

Mobile Telephony in Sub-Saharan Africa

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INTRODUCTION

A mobile telephone is a telecommunications device that connects its user to a network using a wireless radio wave transmission technology. In some parts of the world, mobile phones are known as cellular phones. Mobile telephones were first introduced in the mid-1980s (Marcussen, 2002; Sadeh & Sadeh, 2002; Sarker & Wells, 2003). Mobile telephony is diffusing globally due to a variety of reasons, including cost advantages in setting up the system compared to landlines, its small-sized nature, portability, and its ability to foster and enhance social relationships, among others (Plant, n.d.; Marcussen, 2002; Sadeh & Sadeh, 2002; Sarker & Wells, 2003; ITU, 2004; Anonymous, 2006). According to reports by ITU (2004), the percentage of total telephone subscribers that are mobile telephone subscribers has been increasing over the last five years. In 2005, mobile telephone subscribers were approximately 62% of total telephone subscribers for the five regions of the world (see Table 1).

The data in Table 1 shows that Africa has the lowest connectivity rate (i.e., 9 per 100 people), but with the highest number of mobile telephone users as percentage of the total telephone subscribers for 2004 (WEF, 2003; ITU, 2004). The current trend suggests that this will be the case for some time (BBC News, 2002a; WEF, 2003; ITU, 2004). For example, BBC News (2002a) reported that “the popularity of wireless communication is soaring. More mobiles were connected in

Table 1. Mobile telephony (cellular) subscribers per 100 people 2004 (ITU, 2004)

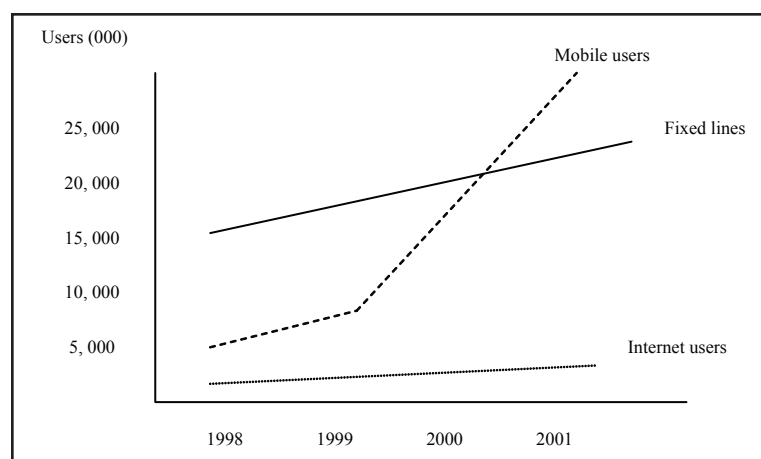
Region	CAGR	Per 100 2004	As % of total telephone subscribers 2004
Africa	59.7	9.14	75.1
Americas	22.9	42.74	55.8
Asia	34.4	18.72	56.8
Europe	25.9	71.61	63.6
Oceania	20.7	61.71	59.2

* CAGR (Compound Annual Growth Rate)

the past five years than landlines installed in the last century.” Similarly, a recent report by the World Economic Forum (WEF, 2003) on ICT status in Africa indicated that the number of mobile telephone subscribers in Africa now numbers around 23 million and the demand is expected to grow in the future. Furthermore, the WEF report also provided the growth estimate for other information and communication technology (ICT) products in Africa which is reproduced in Figure 1. Clearly, the number of mobile telephone users is the highest of the three ICT products compared.

Given the encouraging statistics seen with mobile telephones user in Africa, the following questions are posed:

Figure 1. Growth in the number of ICT users in Africa



- Can Sub-Saharan African countries exploit the diffusion of mobile telephones to create or engage in m-business?
- Why would such a facility be useful for them?

THE REGION OF SUB-SAHARAN AFRICA

Africa, with its population of about 880 million people, is the poorest continent in the world (World Bank, 2001a, 2001b; Ifinedo, 2005a, 2005b; CIA, 2005). In terms of geography, Africa tends to be described as comprising two regions—North Africa and SSA. The northern part is comparable to the Middle East economically and culturally (Ifinedo, 2005b). Further, South Africa (also known as the Republic of South Africa [RSA]) tends to be excluded from the rest of SSA because of its relative high socio-economic indicators. In brief, SSA is associated with poverty, a high illiteracy rate, civil strife, and chronic under-development (World Bank, 2001b; ITU, 2004; CIA, 2005). In this article, the northern part of Africa and RSA are excluded, because these parts of Africa have better indicators for ICT use and are richer than the rest of the continent (Ifinedo, 2005b). Put differently, the conditions in SSA are different from those in the excluded regions, and the region of SSA typifies perceptions of Africa more than do the excluded regions. For example, in a recent report, the World Bank (2001b, p. 38) states: “In Africa, slow growth increased both the share and the number of the poor over the 1990s; Africa is now the region with the largest share of people living on less than US\$1 per day.” The conditions in SSA, it appears, are more consistent with the foregoing observations than for any of the countries in North Africa and RSA.

With about 10% of the world’s population living in the SSA (CIA, 2005), it is sad to note that only 0.2% of the world’s one billion fixed telephone lines are located in the region (WEF, 2003, p. 2). Indeed, the current statistics for Africa with regard to the pervasion of mobile telephony in the region is welcoming. However, one of the main questions for policymakers in the region is: how should the advent and spread of mobile telephony in the region be exploited to improve the livelihoods of its inhabitants? Answers to such a question are pertinent because development research and reports have suggested that ICT adoption, diffusion, and usage in the developing countries (including SSA) could hasten socio-economic development in such disadvantaged regions of the world if concerted efforts are made to harness the power of such ICT products (Avgerou, 1998; Castells, 1999; Singh, 2000; G8 DOT Force, 2001; UN ICT TASK Force, 2004; Ifinedo, 2005b). Recently, during an ICT task force meeting at UN headquarters in New York, the UN Secretary General Kofi Annan remarked: “Information and communication technologies can help us turn this potential

[of using ICT for socio-economic development] into concrete opportunities that will help the poor work their way out of poverty” (BBC News, 2002a). The UN Secretary General added: “It is not, of course, a magic formula that is going to solve all the problems, but it is a powerful tool for economic growth and poverty eradication, which can facilitate the integration of African countries into the global market.”

Along a similar line of reasoning, Singh (2000) discussed how the use of ICT products in developing nations can improve the chronic socio-economic conditions in such regions. He stated, “For firms [and people] in the developing countries dealing in the global market some of the common problems are [as follows:] lack of market knowledge, poor communication, cumbersome procedures, delays and uncertainties in supply, poor quality and excessive stock.” He noted that e-commerce (the buying and selling over the Internet) “can help solve some of these through better knowledge management, communication and automated supply procedures leading to higher profits and enhanced competitiveness” (p. 23). It is important to add that the foregoing issues and problems identified by Singh are inhibitors to socio-economic development in developing parts of the world even when the emphasis or bias is not the global market. In other words, poor supply chain management and poor organization could stifle economic development in local trade as well when information does not get to the people that require it.

At this juncture, it is vitally important to investigate if the ongoing positive pervasion of mobile telephony in SSA can facilitate m-business among the people and businesses in the region. Next, we discuss the concepts of mobile business at a general level, and present a summary of how such concepts have been implemented in one SSA country—Senegal—to improve the lot of some citizens in that country.

WHAT IS M-BUSINESS?

Simply, m-business, which is also known as mobile business, can be defined as doing business using wireless services. This is the mobile equivalent of e-business. A clear picture of m-business emerges by understanding e-business. Zwass (1996) defines e-business as “the sharing of business information, maintaining business relationships, and conducting business transactions by means of the telecommunication networks.” Similarly, m-business can be defined as the sharing of business information, maintaining business relationships, and conducting business transactions using a wireless radio wave transmission technology. Just as researchers (e.g., Turban, Lee, King, & Chung, 2000) have argued that there is a difference between e-commerce (buying and selling of good and services online) and e-business (a broader term that includes e-commerce and the servicing of customers, collaborating with entities both within an organization and

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