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## **Africa's Socioeconomic Development in the Age of New Technologies: Exploring Issues in the Debate**

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### **Abstract**

New technologies are perceived as the engines that drive socioeconomic development across the world. However, the extent of the availability, use and impact of new technologies on the socioeconomic development of Africa remains a subject of research investigations. Research on the impact of new technologies on the socioeconomic development of Africa is critical to the development of knowledge and the official policy for social change in Africa.

**Key Terms:** ICTs, New technologies, Socioeconomic development, Africa

### **Résumé**

Les nouvelles technologies sont considérées, de par le monde, comme le moteur du développement socioéconomique. Toutefois, le degré de disponibilité, l'utilisation et l'impact des nouvelles technologies sur le développement socioéconomique de l'Afrique demeure un terrain fertile pour la recherche. La recherche axée sur l'impact des nouvelles technologies sur le développement socioéconomique de l'Afrique s'avère indispensable à la mise en place de connaissances et de politiques favorables au changement social en Afrique.

**Mots clés :** TIC, nouvelles technologies, développement socioéconomique, Afrique

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## Introduction

Is there a positive relationship between new communication technologies (ICTs) and Africa's socioeconomic development? Diverse perspectives abound on the extent to which new communication technologies enhance or impede the socioeconomic development of different countries and regions. For Africa, Emeagwali (web document 2007) is unequivocal in his view that there is a strong link between new technologies and economic growth. He argued that: 'Africa's inability to realise its potential and embrace technology has left it at the mercy of the West'. But Rodriguez and Wilson (2000:3) insist that, 'Although these new technologies appear to be improving economic performance and welfare among the user populations, the link between ICTs and society-wide economic progress has been more elusive'.

Nevertheless, multinational indices of socioeconomic development based on the diffusion of new technologies continue to place Africa at the bottom of the ladder. In many instances, lack of progress in the uptake of new technologies has been cited as the chief cause of Africa's poor performance. However, Guerhazi and Satola (2005:23) remain cautious about the optimism associated with new communication technologies.

For ICTs to deliver on their promise of economic and social development, it is critical that countries adopt enabling legal and regulatory environments that support e-development... this enabling environment was recognized in the Declaration and Action Plan of the first phase of the World Summit on the Information Society (WSIS), which emphasized that a trustworthy, transparent, and non-discriminatory environment was essential for the use and growth of ICTs in the developing world.

As Obijiofor et al. (2000:59-60) observed, 'the assumption often made is that if one just purchases a few computers and modems, a post-industrial society can magically result'. Research has shown that this is not the case.

## Communication Technologies as Tools of Development and Empowerment

Emphasis on new technologies as the basic tool for Africa's socioeconomic transformation has been drawn essentially from the experiences of western industrialised countries. For example, during the industrial revolution, many western countries experienced the constructive force of science and technology and found them to be the vital tools of development. Based on that historical experience, there are now widespread perceptions that new technologies constitute the engines that power the socioeconomic growth and development of many countries. Against this background, there is growing pressure on Africa to invest in new technologies. In spite of

overwhelming optimism associated with new communication technologies, many people still hold the fear that what worked for the West may not necessarily work for Africa. But greater evidence seems to suggest that there is a positive relationship between new communication technologies and socioeconomic development of many industrialised countries.

Coincidentally, the benefits of new technologies, touted by advocates of the technologies, have not been lost on African governments. Kwansah-Aidoo and Obijiofor (2006:359) note that 'various African governments have recognised the strong link between new technologies and socioeconomic development and are proceeding to put in place measures aimed at harnessing and maximising their perceived benefits'. For example, Uganda's National Information and Communication Technology Policy Framework 'recognises that ICTs have a big role to play in stimulation of national development, in particular modernization and globalization of the economy' (Mwesige 2004:88). Similarly, Ghana announced in the mid-1990s a policy to abolish tariffs imposed on imported computers. Ghana's ICT policy aimed, among other things, to promote public access to computers and to enable school students to appreciate the benefits of computer literacy.

Even with rising optimism about the potential of new communication technologies to solve Africa's socioeconomic problems, it is important to caution that the mere presence of new technologies does not determine whether the technologies will be used or what people do with them. Research evidence shows that new technologies are adopted when they are deemed useful by the adopting culture. For example, in a study of the technological adaptation process among the Maori of New Zealand, Schaniel (1988) noted that new technologies create change in society. More significant, he pointed out that the direction of change is often determined by the nature and use of that technology in the adopting culture.

The debate in the literature suggests that new technologies can transform African economies, although researchers agree that there are huge obstacles that need to be overcome in Africa before the continent can expect to reap the full benefits associated with the implementation of new communication technologies. One of the obstacles is the inability of the majority of people in Africa to access new technologies. On this point, Ho et al. (2002:129) observe that 'Questions about the information and organizational capacities of the Net will also have to address the reach of the Net to various populations'. Rodriguez and Wilson (2000:4) acknowledge this point.

Although there are great complementarities between ICT and economic and social progress, there are also some important trade-offs between equity, well-being and the unhindered development of ICTs. Simple claims

about the links between ICTs and progress are not correct, and may in some cases be dangerously wrong.

Sonaike (2004:42) also believes that socioeconomic inequalities would impact adversely the ability of Africans to access web-based services. He suggests, for example, that the Internet is likely to amplify inequalities in Africa.

There is growing fear that rather than narrow existing inequalities in African countries, the Internet may widen them by providing a minority, urban-based elite information that strengthens its links with rich, western countries but is of dubious benefit to the struggle to reduce poverty and disease on the African continent.

In order to understand the link between new technologies and socioeconomic development, Oyelaran-Oyeyinka and Lal (2003:34) examined the factors that affect Internet diffusion and access in 41 sub-Saharan African countries. They identified various factors that impact Internet diffusion and access, and argued that 'high levels of GDP, a strong presence of Internet hosts and an effective telephone network, are indispensable to the diffusion of the Internet...' They also caution that a 'network society without an educated citizenry may not lead to the required transformation into the network society' (2003:34). Education, they note, serves as a catalyst for socioeconomic development.

With specific reference to how developing countries can improve Internet access and lower the digital divide, Oyelaran-Oyeyinka and Lal (2003:34) recommend that 'African countries need greater investment flows, since huge investments are a prerequisite to building effective communication networks'. They concede that, although Africa has made significant progress in the development of literacy at the primary, secondary and tertiary levels, a growth in basic education is not sufficient to trigger socioeconomic development. In their view, 'Explicit investments will have to be made if African countries are to develop a digitally literate citizenry' (Oyelaran-Oyeyinka and Lal 2003:34). They identified other factors which influence Internet diffusion. These include private investments in telecommunications, economic policies that stimulate investments in the telecommunications sector, as well as an increase in the number of personal computers. With regard to the growth in computers, Oyelaran-Oyeyinka and Lal (2003:33) point out that 'the existence of a computer is a necessary condition for Internet access'. Rodriguez and Wilson (2000:33) acknowledge the point, listing what they believe to be the merits and drawbacks of computer access or lack of access:

The reason that computers raise inequality appears to be two-fold. First, workers with greater levels of education are precisely the workers who are best able to use information technology. Therefore the introduction of information technology widens the gap in opportunities: it allows college graduates to earn higher wages while it reduces demand for – and the wages of – unskilled workers with a high school diploma or less. Second, the introduction of a new technology allows firms to substitute machines for people. The people who are displaced by machines create a new mass of unemployed that depresses existing wages:

Oyelaran-Oyeyinka and Lal (2003) also identify other problems that hinder Internet access in Africa:

One infrastructural constraint, that of “lack of computer terminals”, is often a result of improper deployment of computers when they do exist. It is common to find a relatively new computer in an academic department with full Internet access but located in the Head of Department's office where it is hardly used. This limits the use of the computer for other academic staff.

Similarly, in a study of the impact of new technologies on the socioeconomic and educational development of Africa and the Asia-Pacific, Obijiofor et al. (2000:21) observe that ‘there are serious barriers to ICT use in educational and socioeconomic development, such as issues of infrastructure support, access to the ICTs, training and skills development, and hierarchical social relations which determine who has access to ICTs’. The researchers found that the execution of ICT policies in Africa was taking place in a context where the cultural and institutional barriers were being overlooked.

Djamen et al. (1995:231) believe the new communication technologies will serve Africa's interest in the digital age. In their view, ‘Electronic networking will not only enable Africans to access global data but will also help the entire world to access information on Africa in Africa. Thus, the present situation in which Africans do not directly control their own data would be reversed.’ Similarly, Henten et al. (2004:3) underline the advantages associated with use of the Internet and email technologies:

World Wide Web and e-mail provide new opportunities for low cost communication and dissemination of information, and thereby promotion of economic and cultural development. Tele-medicine can extend the outreach of public health services, tele-learning and on-line extension services can support farmers and increase agricultural production, and producers have better access to market information and marketing.

As mentioned elsewhere in this paper, evidence exists of a positive relationship between new technologies and socioeconomic development

(Oyeyinka-Oyelaran and Lal 2003; Henten et al. 2004; Nwesige 2004; Sonaike 2004; Kwansah-Aidoo 2005). Nevertheless, as acknowledged earlier in this paper also, there are enormous obstacles yet to be surmounted before Africa can expect to leverage the full benefits associated with new technology uptake. For example, Sonaike acknowledges that the Internet can lower the existing technological and knowledge disparities between western and non-western countries. But, for that to happen, he advocates 'appropriate development of telecommunication and Internet technology on the continent' (2004:43). Jegede (1995:221) is less optimistic about how the Internet and other new communication technologies can assist Africa to overcome problems of socioeconomic development. He identifies institutional and infrastructural obstacles that impede the use of Internet for socioeconomic development in Africa.

Three quarters of Africa's population is illiterate (so hooking them to the Internet is out of the question); three quarters of Africa is rural without basic facilities of electricity and telephone (so hooking up to the Internet can only be restricted to the urban areas); three quarters of universities in Africa have depleted library resources, have overworked academics and run computer science departments without computers... and there are currently 200 million personal computers worldwide but less than one percent of them are located in Africa (Jegede 1995:221).

Figures on Internet use in Africa (see Jensen 2002, web document) suggest that, 'Of the approximately 816 million people in Africa in 2001, it is estimated that only 1 in 35 have a mobile phone (24m); 1 in 40 have a fixed line (20m); 1 in 130 have a PC (5.9m); 1 in 160 use the Internet (5m).' As far back as 2001, there were about five million to eight million African Internet users (out of an estimated population of 816 million people), 'with about 1.5-2.5 million outside of North and South Africa. This is about 1 user for every 250-400 people, compared to a world average of about one user for every 15 people, and a North American and European average of about one in every 2 people' (Jensen 2002, web document). Comparatively, Jensen reports that, for Latin America and the Caribbean, 1 in every 30 people use the Internet; 1 in every 250 people use the web in South Asia; for East Asia, the figure is 1 in every 43 people; for Arab states, it is 1 in every 166 people (Jensen 2002, web document). Current figures show that, of the estimated population of 933,448,292 people in Africa in 2007, about 33,334,800 (3 per cent) use the Internet, while 97 per cent of the rest of the world are Internet users (Internet World Stats 2007, web document).

As grim as the figures on Internet use in Africa might appear, Kwansah-Aidoo and Obijiofor (2006:359) insist that 'the growth and development of

the Internet in Africa has been slow but steady'. For example, Sonaïke (2004) noted that only four African countries were connected to the World Wide Web as at 1993. By 1997, the number of African countries with access to the web had risen astronomically to 44. And by 2000, 54 African countries could claim Internet access although most of them were located in the urban centres (Sonaïke 2004:46). But, even with the growing Internet presence in Africa, Oyelaran-Oyeyinka and Adeya (2004:68) caution that, 'mere exposure to a technology does not guarantee usage, and as such the existence of information in society does not assure the use and concomitant acquisition of knowledge'. Their caution should be underlined because, based on their study of 200 teachers in 10 universities in Kenya and Nigeria, Oyelaran-Oyeyinka and Adeya (2004:75) found that only a handful of their respondents used the Internet to engage in electronic commerce. On that basis, they argued that:

The low intensity of Internet use for e-commerce is symptomatic of the deeper problems of the underdeveloped finance sector. The reasons include lack of credit cards to poor financial resources. The lack of credit facilities compounds the problems, since it is a necessary component for online shopping. Obtaining an international credit card from African financial institutions requires proof of a healthy bank balance and above average income. This locks out most lecturers/researchers and limits their involvement in e-commerce.

Research data from other parts of Africa also support the view that Internet use in the continent is dominated by email communication, while African Internet users engage in little electronic commerce (see Kwansah-Aidoo and Obijiofor 2006; Sonaïke 2004; Nwesi 2004; Robins 2002; Lee 1999). The implication of this trend of Internet use in Africa, according to Sonaïke (2004:43), is that 'The vast potential of the Internet for research and education, as well as for commerce, would be lost to this majority' of the African population. Also, Kwansah-Aidoo and Obijiofor (2006:363) found, in their study of Internet use among university students in Ghana, that 'an overwhelming majority of respondents use the Internet mainly for sending emails'.

### **Conclusion**

Even with evidence of a positive relationship between new communication technologies and socioeconomic development of various parts of the world, there are still vast obstacles that hinder the uptake of new communication technologies in both the urban and rural areas of Africa. Africa's ability to successfully harness new communication technologies for socioeconomic development of the continent would depend largely on the com-

mitment of African leaders and how quickly African governments move to conquer the range of institutional, social, economic, and political barriers that impede greater access to and diffusion of the new technologies.

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