Connecting Sub-Saharan Africa: A Strategy for ICT Sector Development

By 2005, despite preliminary reforms, Sub-Saharan Africa still lagged behind other regions in the development of information and communication technology (ICT) infrastructure and services. This ESW outlined a strategy and roadmap to address critical barriers to broadening access, lowering prices, and mainstreaming the use of ICT for development. Follow-up lending projects and nonlending technical assistance have contributed to recent advances, including increased investment in regional ICT infrastructure, strengthened regulatory framework and sector performance, and improved efficiency of government functions. For instance, there has been an increase in the number of countries with regulatory authorities, telephone penetration rates have more than doubled, and e-applications have cut the turnaround time for government services in some countries from several weeks to just one or two days.

1. Challenge

By 2005, despite some early signs of growth, Sub-Saharan Africa (SSA) still had the lowest telephone and Internet penetration rates of any world region. The telephone penetration rate in 2005 was 13.4 percent compared to the world average of 53.9 percent, and there were only 2.1 Internet users per 100 population compared to the world average of 15.6. Before 2005, SSA also had the highest prices of any region for international calls and broadband access. Telecommunications services were unaffordable for most consumers in the region: the monthly price of a residential fixed line was equivalent to 19 percent of average per capita monthly income in 2005, compared to the world average of 2 percent. Broadband penetration in SSA lagged behind the rest of the world (in 2005, 0.3 per 1,000 population compared to 34 worldwide).

Recognizing the enormous potential of ICT, many African countries had taken preliminary steps to reform their ICT markets by introducing competition, privatizing state-owned telecommunication companies, and developing regulatory frameworks and institutions. But several issues continued to impede sector growth. Critical gaps persisted, such as inadequate national backbone development, lack of infrastructure and access in rural areas, and poor quality of infrastructure, particularly in post-conflict countries. The lack of financial and human resources seriously hindered the ability of the regulatory agencies to respond to market developments. More effective regulatory frameworks were needed to create competitive markets and attract private investment.

To address these gaps, the New Partnership for Africa's Development (NEPAD) heads of state requested World Bank support at the end of 2004. As the first step in response, the Bank developed a strategy and roadmap for ICT development in SSA through an ESW activity. The report was prepared by a team from the Global ICT Department (GICT) of the Bank, drawing on active policy dialogue with governments, the private sector, donors, and civil society organizations across the African continent.

1 Call from Heads of State at the 12th Summit of the Heads of State and Government Implementation Committee (HSGIC) of the New Partnership for Africa's Development (NEPAD), Algiers, November 2004.
2. Findings and Dissemination

The ESW report underscored the need to consolidate and build on the telecommunications sector reforms made over the past decade. A majority of SSA countries had implemented various aspects of the core reform agenda but had not yet completed the process. The study emphasized actions to strengthen the legal and regulatory framework, given its crucial role in creating competitive telecommunications markets and spurring private sector investment. This in turn would lead to improved access and lower prices.

Beyond implementation of the core reform agenda, the study called for additional government support to create incentives for private sector investment in areas where market forces have been insufficient. These include provision of access to underserved and rural areas and development of the national backbone and cross-border connectivity infrastructure. The study highlighted the potential use of output-based aid and other innovative public-private partnership schemes to close infrastructure and service gaps in these areas.

The ESW called for actions to remove the policy and institutional barriers that prevent governments, civil society organizations, and private sector enterprises from applying ICT to meet development objectives. "ICT for development" applications must be an integral part of a robust ICT sector in SSA. These include e-commerce applications to support local private sector development, e-health applications to achieve social objectives in health care delivery, and e-government applications to increase efficiency in public service delivery and government accountability and transparency.

The study also recommended that the World Bank Group and its development partners step up their support to regional initiatives in order to address cross-border connectivity gaps in the region, accelerate the development of more viable regional ICT markets, and foster economic integration. Policy and regulatory harmonization will be required for the success of any initiative linking the SSA region. In addition, collaboration with partners in the donor community and the private sector is essential to leverage resources and ensure a coherent rollout of regional infrastructure.

The report, *Connecting Sub-Saharan Africa: A World Bank Group Strategy for Information and Communication Technology Sector Development*, was published in April 2005 and was widely disseminated during the World Summit on the Information Society in Tunis in November 2005. Copies were also sent directly to ministries, regulatory agencies, and World Bank country offices throughout Sub-Saharan Africa.

3. Subsequent Role for the Bank

The World Bank has been working closely with governments in SSA to implement several of the key recommendations. To strengthen regulatory frameworks, infoDev, the multidonor trust fund facility housed at GICT, developed a comprehensive regulatory toolkit in collaboration with the International Telecommunication Union. The Bank is also undertaking various initiatives to build capacity in regulatory design and implementation.

The Bank provided subsequent assistance in incorporating ICT more fully into the development agenda in several SSA countries. In 2006 it approved two new projects, one in Rwanda and one in Ghana, to develop the IT industry and e-government applications. The e-Rwanda Project ($10 million) is supporting the development of ICT applications in several sectors to enhance government efficiency and effectiveness and provide better access to information. The e-Ghana Project ($40 million) is helping develop the IT-enabled service industry and improve the efficiency and transparency of select government functions through public-private partnerships.

To address regional connectivity, in 2007 the Bank approved the $420 million Regional Communications Infrastructure Program (RCIP), targeting 25 countries in East and Southern Africa. The project involves financing coordinated backbone deployment to avoid redundant infrastructure initiatives, designing public-private partnerships to leverage private sector investment, and supporting the development of e-government applications. The first phase of this program is being implemented in Burundi, Kenya, and Madagascar. Phase 2 (in Rwanda) and phase 3 (in Malawi, Mozambique, and Tanzania) are in advanced stages of preparation. In addition to the RCIP, two regional connectivity programs are being developed, the Central Africa Backbone project and the ECOWAS Connectivity program.
4. Key Results

The ESW contributed to early results in several areas:

*Strengthened regulatory framework and sector performance.* The number of SSA countries with separate regulatory authorities increased from 37 to 41 between 2005 and 2007. A number of countries have introduced competition in mobile or international telephone services, leading to an increase in private investment and better access. Private investment in telecom infrastructure in SSA increased from $5 billion in 2005 to $7 billion in 2006, a 40 percent increase in one year, according to the World Bank's Private Participation in Infrastructure database. Between 2005 and 2007, connectivity levels in Africa rose dramatically. The total (fixed and mobile) telephone penetration rate almost doubled from 13.4 percent to 24.6 percent, driven mainly by a steep increase in mobile phone penetration from 12.0 percent to 22.8 percent. Internet users per 100 population rose from 2.1 in 2005 to 4.4 in 2007, with a compound annual growth rate of 44 percent.

*Improved efficiency of government functions.* E-applications have helped improve efficiency and transparency of select government services in several countries. For instance, through a public-private partnership in e-government applications, the Customs Agency of Ghana increased revenues by almost 50 percent in the first 18 months and reduced processing time from several weeks to a few days. Nigeria's e-passport service has significantly reduced the number of days and processes required for passport application and is contributing to efforts to eliminate forgery, passport falsification, multiple acquisition of passports, and identity theft. A number of countries are simultaneously launching investment promotion and skills development programs to position themselves as destinations of choice for IT and IT-enabled services.

*Focus on regional integration and private investment in regional infrastructure.* The ESW provided valuable support to SSA's regional integration agenda, which seeks to promote economic integration through harmonization of policies, regulations, and infrastructure.

Effectivecoordination of such policies makes private sector investment more attractive and leads to more effective use of regional infrastructure. The World Bank Group strategy for regional infrastructure development includes leveraging existing infrastructure in Central and West Africa to provide cost-effective communications to consumers. On the East Coast of Africa, which is the only part of Africa that does not have direct connections to global fiber optic networks, four large-scale submarine cable initiatives are currently in various stages of development and are being financed through public-private partnerships. These include EASSy (Eastern Africa Submarine Cable System, $235 million), NEPAD Submarine SPV ($600 million), SEACOM ($650 million), and TEAMS ($110 million).

5. Lessons Learned

There are two important lessons to be drawn from this ESW. First is the importance of working with related sector units within the World Bank Group. The team proactively engaged with the International Finance Corporation, the Private Sector Development Network, infoDev, the World Bank Institute, and the Africa Operational Quality and Knowledge teams, all of which provided valuable inputs. This also helped the team take a comprehensive view of the sector that combines technology, policy, and institutional perspectives.

Second is the importance of a timely response. The ESW was a rapid response to a request for World Bank support by NEPAD to identify and address constraints to connectivity in Africa. The immediate response was a key factor in obtaining enhanced support from national governments and regional institutions for subsequent projects proposed by the World Bank and other development partners.

6. Learn More


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