

Sectoral Analysis of ICT Use in Nigeria

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INTRODUCTION

Information and communications technologies (ICTs) have become key tools and had a revolutionary impact of how we see the world and how we live (Dabesaki, 2005). They have the potential to be a major driving force behind the economic growth of any nation because of their potentially strong restructuring impact on existing economic activities and the ability to affect economic activities in a variety of ways. These include improving the quality of existing services, creating new services, raising labor and productivity, increasing capital intensity, enhancing economics of scale, and creating new economic structures. ICTs are also paving the way for greater ease of movement of technical and financial services, and are instrumental to development during the rapid globalization process. From the information technology revolution, a new kind of economy emerges. This is the information-based economy in which information along with capital and labor is a critical resource for creation of income and wealth for the enhancement of competitiveness. ICTs have also left their mark on the political and social dimensions of development, specifically by enhancing participation in decision-making processes at the corporate, local, and national levels.

It is an established fact that a few developing countries like China, India, and Brazil are successfully taking advantage of the opportunities information and communications technologies offer and have made significant improvement in their economic, and many more developing countries (including Nigeria) are beginning to derive some of the potential benefits. For most of the developing world, however, information and communications technologies remain just a promise, and it seems a distant one at that. There is little evidence from past experience of national and international development policies, strategies, and programs to suggest that much will change for large segments of the world's poorest people.

Nigeria, like most developing countries, is an "information-poor" country where the deployment and application of ICTs is still in its infancy. This article, which is an updated version of an earlier one (Ajiferuke & Olatokun, 2005), presents the current status of ICT in Nigeria, particularly its applications in some sectors of the nation's economy. It

also identifies some inhibitions to the effective deployment and exploitation of ICT in Nigeria and concludes with a discussion of the policy issues, challenges, and prospects of ICT use in Nigeria.

BACKGROUND

ICT Initiatives, Policy Formulation, and Implementation

The Federal Government of Nigeria has accorded ICT a national priority. This is evident in the approval of the National Information Technology Policy (NITP) and the subsequent establishment of the National Information Technology Development Agency (NITDA) in 2001 to serve as a bureau for the implementation of the NITP. The policy recognized the private sector as the driving engine of the ICT sector. NITDA is to enter into strategic alliance, collaboration, and joint venture with the private sector for the actualization of the ICT vision, which is to make Nigeria an ICT-capable country using ICT as an engine for sustainable development and global competitiveness. It is also to be used for education, job creation, wealth creation, poverty eradication, and global competitiveness.

A sectoral application of ICT has been recognized in the formulation of the ICT policy, which involves the development of the following areas of the economy: Human Resource Development, Infrastructure, Governance, Research and Development, Health, Agriculture, Urban and Rural Development, Trade and Commerce, Arts, Culture and Tourism, National Security and Law Enforcement, Fiscal Measures, and so forth. According to Ajayi (2002), NITDA has embarked on a number of projects aimed at stimulating the growth of ICT in the country. The Public Service Network (PSNet) is one such project, aimed at addressing the major problem of ICT infrastructure, which will serve as a pipeline for ICT services. It consists of a Very Small Aperture Terminal (VSAT) sited in each state capital. This VSAT provides Internet access for that central location and all other locations connected to this center using broadband wireless access (BWA) technology. The various sites around the country are then connected to each other through a vir-

tual private network (VPN). Nine states have already been connected in the first phase of the project.

Human capacity building has been another focus of NITDA. Towards realizing this goal, NITDA has forged a thriving partnership with public and private organizations in what has become a public-private partnership (PPP). The Enterprise Technology Center (ETC) is one such PPP that is worthy of note. The ETC is a partnership between NITDA and two private companies to provide ICT training for civil servants. NITDA has also collaborated with several multinationals and international organizations to deliver specialized training in some train-the-trainer workshops. These institutions include UNESCO, the International Center for Theoretical Physics (ICTP), and Cisco Systems.

The Telephone System in Nigeria and the GSM Revolution

The telephone system in Nigeria has been challenged for years. A breakthrough in telephone infrastructure emerged in January 2001 when the sector was totally liberalized, leading to the Nigerian Communications Commission (NCC) issuing four wireless licenses to MTN Nigeria Communication, Econet Wireless Nigeria Limited (now Celtel), Communications Investment Limited (CIL), and state-owned NITEL. CIL, however, had its license withdrawn because of its inability to meet the deadline for payment of the license fee. The fourth GSM provider, Glomobile (Globalcom), though it won its multiple licenses in September 2002 for the provision of telecommunications services, did not commence provision of mobile phone services until August 2003. Since the GSM launch, mobile telephony has rapidly become the most popular method of voice communication in Nigeria. Indeed these developments have been truly explosive: today Nigeria has about five million mobile lines and about one million fixed lines, compared with just about 450,000 working lines from NITEL four years ago.

Internet Usage in Nigeria

The Internet has experienced relatively slow growth in Nigeria and other countries in the poorer regions of the world such as sub-Saharan Africa. Nigeria is among the nine countries in Africa that achieved full Internet access in their capital

cities and some secondary towns by 1998 (Jensen, 1998). Available statistics show that Internet usage in Nigeria between 2000-2003 stood at 200,000, representing 0.1% of the total population. For Nigeria with a population of over 120 million, growth rate has been stagnant. This may have contributed to the slow pace in socio-economic development in the country. According to Internet Usage statistics for Africa, Internet usage in Nigeria remained stable until 2003, but increased to 5 million in 2006, about a 3.1% penetration rate (see Table 1). Many factors, including high cost of bandwidth and telephone lines, might have made the majority of the operators to charge within the range of N100 per hour, which many surfers might not be able to afford as a result of the prevailing economic realities.

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ICT Application in Various Sectors

ICT Usage in Manufacturing

ICT usage in manufacturing companies in Nigeria has improved production and made it easier to perform difficult tasks. ICT is used in product design, such as in computer-aided design and computer-aided manufacturing. ICT is also used in the control of processes, as well as the control of machinery. A survey of 22 manufacturing companies conducted in Lagos and Ibadan in March 2005 showed that ICT facilities exist at various levels and departments in the companies (Lasaki, 2005). ICT is also being used to capture information at all stages of design, manufacturing, and marketing. According to Lasaki (2005), "There is considerable evidence that the Nigerian manufacturing sub-sector is moving towards proper integration into the information society."

Use of ICT in Education

Education helps in the development of skills and the acquisition of knowledge. There is a need for continuous improvements in education. ICT is playing a tremendous role in educational developments in Nigeria. Online admission into Nigerian schools is becoming more and more popular. Many schools have institutional Web sites where information about

Table 1. Nigeria's Internet usage and population growth (ITU, 2003; Internet World Stats, n.d.)

Year	Users	Population	% Penetration	Usage Source
2000	200,000	142,895,600	0.1 %	ITU
2006	5,000,000	159,404,137	3.1 %	ITU

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