Chapter 8
Emerging Information and Communication Technology Policy Framework for Africa

Saul F.C. Zulu
University of Botswana, Botswana

ABSTRACT

While emerging information and communications technologies (ICTs) offer possible solutions to some of the problems of applying ICTs in Africa, there are many challenges that have to be addressed in order to create an environment that is conducive for harnessing these technologies. This chapter, therefore, reviews emerging ICTs and their potential for application in leveraging Africa's efforts towards meeting its development efforts. The Chapter highlights the digital divide barriers that may inhibit emergent ICTs in Africa. A review of current ICT policies of selected African countries indicates that the policies are geared towards application of ICTs other than their production. The review also reveals a lack of appreciation for emerging ICTs in Africa, both at the national as well as the sub-regional economic bloc levels. The chapter proposes policy frameworks for emerging ICTs for Africa that are necessary for creating an enabling environment for harnessing the emerging ICTs that will propel the continent into the 21st Century and beyond. The barriers to ICTs cut across many different issues. As such, they require multi-pronged policy approaches to address them. And that an emerging ICT environment must be anchored on a number of strategic policy frameworks including the legal, regulatory/administrative institutional framework, infrastructure, technology advocacy, financial, human resources, education and research frameworks. It concludes that Africa can prepare for its future by creating an appropriate environment for fostering the adoption and application of emerging technologies.

DOI: 10.4018/978-1-61692-012-8.ch008

INTRODUCTION

Information and communications technologies (ICTs) is a collective term used to describe the various technologies that are used in the processing of information including its coding, creation, storage, retrieval, manipulation, dissemination and transmission. ICT technologies include computers that are used for processing information, publishing that is used for coding and dissemination of information including broadcasting, and telecommunications, which are used for the transmission of information (Zulu, 1994; Moll, 1983). Since the invention of the digital computer and the birth of the micro-electronics industry, the ICT revolution has been marked by three major waves. The first wave, which ran from the time the computer was invented in the late 1940s up to 1970s, was characterized by centralized computing where many people were connected to one computer. The second wave of computing, which started in the 1980s with the introduction of the microcomputer, has run throughout the 1990s to the present, has been dominated by personal computing that has been marked by each person being tied to a personal computer. We are now on the threshold of the third wave, where computing is moving away from an individual to the environment. This is an era of widespread computing, which will be characterized by one individual-to-many computers, dominated by handheld, intelligent, and everyday devices with imbedded technology and connectivity. This is the era of pervasive computing, which Agoston, Ueda and Nishimura (2000) have described as being characterized by "Anytime/Anywhere, Any Device, Any Network, Any Data" total connected computing environment of the third wave (p.3).

Owing to a variety of factors, Africa and most of the developing world were largely by-passed by the first two waves of the ICT revolution, which were the building blocks for entry into the digital age. The consequence of this has been what has been termed as the 'digital divide' that currently exists between the developed countries of the North and developing countries of the South. The digital divide also exists within the countries of the South between the majority of the rural-based citizens who have no access to ICTs and a tiny urban-minority that has access to ICTs. Emerging ICTs can assist the digitally excluded regions of the world, including Africa to leapfrog the digital divide and catch up with the digitally connected world. Emerging ICTs, if well harnessed through the creation of an appropriate environment, offer opportunities for bridging the digital divide in Africa that can be used to leverage its development efforts.

The purpose of this chapter is to discuss issues of the digital divide in Africa and how emerging ICTs can be employed to address the issues of the digital divide towards achieving Africa's development goals. The chapter is presented in six main sections as follows: a discussion on the concept of the digital divide and its impacts on Africa; based on the global strategic vision of the Millennium Development Goals (MDGs), a discussion on how ICTs can contribute towards realizing issues of development in Africa; a review of developments in emerging ICTs and how they can be used to overcome the digital divide, a review of ICT policies of selected African countries and regional economic blocs in Africa vis-à-vis emerging ICTs, and; a presentation of a policy framework which Africa should put in place in order to create a conducive environment for harnessing the emerging ICTs to leverage Africa's development goals.

BACKGROUND

Emerging technology may mean different things to different people. As such, there is no standard, universally adopted definition of the term. The definitions of the term are therefore as diverse as the technologies to which they refer. According to Adomi (2009), emerging technologies are "those