Lanka has one of the most liberalized telecommunications markets in the Region. The Bank Group continues to play a role through its policy advice on emerging regulatory issues and IFC's possible assistance in financing the build-out commitments of the private fixed-line operators.

pricing and quality of services, fiscal impact) rather than just means and/or intermediate outcomes (private sector investment, competition, or regulation), as OP 4.50 currently does. In particular, it should *address outstanding policy gaps and differences in regulatory reform strategy* regarding the Bank Group's approach to sequencing sector liberalization and privatization as well as to universal service/rural access and its linkages with the Bank's poverty-reduction agenda (including through interventions in other sectors such as education and health).

- *Institutional options.* While ensuring consistency with the September 1999 Bank Group private sector development (PSD) strategy and drawing on lessons learned from recent experience in reforming countries, the forth-

coming SSP should provide detailed guidance to Bank Group staff on a range of II policy and strategic options best suited to various categories of borrowers, rather than a rigid one-size-fits-all reform model—possibly using the country segmentation framework proposed in a recent *infoDev*-financed background study. Similarly, the SSP should promote the use of a broader range of Bank Group instruments, away from the excessive reliance of recent years on multisector TA loans.

- *Regional/country strategies.* The SSP should include detailed regional Bank Group II strategies, building on the recent and very successful exercise carried out for the Eastern Europe and Central Asia Region telecommunications strategy. To this end, the management of the newly merged Bank/IFC unit

should give top priority to carrying out a rapid *country-level II policy and strategy stock-taking exercise* covering every country where the Bank or the IFC is involved. This exercise should not aim at preparing polished country reports, but rather at providing the basic intellectual foundation for the formulation of the Bank Group's operational strategy. Consideration should be given to using *infoDev* resources more systematically to support such country-level II policy and strategic work.³

- *Partnerships.* The SSP should propose ways to streamline the vast array of current external partnerships in the II area, based on a systematic evaluation of their relevance, impact, and efficiency. The excessive fragmentation of their management within the Bank Group should be specifically addressed, possibly by formally assigning overall strategic and coordination responsibility to the manager of the newly merged Bank/IFC unit.
- *Staffing.* The SSP should include a plan to continually update staff skills to cope with the demands of this dynamic sector and enable the Bank to maintain policy leadership, building on the shift that has already taken place in recent years, both in the Bank and IFC, in response to the new private-sector-led agenda. Given the rapid technological changes and the increasing

scope of the information infrastructure sector, this may include expanding beyond the telecommunications sector the successful staff exchange program already in place and/or setting up a well-structured knowledge-sharing program with leading private sector companies.

- *Monitoring and evaluation.* The SSP should draw on this report to summarize lessons from recent Bank Group experience. And it should include a detailed framework for the future monitoring and evaluation (M&E) of the revised Bank Group policy and strategy. To this end, current M&E processes should be enhanced at three levels: (a) at the project/activity level, by setting M&E systems for those interventions that currently "fall through the cracks" (telecom/information technology/information infrastructure components of multisector Bank projects and the Bank Group's advisory and analytical services); (b) for IFC projects, by specifying, at appraisal, the project's expected contributions to specific sector and development impact objectives and by tracking their progress and prospects for achievement in supervision and evaluation reports; and (c) at the global level, by incorporating in the SSP specific, relevant indicators of Bank Group effectiveness, including sector outcomes and development impacts.

ANNEXES

ANNEX A: IFC EVALUATION FRAMEWORK AND CRITERIA

The evaluation framework IFC used in this study is a modified version of its standard Investment Assessment Report/Expanded Project Supervision Report (IAR/XPSR) framework. The evaluation population of 21 operations was reviewed to determine development outcome, with each operation rated as either “satisfactory” or “less than satisfactory” on each of five performance dimensions: project business success, company business success, growth of productive private enterprise, growth of the economy, and living standards (see attachment A.1). These were recorded on an evaluation form (see attachment A.2). A development outcome rating was then assigned to each project based on a synthesis (not average) of the five performance dimensions.

Unlike the IAR/XPSR framework, the report did not evaluate environmental impacts because telecommunications is a relatively clean operation and because the Operations Evaluation Group (OEG) does not have the requisite skills or re-

sources in the context of this desk review. Environmental issues specific to telecommunications include: right-of-way acquisitions, tower site selection, used battery return, and microwave transmissions. Except for the private equity fund (which was rated as a financial intermediary project), all telecommunications projects in the evaluation population were classified as Category B (no major issues) under the IFC Environmental Review Procedures. The study was unable to determine the environmental compliance status of all projects based on information from Annual Supervision Reports/Project Supervision Reports (ASRs/PSRs). Only 10 projects (less than half) have information on environmental compliance in the latest ASR/PSR. All 10 projects reported compliance with IFC/World Bank guidelines. The four telecommunications investment operations from the evaluation population that were evaluated under the IAR/XPSR self-evaluation framework were rated satisfactory on environmental impacts.

Attachment A.1 Definition of Framework Terminology

Development Outcome Rating. The development outcome rating is a bottom-line synthetic assessment of the operation's results, based on (but not an average of) the following five development indicators:

- 1. Project business success.** This rating considers the narrow objectives supported by IFC's financing. The best measure of a project's business success is its financial rate of return (FRR). Lacking the data to calculate an FRR, we based this rating on assessments of the inputs to an FRR—capital expenditures, cost overruns, capacity utilization, sales volumes, pricing, revenues, margins, profits, taxes, subsidies, etc. (In financial market projects this includes assessing the intermediary project funded, taking into account project execution, use of agreed approval criteria, subproject sustainability, and industry comparisons.)
 - *Rates satisfactory-or-better when the inputs to an FRR convey a satisfactory FRR*
- 2. Company business success.** This rating addresses the performance of the company as a business enterprise. If the project is a small part of the company's total operations or serves a new market, the company's business performance and prospects may differ materially from the project's. A company's success is evaluated on its financial condition, operations other than the project, market responsiveness, creditworthiness, profitability, company development, management and sponsor group compatibility.
 - *Rates satisfactory-or-better when the company meets at approval company expectations.*
- 3. Growth of productive private enterprise.** This rating considers, as relevant, the upstream and downstream linkages to private firms, new technology, management skills and training, degree of local entrepreneurship and competition, demonstration effects, enhanced

private ownership, capital markets development, and business practices as a positive corporate role model. Included also are regulatory improvements such as changes in government policy and legal, tax and accounting frameworks.

- *Rates satisfactory-or-better when the project provides distinctly positive net contributions*
- 4. Growth of the economy.** This rating considers the project's net economic benefits to all members of society, which is best measured by an economic rate of return (ERR). Lacking the data to calculate an ERR, we based this rating on assessments of the inputs to an ERR—the social benefits and costs including consumer surplus, taxes paid, effects on competitors, benefits to suppliers, effects on input and output markets, and how competitive prices and quantities are determined in relevant markets.
 - *Rates satisfactory-or-better when the net economic benefits are positive and near to expectations*
 - 5. Living standards.** This rating is based on a project's benefits and costs to those who are neither owners nor financiers: customers, employees, suppliers, competitors, local residents, government, and the like. It includes contributions to widely held social objectives such as employment generated, employee living standards, nonwage benefits, training, community services, health and safety, expropriation procedures and resettlement, gender equity, and child labor.
 - *Rates satisfactory-or-better when there are positive net benefits to those who neither own nor finance the project*

Investment Outcome. The investment outcome rating is a synthesis of up to two indicators (one for loan, one for equity) that address the investment's gross contribution performance. Each is evaluated and rated according to standard benchmarks that reflect corporate investment policy.

Attachment A.2 Telecommunications Project Evaluation

1. Country and Project Name		
2. IFC Investment: Gross Commitment Net Commitment	Board Approval Date:	
3. Project description:		
4. Outcome relative to expectations:		
5. Principal business obstacles and outcome drivers:		
	Less than Satisfactory	Satisfactory or Better
6. Development Outcome Rating		
(i) Project business success		
(ii) Company business success		
(iii) Growth of productive private enterprise		
(iv) Growth of the economy		
(v) Living standards		
7. IFC Investment Performance		
8. IFC Role and Contribution		
9. Key Lessons Learned		

ANNEX B: LESSONS LEARNED FROM IFC'S TELECOMMUNICATIONS OPERATIONS

The study has identified the following 13 key lessons based on the 21 evaluated operations and on interviews with investment staff. The lessons were drawn mostly from IFC's experience in telephone (basic and mobile) projects and may not necessarily provide adequate guidance to the broader information infrastructure sector.

Regulatory Issues

1. **Independent regulator.** *A capable, privatization-committed, and independent state telecommunications regulator is important for successful private sector participation.* In situations where the state still operates the primary telecommunications company, the state regulatory function must be distinct and separate from the state telecommunications operator to avoid conflict of interest. This is a position shared by many Bank and IFC telecommunications staff.
2. **Privatization prior to liberalization.** *It is difficult to have fair competition in an environment where the state-owned operator has not been fully privatized prior to the opening of the sector.* The fact that the state telecommunications company is not in the same sub-sector or market segment open to private investments is not sufficient to completely address the risk of unfair competition. A successful private sector project could attract the state telecommunications company to establish a subsidized operation to compete unfairly against the private sector.
3. **Limited period of exclusivity.** *A limited period of exclusivity or duopoly is important in attracting strong and committed private capital and in ensuring project viability in newly opened markets, especially in fixed telephony.* Fixed-telephony projects usually involve the acquisition, modernization, and

expansion of recently privatized networks. These networks usually come with an inefficient management, a bloated workforce, outdated technology, and non-cost-based tariffs. Faced with the challenge of transforming an inefficient operation to a profitable company while committing to a capital-intensive build-out investment program, project sponsors view limited exclusivity as one way of mitigating these risks.

4. **Licenses and licensing.** *Terms of concession licenses should be on a commercial basis, balanced, reasonable, and realistic. The licensing process should be transparent.* Unfair licenses or licenses granted in a nontransparent manner are likely to be reopened for further negotiations, especially when a new administration takes over the regulatory body.
5. **Duration of concession.** *Concessions with a short life discourage large capital expenditures and restrict investment returns.* They also provide no incentive for future upgrading and modernization capital expenditures.

Commercial Issues

1. **Interconnection.** *Interconnection agreements should be balanced and based on commercial terms.* Revenue sharing with the state telecommunications operator, if not fairly structured, could be difficult to implement. It is often more prudent to enter into an interconnection agreement directly with other private sector players.
2. **Subscriber base and accounts receivable.** *The quality of accounts receivable declines as subscriber base increases.* More marginal clients are acquired as telephone affordability increases. Tariffs are often lowered to attract a wider market.

3. **High profitability.** *High profitability does not last.* Competition finds a way to grab market share. Projects experiencing strong performance should be prepared for a strong and aggressive competitive response.
4. **Economies of scale.** *Small regional telephony projects may not be viable on a stand-alone basis due to lack of economies of scale.* Rural telephony projects have failed because of the lack of strong market or revenue potential.
5. **Flexibility in financial structure.** *Project financing should be structured to allow for quick response to adversities and opportunities.* The telecommunications sector is a relatively fast-moving sector, and quick strategic moves are key to continual success.
6. **Cost structure.** Low-cost structure, quality of service, and advanced technology are more important than high tariffs in ensuring long-term viability. *Tariffs decline as competition intensifies. Companies with high*

costs and outdated technology will find it difficult to remain viable.

Strategic Issues

1. **Preprivatization investment.** *IFC could play a role in state-owned telecommunications companies by supporting preprivatization projects.* Appropriately structured and financed preprivatization rehabilitation projects can contribute to higher valuation of the state-owned telecommunications company, increased interest among major international players, and successful privatization.
2. **Less-than-ideal regulatory environment.** *IFC's participation and proper structuring could enhance the viability and bankability of projects in a less-than-ideal regulatory environment.* Many of the evaluated IFC telecommunications operations succeeded even in less mature regulatory conditions largely through prudent risk mitigation and financial structuring.

ANNEX C: MANAGEMENT ACTION RECORD (MAR)

OED – OEG Recommendations

Management Response

1. Policy. The forthcoming strategy and sector paper (SSP) should restate the Bank Group objectives in the broader II sector in terms of ultimate results (for example access to information, pricing and quality of services, fiscal impact) rather than just means or intermediate outcomes (private sector investment, competition, or regulation) as OP 4.50 currently does. In particular, it should address outstanding policy gaps and differences in regulatory reform strategy, regarding the Bank Group's approach to sequencing sector liberalization and privatization as well as to universal service, rural access and its linkages with the Bank's poverty-reduction agenda (including via interventions in other sectors such as education, health, and the like).

Management is in general agreement with the recommendation about topic to cover in the forthcoming SSP. Specifically, we will broaden the analysis of the Information Infrastructure sector with a view to identify outstanding gaps in the post-liberalization era, as well as in new areas such as e-commerce. The SSP will also review the appropriate content of OP 4.50.

2. Institutional options. While ensuring consistency with the September 1999 Bank Group private sector development (PSD) strategy and drawing on lessons learned from recent experience in reforming countries, the forthcoming SSP should provide detailed guidance to Bank Group staff on a range of II policy and strategic options best suited to various categories of borrowers, rather than a rigid one-size-fits-all reform mode, possibly using the country segmentation framework proposed in a recent *infoDev*-financed background study. Similarly, the SSP should promote the use of a broader range of Bank Group instruments, away from the excessive reliance of recent years on multisector technical assistance loans.

We agree with the need to provide a framework in the SSP within which staff will be able to position various policy and strategic options for individual countries. We also believe that the recent integration of Bank and IFC activities in the IIT sector will promote the use of World Bank Group (WBG) instruments in a seamless way, and to the best interests of our client countries. Where flexibility is required at the country level, staff will be given clear guiding principles for preparing all WBG operations in the sector. Those principles (guidelines) will include, in particular, competition, private participation, and a legal and regulatory framework providing clarity and predictability to private investors.

3. Regional/country strategies. The SSP should include detailed regional Bank Group information infrastructure (II) strategies, building on the recent and very successful exercise carried out for the Europe and Central Asia Region telecommunications strategy. To this end, the management of the newly merged Bank/IFC unit should give top priority to carrying out a rapid country-level II policy and strategy stock-taking exercise covering every country where the Bank or IFC is involved. This exercise should not aim at the preparation of polished country reports, but rather at providing the basic intellectual foundation for the formulation of the Bank Group's operational strategy. Consideration should be given to using *infoDev* resources more systematically to support such country-level II policy and strategic work.

Management agrees on the need to include Regional Bank Group strategies in the SSP to translate the strategic agenda into country programs and investments. This will also help engage the Region in the process of owning the SSP. As you suggest, we will build on the successful ECA telecommunications strategy already prepared. However, time and budget constraints will not allow us to do a similar comprehensive exercise for other Bank Regions. Therefore, Management proposes to keep the country strategies simple and modifiable to keep the cost at a minimum and give the WBG flexibility to react promptly to changing country situations (windows of opportunity that need to be exploited).

4. Partnerships. The SSP should propose ways to streamline the vast array of current external partnerships in the II area, based on a systematic evaluation of

As part of the SSP process, we will clarify the division of labor among the different parts of the WBG concerning IIT-related

OED-OEG Recommendations

their relevance, impact, and efficiency. The excessive fragmentation of their management within the Bank Group should be specifically addressed, possibly by formally assigning overall strategic and coordination responsibility to the manager of the newly merged Bank/IFC unit.

5. Staffing. The SSP should include a plan to continually update staff skills to cope with the demands of this dynamic sector and enable the Bank to maintain policy leadership, building on the shift that has already taken place in recent years, both in the Bank and IFC, in response to the new private-sector-led agenda. Given the rapid technological changes and the increasing scope of the information infrastructure sector, this may include expanding beyond the telecommunications sector the successful staff exchange program already in place and/or setting up a well-structured knowledge sharing program with leading private sector companies.

6. Monitoring and evaluation. The SSP should draw on this report to summarize lessons from recent Bank Group experience. And it should include a detailed framework for the future monitoring and evaluation (M&E) of the revised Bank Group policy and strategy. To this end, current M&E processes should be enhanced at three levels: (a) at the project/activity level, by setting up M&E systems for those interventions that currently "fall through the cracks" (telecommunications/information technology, information infrastructure components of multisector Bank projects, and the Bank Group's advisory and analytical services); (b) for IFC projects, by specifying at appraisal the project's expected contributions to specific sector and development impact objectives and tracking their progress/prospects for achievement in supervision and evaluation reports; and (c) at the global level, by incorporating in the SSP specific relevant indicators of Bank Group effectiveness, including sector outcomes and development impacts.

Management Response

work. The goal will be to increase the impact of these partnerships to maintain corporate oversight and keep bureaucracy to a minimum.

The SSP will include a plan to update staff skills (subject to budget constraints) in the fast-changing sector and to maintain the Bank policy leadership, building on the shift made a few years ago. Equally important, the SSP will elaborate the content of the staff plan and direct the risk of staff erosion if our staff at the current internal policy structure and budget provisions are maintained.

We are making use of the Staff Exchange Program and so far have exchanged staff with companies such as Motorola, Telecom Italia, Siemens, France Telecom, and Deutsche Post.

Management concurs with the importance of measuring the developmental impact of WBG operations in the sector. Please note that all Bank (and some telecommunication) projects approved during the period FY92-FY00 include measurable indicators (initially, in annex 1 of the PAD). We welcome the suggested development outcome framework of annex A (Attachment A.1), which will help us in linking a project outcome to the broader PSD growth and living standard indicator. We would like to note, however, that this is only a partial proposal since we accept for a few specific indicators (like profit) or FDI that is difficult to establish, with certain confidence, between project outcome and developmental impact. For IFC transactions, the monitoring of broad developmental objectives may prove to be unrealistic or very difficult. Finally, we agree that the M&E system for telecommunication infrastructure component of multisector projects is less than satisfactory, as explained in other sections of the report. The current multisectoral approach that a budget share is tracking a sector in a single project could be, as well as a single implication (annual budget) allocated to the preparation and operation of telecommunication component of these projects.

 ANNEX D: REPORT FROM THE COMMITTEE ON DEVELOPMENT
 EFFECTIVENESS (CODE)

Bank Group Experience in Information Infrastructure: A Joint OED–OEG Review and Draft Management Response

The Committee on Development Effectiveness met on May 24, 2000, to discuss the report *The Bank's Group's Experience in Information Infrastructure: A Joint OED/OEG Review (CODE2000-36) and the draft Management Response (CODE2000-47)*. The review assesses the impact of the World Bank Group's assistance in the development of information infrastructure—including telecommunications networks, computing hardware and software, together with related policy, legal, and institutional frameworks—in developing countries. It is the first joint OED/OEG evaluation of both the Bank and IFC assistance in a given sector. Committee members were asked to focus on the OED/OEG recommendations for consideration in developing a Bank Group Sector Strategy for Information Infrastructure.

The review noted that dramatic changes have occurred in the telecommunications sector since the last OED review in 1993 of the Bank Group's experience in this sector. These changes include the Internet revolution; the adoption of far-reaching liberalization policies in this sector by many governments; dramatic shifts in the Bank Group's portfolio from lending to public utilities to support of tax reform and distance learning; and the adoption of O.P. 4.50 Telecommunications Sector in 1995, making lending to state enterprises contingent on sector reform.

The review noted favorably that Management had overall heeded the recommendations from the 1993 OED review: The OP 4.50 has focused on a “new” agenda of privatization, regulation, and competition; Management has consolidated the Bank and IFC telecommunications units and

FPSI nonlending services; and both the Bank and IFC telecommunications portfolios had continued to perform above average. However, the review also found that impact had been limited to a few countries and that there is a lack of a coherent strategy at the country level. The review called for a stronger regional and country implementation focus; expanding OP 4.50 to include the full range of Bank Group information infrastructure activities; widening the range of instruments; improving the monitoring and evaluation system, especially for Information and Communication Technology (ICT) components of non-ICT projects; and addressing the renewal of staff skills.

The Committee was pleased to note the concurrence of Management and staff on the recommendations made by OED and OEG and noted that the review was timely given the ongoing preparation of an approach paper for a sector strategy for information infrastructure to be presented to the Board in FY01. The Committee agreed that bridging the digital divide was a development priority; many Committee members supported IFC taking a more proactive role in the sector. The Committee felt that the Bank, as a matter of urgency, should develop a clear strategy to guide country policy dialogue.

Extent of the Digital Divide

Committee members held different views on the extent of the divide and how it could be bridged. Some speakers felt the assumption that developing countries would automatically reap high productivity gains from investing in information infrastructure was ambitious, and called for a more pragmatic approach. Others noted the reduction in real costs worldwide and increasing rates of connectivity in some developing countries.

Management informed the Committee that upper- and middle-income countries were accelerating their investments in the telecommunications sector as a share of GDP, however, the relative share for lower-income countries overall remained stagnant. Management noted that the development of the Internet in emerging markets is key to bridging the widening digital divide that threatens to leave some developing countries far behind the developed world.

Quality of the Portfolio

Committee members held different views on the causes for the disconnect between well-performing Bank projects and poor sector performance at the country level. Some members asked if the limited impact at the country level of well-performing projects was the result of implementation of a badly designed strategy or due to the lack of commitment of the necessary resources. OED noted that the stellar performance for self-standing telecommunications projects could be misleading, since they present a small part of the total assistance in the sector. Management informed the Committee that it is in the process of developing rapid country-level strategic exercises to provide more country-specific and customized policy guidance and that it was already experiencing structural and process efficiencies as a result of restructuring and that these changes had received a positive reaction from clients.

The Role of the Public Sector

Committee members held different views on the extent and the role of the public sector in the provision of services and achieving universal coverage. It was noted that the private sector is prepared and willing to engage strongly, but awaits clear leadership from the Bank on strategic directions. Several members called for a flexible and customized approach that considered a range of public-private sector models beyond the current trend toward private sector ownership and operation. OED noted that the study findings highlight that there is an appropriate role for Bank Group assistance in this area in addressing rural connectivity and providing physical, policy, and institutional infrastructure to countries undergoing reform. Management added that regu-

latory, privatization, and reform models are being challenged and initiatives such as *infoDev* will be critical to consolidating new approaches.

OED–OEG Recommendations for an SSP

Committee members had diverse views on the appropriateness and scope of the OED/OEG recommendations for inclusion in developing the SSP. Some speakers felt there was a “disconnect” between the analysis and the findings and the recommendations. Some felt that the report walked a thin line between evaluation and advocacy and felt the latter emphasis could jeopardize the independence of future assessments. Others disagreed, endorsing the relevance of the OED/OEG report and would have welcomed even stronger recommendations. Management noted that the “disconnect” was in part attributable to recommendations being forward looking and encompassing the broader information infrastructure sector, whereas the review assessed past experience. Management informed the Committee that it is addressing some of the weaknesses identified in the report, such as the fragmentation of the advisory services, and that many of the substantive issues would be addressed by the sector strategy.

Information Infrastructure and Poverty

The Committee noted the importance of clarifying the policy links between the SSP and the Bank’s overall poverty reduction strategy. It also noted that it was important to sensitize client countries to the concrete benefits of investments in information infrastructure and the realization of country poverty reduction and development goals. OED informed the Committee that there is a substantial body of literature linking infrastructure to productivity and economic growth, and that this link was particularly strong for telecommunications relative to other infrastructure sectors. Management noted, however, that much more consensus building was needed within the Bank Group around the importance of information infrastructure in meeting country and sector poverty reduction goals.

Resources

The Committee emphasized the need for the Bank to commit the required resources to

support the strategy and wanted to know if the Bank had the skills mix and comparative advantage to do so. Management informed the committee that it had an internal training program and that staff also participated in exchange programs. Management, however, emphasized to the Committee that in its view the resources for this sector were decreasing, contrary to the strategic directions of the Bank.

Next Steps

The Committee confirmed that the sector merits further discussion and looks forward to its subsequent discussion of the review when it discusses the approach paper for the information infrastructure sector strategy.

Jan Piercy, Chairperson

ENDNOTES

Chapter 1

1. "The Bank's Experience in the Telecommunications Sector—An OED Review" (November 1993).

2. IAD's 1996 and 1998 reviews of informatics in Bank projects and the external evaluation of *infoDev* by E. Wilson and others (November 1998).

3. Including one telecom-focused private equity fund investment as well as investments in II-related activities such as paging, satellite-based VSAT, cable network, and electronic data interchange (EDI) service.

4. The year when IFC established a separate Telecommunications Investment Division.

5. For purposes of the study, OEG rated 17 of the 21 mature investments using a modified IAR/XPSR rating framework (see Annex A). The remaining four have been rated through the routine self-evaluation process and reviewed by OEG.

6. As of mid-1999, no Quality Assurance Group (QAG) review had been carried out in the telecommunications sector.

Chapter 2

1. "Will the Internet Close the Gap?" (Pyramid Research, December 1999, photocopy).

2. Based on the (generous) assumption that, on average, a fifth of multisector technical assistance loans is assigned to telecommunications activities—this assumption had to be used in the absence of a detailed inventory of the Bank funds assigned to the telecommunications components of these loans.

3. Included in Environmentally and Socially Sustainable Development Network's project database.

4. Indeed, both partnerships have been partially funded/sponsored by *infoDev*.

5. Investment criteria for IFC's projects are covered by the "Operating Policies and Practices: Guidelines for IFC Staff."

6. Since FY99, IFC's sector priorities and the projects' deemed development impact objectives have been reflected in the choice of project opportunities being pursued.

7. Net of cancellations. Commitments refer to investments approved by IFC's Board of Directors, for which investment agreements have been signed by the client and IFC.

8. Project cost divided by net IFC investment commitments.

9. Fixed lines per 100 inhabitants.

10. Based on Institutional Investors' country risk rating of 0–100, where 100 is low risk. OEG uses the following ranges in determining risk categories: high: 0–19; high-medium: 20–39; low-medium: 40–59; and low: 60–100.

11. FIAS is a joint IFC-World Bank facility that advises governments on improving enabling environments for direct foreign investments.

Chapter 3

1. Using EMITT's costs charged to these projects, which, in this sector, can be considered a reasonable proxy.

2. Each operation was rated as either "satisfactory or better" or "less than satisfactory" on five performance dimensions: project business success, company business success, growth of productive private enterprise, growth of the economy, and living standards. The development outcome rating is a bottom-line synthetic assessment of the operation's results based on (but not an average of) these five performance dimensions.

3. The company had liquidity problems due to significant short-term borrowings incurred to finance subsequent expansions.

4. The distinction between fixed and wireless telephony is becoming increasingly less clear as these two technologies converge. In cases where fixed lines were inadequate, mobile phones have increasingly substituted for fixed telephony. Some newer projects not covered by this evaluation use wireless technology (e.g., wireless local loop or WLL) to provide fixed telephony.

5. Some of the performance drivers and obstacles, such as weak sponsors and macroeconomic issues, have been featured in the IFC publication, "Lessons of Experience: Financing Private Infrastructure" (1996).

6. "Trends in Telecommunications Reform: Convergence and Regulation" (October 1999).

7. The World Bank Private Sector Development Strategy, September 10, 1999, includes management's view of ineffective coordination of advisory services.

Chapter 5

1. The U.S. industry estimates that the current level of effective annual subsidy to high-cost areas and poor people is more than \$10 billion. And the United States, Sweden, and other developed countries have

announced major government-funded programs to assist in extending II access to schools, hospitals, community centers, and rural areas.

2. The potential for conflict of interest arising from the integration under single units of investment and advisory work in selected sectors (including telecommunications) has been recognized by Bank Group management and is currently being addressed. See

“World Bank Group Private Sector Development Strategy: Questions and Answers,” November 29, 1999 (IFC/SecM99-74).

3. Within the constraints of *infoDev*'s current statutes: in contrast with ESMAP, a similar partnership established in the 1980s for the energy sector, *infoDev* can only support activities that are proposed by outside organizations.

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