6. Conclusions and Recommendations

6.1 Over the past decade, access to ICT in developing countries has grown rapidly, a development enabled by changes in technologies, policies, and markets. Increased access has unleashed the transformative potential of ICT, affecting the ways in which people, governments, and businesses interact. The changes in those interactions, and ICT itself, promise to enhance economic opportunities for the poor, improve delivery of services to the underserved, enhance government efficiency and transparency, and accelerate social change.

6.2 Technological innovations and policy reforms over the past decade have opened opportunities for the private sector, which has been critical to the expansion of access. Technologies, markets, and policies have developed rapidly, and access to mobile telephony has grown, driven by private investment in networks, new business models to target mass markets, and economies of scale. With the growth in private investment, the role of the public sector, and of the World Bank in particular, has been largely supportive. Governments, with Bank assistance, have opened markets to competition through regulatory reform.

6.3 Together, the private sector investments and public sector reforms have helped to narrow the gap in access to mobile telephony between developing and developed countries (reaching a penetration of 68 percent for developing countries in 2010). Use of the Internet, although also growing rapidly, is lagging behind the explosive growth of mobile telephony.

6.4 The increase in ICT access and use has been accompanied by some important issues and constraints. Developing countries have had to adapt policies and regulations to the rapid changes in technology and market structure. In the early 2000s, the challenges to adaptation included lack of independent regulation, uncompetitive telecommunication markets, and privatization of operators. Reforms
focused on spectrum allocation, licensing of new operators to introduce competition, ensuring workable interconnection arrangements, and ensuring ICT access for the poor and underserved, among others, were needed. Furthermore, to be able to reap the benefits of ICT growth and its transformative potential, governments needed to support the development of ICT skills by their people and adopt ICT themselves for better delivery of education, health, and other services and to enhance government efficiency and transparency. While progress has been made on many of these challenges, some important challenges have yet to be mastered. These include ICT access in the poorest countries, the lag in access to and use of the Internet and broadband (important for business), ICT skills, and the adoption of ICT applications in other sectors.

6.5 With its 2002 ICT Strategy, the World Bank Group committed to intervene in four areas: broadening and deepening sector and institutional reform; increasing access to information infrastructure by mobilizing and leveraging private sector investments and finance and to extend access beyond what commercial providers are prepared to provide on their own; supporting ICT human capacity; and supporting ICT applications to enhance public administration and private sector development, as well as ICT components in Bank lending. The strategy specified roles for the public sector and development agencies (such as the World Bank Group) for two reasons. First, ICT development would be contingent on reform and a strong regulatory environment. Second, market failures and equity considerations would require support of private investment and market-based subsidies to foster ICT access beyond what the market alone would provide. The strategy specified a division of labor between the World Bank and IFC/MIGA.

6.6 The Bank Group has a catalytic role in ICT. Its most notable contributions have been in sector reform and fostering private investments in mobile telephony. In terms of volume, World Bank lending amounted to $875 million, excluding DPOs. Bank lending over the period increased for regulatory and sector reform and for supporting access to the poor and underserved, while support for privatization and physical infrastructure investment declined. During the period, the Bank undertook 410 nonlending technical assistance activities in support of ICT sector reform and capacity building. IFC ($2.3 billion in telecommunications) and MIGA ($600 million) focused on supporting private investment for the rollout and expansion of infrastructure for mobile telephony and the operation of mobile
service providers. Both IFC and MIGA have increased their involvement over the period, with increasing concentration in IDA and frontier countries, where both agencies had a greater role to play. In addition, IFC supported IT and media companies ($407 million).

6.7 A large number of World Bank operations in sectors other than ICT include ICT applications. A review of investment projects approved since FY03 found that in about 1,300 projects (74 percent of all investment loans) ICT was used as a component, subcomponent, or within components. The majority of public sector governance, education, agriculture, financial, health, social protection, urban, transport, water, and energy and mining projects included ICT in some way. IFC has recently supported ICT application projects in mobile banking, e-commerce, and education ($119 million in commitments).

6.8 Countries with Bank Group support for policy reform and private investments have increased competition and access faster than countries without such support. With respect to policy reform, 60 percent of lending operations achieved their objectives. The relatively large proportion of operations falling short of expectations reflects the focus on more challenging and difficult environments. Nonlending technical assistance activities reported strong performance.

6.9 IFC projects supporting private investments in mobile telephony showed strong development results. Its investments were highly concentrated in IDA and frontier markets, especially Africa, where it played a significant role.

6.10 Targeted efforts to increase access beyond what commercial operators were willing to do on their own have been largely unsuccessful. Access to the underserved and poor was more effectively achieved by projects focusing on the enabling environment and direct support to investments. But positive examples of Bank Group support (in Chile and Pakistan) indicate the potential of targeted approaches, including through public-private partnerships.

6.11 The performance of the Bank Group in ICT applications was modest—50 to 60 percent of projects achieved their ICT-related objectives. This performance may reflect weaknesses in key prerequisites, such as effective institutions and planning for change management processes and the greater difficulty of implementation of IT projects, which have high failure rates in both developed and developing countries. IFC’s support to IT companies was not
successful on a project level, reflecting the high risk of this sector and limitations of IFC’s business model. However, considering these projects on a portfolio basis, in line with IFC’s venture capital approach, IFC’s returns have been positive and consistent with industry benchmarks. Finally, the area of ICT skills development has received little attention in Bank Group operations.

6.12 The Bank Group’s effectiveness has been influenced by both internal and external factors. Among external factors associated with positive outcomes were pent-up demand and willingness to pay for communications services, regulatory reform and enhanced competition in telecommunications, strong government commitment, capacity to implement reforms or IT solutions, and experienced private sponsors with strong business plans and market strategies. Internal factors that affected performance included the lack of robust results frameworks with respect to measuring specific ICT objectives, weak follow-up on ICT components in projects, delays in implementation, lack of procurement specialists with IT expertise, assessment of regulatory risk during project appraisal, (lack of) ICT sector expertise, work with repeat versus nonrepeat clients, limitations in the business model addressing needs of small innovative companies, and focus on the need for change management and local conditions and capabilities.

6.13 The existence of a joint GICT Department facilitated coordination across public and private sector units. But the department lacked a clear mandate to lead ICT operations across the Bank Group, and World Bank staff perceived a lack of sufficient support from the ICT unit. The recent reorganization may diminish the benefits of a global, integrated ICT Department and underscores the need for incentives for collaboration, coordination, and joint approaches for innovation among Bank Group units.

Recommendations

6.14 This evaluation finds that ICT can be a tool to advance development objectives under the right circumstances and when policy makers consider enabling factors, local context, constraints, and capabilities. The findings are in line with the body of evidence linking investment in ICT to productivity and growth and the potential of ICT to transform the way governments function or the manner in which services are delivered to the public. The near ubiquity of mobile phones offers the potential for this medium to evolve from a communication
tool to a delivery platform for services. ICT is not a panacea for development challenges, but it may be part of a package, together with investment in basic infrastructure, reform processes, and skills development in bringing about change.

6.15 Going forward, the World Bank Group ought to retain a role in ICT, but with important shifts in priorities. Progress in reforms suggests a role for the Bank in this area related to (i) updating the regulatory frameworks to support broadband and Internet access and (ii) preserving competition in the face of consolidation and convergence in the sector. Gaps in broadband and Internet access, but in the context of overall expansion of coverage, argue for a selective role in supporting private investments in difficult environments. Expanding access beyond what market players would provide on a commercial basis (by using public-private partnership approaches, for instance) needs to remain an important priority for the Bank Group. Building on the significant progress in basic connectivity and the opportunities this offers for development, ICT applications should become the main focus of World Bank Group support, including through ICT skills development. Finally, the creation of a global mobile network presents enormous challenges and opportunities for the way the Bank Group delivers its services.

**Reform and Access**

**Recommendation 1.** Continue the current shift in World Bank Group support toward broadband and Internet access while incorporating lessons from experience. In regulatory reform, the World Bank ought to (i) maintain the focus on competition combined with promoting stability and predictability of the regulatory environment; and (ii) update its advice and technical assistance related to enabling policy makers and regulators to deal with next-generation policy and regulatory issues, new business models, and convergence of technologies. In access, the World Bank, IFC and MIGA ought to (iii) support catalytic public-private partnership investments to accelerate the rollout of regional and national backbone infrastructure; and (iv) identify and support effective approaches to promote access to the underserved, building on their experience with targeted interventions in other areas.

**Applications**

**Recommendation 2.** Strengthen the capacity of the Bank Group to respond to client demands for ICT applications by (i) building greater
ICT expertise and awareness across the networks and the Regions regarding the potential applications of ICT, including more consistently capturing ICT aspects in country and sector strategies; (ii) building incentives mechanisms for collaboration, coordination, and joint approaches for innovation between Bank Group units, reflecting the thematic nature of ICT; and (iii) transforming the ICT unit to enable it to act as a connector between internal/client demands and outside expertise from the public and private sectors.

**Recommendation 3.** Design and implement World Bank Group ICT application projects, consistently taking into account (i) local context and capabilities, country readiness, complementary investments in infrastructure and training, and project-specific change management challenges, (ii) the need to support cross-sectoral enablers, including the development of policies and standards that would apply across agencies, and apex institutions to effectively lead the ICT agenda across sectors, (iii) the benefits of shared infrastructure and services so that applications and services may be shared across government agencies wherever feasible, which is critical to avoid waste and to ensure coherence across government.

**Recommendation 4.** Strengthen World Bank and IFC support for skills development (including ICT skills development) in client countries to promote the use and production of ICT applications.

**DELIVERY SYSTEMS**

**Recommendation 5:** Given the recent dissolution of the joint GICT Department, ensure that the World Bank Group’s organizational structure for ICT enables effective strategy formulation and coordinated delivery, and that it articulates an effective division of labor among the World Bank, IFC, and MIGA.

**Recommendation 6.** Systematically review the implications of the global IT platform for how the World Bank Group delivers and assesses the impact of its interventions. In particular, the World Bank Group can build on the extensive global mobile network to support real-time data collection and M&E for ICT and other interventions in client countries.

**Recommendation 7:** Improve the World Bank’s procurement outcomes in ICT projects and ICT components by (i) building ICT expertise and knowledge among procurement specialists; (ii) adapting procurement rules to reflect sector specificity and the growing use of public-private
partnership-type approaches; and (iii) ensuring the design of consistent procurement procedures to facilitate effective collaboration between technical staff and procurement specialists, including by upstream engagement of procurement specialists during project preparation.