

The role of ICT in the economic development of Africa: The case of South Africa

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ABSTRACT

Africa has been hard hit with poverty and disease and this has had an immense effect on the quality of social, cultural and political lives of the people. This has made development to move at a very slow pace in the last decades. But the presence of information and communication technologies (ICT) has somewhat carved out an alternative path to development. Notwithstanding the urgency and enthusiasm with using this new medium for social and economic change, the Internet has brought about negative as well as positive contributions to development in Africa. The contributions of scholars in the field of technology in bringing about change in the lives of people in Africa in general and South Africa in particular will be discussed and analyzed. The reviews and analysis of the contributions of the scholars in the field of development will be critical in judging the overall significance of the role of the Internet in promoting social change.

INTRODUCTION

This article examines how information and communication technology (ICT) has contributed in promoting economic development initiatives in South Africa. This is an initial exploratory study that will be accomplished through a critical literature review.

In this day and age, the role of technology in improving the lives of the people cannot be underestimated. Most people, including minorities, more than ever before are now buying goods and services online, sending messages across the globe to loved ones, sending emails to donor agencies for support and receiving instant replies (Ebeling, 2003). The issue of network technology has been one of the fundamental problems affecting development in Africa since 1960. These issues of connectivity and networking are some of the fundamental setbacks that the grassroot developing companies in South Africa are facing since the Internet boom of the early 1990s (Moodley, 2002 & 2005).

With this boom, communication for developmental issues has been strengthened. However, there have been some setbacks in terms of Internet literacy and accessibility (Lister, 2002). Not everyone in the third world has the knowledge and ability to use the computer, let alone owning one. This entire notion of the digital divide has affected development adversely (Wilkins, 2000).

Brief history of the Internet

The Internet has become an invaluable bridge for Africans to regroup and discuss social, political, cultural, and economic issues facing them at home and abroad. The Internet started in America with an initiative from President Dwight D. Eisenhower who saw the need for an Advanced Research Projects Agency (ARPA) that would cater for America's computer networking and communication in 1957 (Gromov, 1995; McCormick, 2002). This computer networking and communication was used mainly by giant organizations like the military and the government. It was not until the early 1990s that the Internet actually became commercialized. It then became a communication medium between persons. Computers all over the world could then be able to

receive data and sounds from other computers stationed in other countries. Computer Mediated Communication (CMC) became very popular for interpersonal communication. It was now very possible for people to use the Internet to send and receive email messages. Thus, the Internet helped tremendously in reducing mobility and making the world a global village.

Africans, living at home and abroad found out that the Internet had greatly contributed in bringing them together as well as contributed in economic development of their countries. For instance, Ayisi Makatiani's *Africa online*¹ (Economist, 2006) has helped tremendously to expand business initiatives in the continent. As a graduate from the Massachusetts's Institute of Technology, he used his acquired technological skills to help the African continent.

GETTING RID OF POVERTY

South Africa, like most other African countries has had her share of economic and political depression due mainly in part on the imposition of the foreign model (Rodney, 1981). Rodney discusses how the slow pace of development in Africa was blamed on the western imposed modes of development. For example, "means of communication were not constructed in the colonial period so that Africans could visit their friends. More important still, they were not laid down to facilitate internal trade in African commodities" (Rodney, 1981, p.209). Unlike most African countries that suffered the negative effects of colonization and were able to partially recover from it in 1960s with self-rule, South Africa was still rocked by apartheid². This had an immense effect on the economic and political lives of the people. South Africans were more concerned about street demonstrations than with development. Things took a dramatic turn when Nelson Mandela was elected in February 1990 to become the first black president of the country. The economic and political development of the country became his top priority.

The increasing rate of poverty in mostly the rural areas of the country brought about violence, rape, banditry, death and diseases like HIV/AIDS. The only way that the government of South Africa had to deal with these issues was to embrace the challenges of globalization. Technology became the answer to solve the acute economic problems of the people. Snyman et al., (2003) in their article "Getting information to disadvantaged rural communities: the center approach", made this observation:

Faced with problems such as poverty, poor infrastructure with regards to electricity and telephone lines as well as low education levels and computer skills, the South African government decided on the center approach as a viable option to place ICTs and other information services within reach of disadvantaged rural South African communities. (p. 96)

The government took this option under the leadership of president Mbeki because they foresaw a lot of changes and improvement in the lives of the people if technology became an option for the people. The issue of involving South Africa in the digital age was primarily due to the fact that globalization was forcing the entire continent of Africa to keep pace with the rest of the world. For instance, Limb (2005) stated that "New strategies for digital publishing, preservation, and access are evolving among Africans and Africanists, but face daunting problems, most notably in Africa" (p. 4). And since "...electronic publishing and learning developments are increasingly dominating global educational and scientific trends" (p. 2) there was no way that South Africa had to lack behind. South Africa saw global technology as the route to achieving greater capital and investment for the people.

Media Communication, especially broadcasting was the medium to be used as a tool to educate, and at the same time inform the people on another important area of development like AIDS. The

dangers of AIDS/HIV disease was one of the primary causes of death in the country. Mjwacu (2002) posits that:

One of the examples for this role is the South Africa's Broadcasting Corporation (SABC) Soul City, which is entertaining at the same time educating people about health issues (for example HIV/AIDS awareness and education). The technology and signal distribution therefore, determines the right to communication and information. "development is a bridge that connects the individual to society, and the local to the Global" (Tomaselli & Aldridge 1996: 54)... This can be regarded as part of development. (Mjwacu, 2002, p. 410).

This showed that technological innovations had to be used not only for information dissemination, but more importantly, to create educational and health awareness for the people of South Africa. This, therefore, called for the transformation of the analog systems that the South African Broadcasting Company (SABC) was using instead of digital. Digitalizing the telecommunication and the broadcasting industries in South Africa was the only way for the country to go "global." This happened because the major roadblock that the country faced during the apartheid era was now something of the past. Thus, economic and technological development became a possibility.

According to Melkote and Steeves, (2001), if development has to take place in a country, the people have to be liberated first. Their opinions are equally shared by Paolo Friere (1970) who admits that conscientization of the masses- in this case through information dissemination- is the key to achieving success with development. But government leaders must be willing to embrace development and be prepared to withstand the challenges.

Genuine development cannot take place in a continent that is full of leaders who are indifferent to the plight of its citizens (M'bayo et al., 1995). These leaders are lured by the profit business motives of multinational companies that come to invest in their countries at the expense of local industries struggling to stay afloat. These outside companies that are coming to 'invest' in Africa in general are all driven by greed. This is corroborated by Mitiku and Dirk (2006): "Third world countries are currently dominated under neocolonialism. In their view, local leaders are political elites who are advocating capitalist conservative values and are driven by **mutual self interest with the western capitalist**" (p. 127 emphasis added). The article goes on to emphasize the point that African politicians are lured by self-centered motives when endorsing foreign investments in the continent. This, therefore, makes one to ask the question whether there is genuine urge for meaningful and long-lasting developmental initiatives by neo-colonialists. Former oppressors can hardly nurture a genuine development programs to get South Africa in particular out of poverty. Instead, it is for their survival and prosperity that Africa is left in the mire of poverty and dearth (Wa Thiong'o, 1978). This is the reason for social discontent among the people and this has given rise to what Paolo Friere calls critical consciousness among the people. For development to take place the minds of the people must be decolonized, according to Ngugi Wa Thiongo.

ROAD TO DEVELOPMENT

Development of basic infrastructures in Africa has been a slogan for most countries in the continent after they gained independence in 1960. Prior to improving the lives of the people, the colonizers used assimilationist and acculturationist tactics to get the people to imitate western ways of life. The British were prone to maintaining existing cultures provided the inhabitants of Nigeria, Cameroon, Ghana, Sierra Leone and the other colonies abided by Western standards (Melkote et al, 2001). Africans in these various countries were subservient to Western civilization. The administrative and educational systems of those countries were fashioned in the manner of

colonialist's ways of life. Modernization theory made it possible for western ideals and modes of life to replace Africa's pre-existing socio-cultural modes as evidenced in this fact from Ake, (1996). "The modernization theorists talked simply of making the structure of the backward country identical to Western ones. (p. 10). This is what made the people to be subservient to the imperialists. The imperialists, according to them, had pulled them out from the jungle to the bright light of civilization. The western method of education was the way to bring literacy and resolve the problems of ignorance and the so called 'primitive' behaviors of the native African.

The French took a different approach. Their own approach was that of assimilation. This was the tendency to rid the Africans off from abiding by their social, economic and political systems. In the case of South Africa they witnessed multiple colonizations (Dutch and British). They were faced with the dilemma of choosing one development partner from the other. And now with the rise of the United States of America as the super power especially in information technology, it made South Africa to embrace most technological companies from there. The experience of Cape Town with Bill Gates technology was to positively change the lives of the people. His vision is cited in Williams, (1999): "New technologies enable a country to build a digital nervous system...it helps to improve the way people live learn and work." (p. 346). By 2010, as contained in the speech of Bill Gates during the Microsoft Government Leaders Forum Africa, 2006, attended too by Bill Clinton, he promised that the program will benefit 45 million Africans by 2010 (PR Newswire Europe, 2006). This is a very significant step in the right direction. This is now a signal to donor agencies to invest not only in South Africa but Africa as a whole. According to Williams (1999), the internet revolution and the software and hardware technology made it possible for South Africa to establish the "Cape information technology initiative" (CITI). The IT business, according to this writer was to make Cape Town the gate way to Africa's technology.

In order to show how South Africa has become the leading voice for Africa's technology, Mjwacu (2002) outlines some of the technologies that have helped to create jobs and improve the lives of the people. These technologies have been introduced only in SABC alone: "KU band satellite with "Orbicom" and "Sentech" as two signal distributor and DsTV. AstraSat and Deukom have been major transmission receivers. Introduced in 1995, KU-band satellite aimed at providing limitless spectrum availability.

SOUTH AFRICA AND THE INTERNET TECHNOLOGY

South Africa, like many other countries has joined other countries in sub-Saharan Africa to bring the Internet to its citizens. Computer literacy and other aspect of computer technology are prerequisites for using internet technology. Before 1997, school teachers in South Africa were not trained in technology. Consequently, it was difficult to train South African children on technology use (Potgieter, 2004). Technology training workshops for teachers of public schools in South Africa were undertaken in "three provinces between 1999 and 2002" (Potgieter, 2004, p. 208). As a result of this training, it became imperative for the National curriculum of the country to include technology as a requirement. In 2002, the following recommendation from the National Curriculum summed up the future of technology acquisition for South African children:

A complete new learning area (public schools in South Africa), namely technology was introduced as compulsory school subject to be taught in the foundation (grades 1-3), intermediate (grades 4-6) and senior phases (grades 7-9) of the general education and training band (first nine years of schooling) in South African Schools...the new technology learning areas does in fact have the potential to make education more relevant to the South African society. (Potgieter, 2004, pp.208-209)

This is indicative of the fact that South African technology has made a giant leap in the future as it seeks to inculcate technological discipline and awareness to its citizen. In spite of this effort by the government of South Africa, challenges still abound especially in the area of telephone lines. Most northern African countries have had more Internet subscription lines than most other countries in the sub-Saharan region. With the exception of South Africa, Namibia and Zimbabwe that can boast of more than 600 Internet service providers ISPs (Hall, 1998), most other sub-Saharan African countries are still suffering from the lack of telephone lines to channel dial-up Internet to its people. Moodley (2003) makes this remark about the state of the Internet technology in South Africa:

South Africa has experienced rapid growth in Internet use, and is placed at number 35 by the Economist Intelligence Unit's (EIU) 'E-Business readiness Rankings' of 60 countries. The number of dial-up subscribers grew by an average annual rate of 80% since 1994, and the number of Internet users had surpassed the one million mark by 1998. According to EIU's Pyramid Research, South Africa had 540.000 Internet dial-up accounts in 1999, and will reach 1.1 million by 2002. Of the estimated three million Internet users in Africa, two million are in South Africa. in addition, more than 90% of Africa's internet traffic is generated in South Africa. (Moodley, 2003, p. 29)

If technology is an indicator for economic growth, then one can say almost with certainty that South Africa, unlike other African countries in the sub-region has advanced in economic development. Findings in 2006 show that the greatest number of Internet users in Africa resides in either South Africa and Kenya in the sub-region or in Morocco and Egypt in the northern region (www.allafrica.com). This article goes on to show how this has contributed in economic development of those countries. This economic development means primarily that capital has been generated and communication infrastructure in the country has improved tremendously. "South Africa has a well developed Internet infrastructure in business and academia, and its degree of connectivity places it in the top 25 in the world. South Africa has an advanced telecom network in the commercial centers. (Moodley, 2003, p. 29). The irony is that these advancements only affect mostly those in the urban areas. South Africa, like most other African countries are still falling short of expanding Internet connection to the rural areas because of lack of telephone lines availability. In the same article, the author states that South Africa has been able to create many effective IT companies. These IT companies bring about new jobs and consequently an improvement in the economic life style of the people. These companies are: Ariel Technologies, Dimension Data, Johnnic, Ixchange, Mc Carthy's, Nedbank and Super Group (Moodley, p. 29).

CHALLENGES IN USING THE INTERNET FOR ECONOMIC DEVELOPMENT IN SOUTH AFRICA

The challenges for using the Internet for development in South Africa are not entirely divorced from those challenges that confront sub-Saharan Africa as a whole. Conradie and Jacobs (2003) have outlined six challenges that South Africa is facing. The first of these challenges is striking a balance between technology and the need for local development. Like most African countries, South Africa faces the challenge of bringing ICT to the rural areas. The need to satisfy the exigencies of the local indigenes and at the same time develop other sectors of the economy that do not warrant technology is one of the main tasks that the country is facing. One of the major set back for technology is consulting with local chiefs and councilors and making them see the need for Internet in their area. Conradie et al (2003) argue that since technology is coming from outside, it does not address the local problems. Some of these local problems involve literacy in technology. The number of Internet illiteracy in South Africa is alarming given the fact that educational quest for most of them in the past had been sacrificed in the fight for liberation. Now that another new education (Internet communication) is coming to the fore front, there has to be

adequate infrastructure within the rural setting itself to educate the people on how to use the technology. Another problem that the country is facing is long cues to the Internet cafes that are formed in the rural areas. The number of people willing to have access outweighs the number of computers that are at their disposal. Akhtar and Laviolette (quoted in Hall, 1998) makes this assertion about Africa's problems and the Internet:

Africa's information infrastructure is by far least developed in the world. Technical statistics consistently show that Africans have the smallest number of telephone lines per capita, the most restricted access to computer equipment, the most primitive information networks, and the most inaccessible media systems. (p.2)

This assertion was made in a briefing before the United Nations Economic Commission for Africa in 1995. Almost ten years ago, it is quite difficult to state with certainty whether the entire continent of Africa has bridged that gap. Lovink and Riemens (1996) have outlined one of the many hurdles that Africa is facing. They emphasize that America through NAFTA is linking herself with the South American continents; Japan is integrating with the 'great-Asian commonwealth while the European Union is moving away from the Atlantic. Africa will then be left alone to face her own destiny. Since technology has to do with connectivity, it is only anybody's guess to chart the technological future of Africa.

The other challenge that South Africa is facing according to Conradie is the fact that "many rural areas in South Africa do not yet form part of the national electricity grid" (Conradie et al., 2003, p. 31). This is particularly an acute problem since technology and the Internet can only be very effective if it is generated by electricity. Africa in general and South Africa in particular must first ensure that the rural areas are electrified before investing on dial-up Internet technology. South Africa like most other sub-Saharan Africa countries equally faces another difficulty. Canessa, Postogna and Radicella (1999) have introduced another difficulty that is besetting the Internet business for development in Africa: The bandwidth for the limited telecommunication lines is causing congestion and making reception and transmission very slow. To optimize the use of the limited bandwidth seems to be the way out for such a problem. In his view about the role of Internet in facilitating development in Africa, Adam (1996) paints a very pessimistic picture of the African situation:

African connectivity problems are the result of peculiar socio-economic conditions in the region. Many nations continue to suffer from badly performing economies, high foreign debt, declining resources and social infrastructures, alarming population growth, increased dependency, degradation of the environment and other debilitating ailments. These have direct implication on the implementation of networking projects and the type of public policies that foster connectivity in Africa. (p. 1)

With these kinds of ailment plaguing the continent, there is the need for Africa to tackle the fundamental problems first before bringing in technology to help development, according to Adam.

There are still other problems associated with connectivity in Africa in general and South Africa in particular. These problems range from the issue of integrating the local languages into the system, varying and updating the contents of materials that are posted on the websites and most importantly, the question of security (Kamel and Weigler, 2001). One of the ways to bring most Africans to benefit from the new technology without falling prey to the digital divide syndrome is creating telecenters that would bring people together to meet in specifically designed areas to communicate with others at home and abroad. Senegal seems to be the leading country in Africa that is exploiting this initiative (Benjamin, 2000). These telecenters are found both in the urban as

well as in the rural. Almost all the remote corners of the country have telecenters supported by private companies. This initiative by Senegal could be interpreted as a way to promote democracy in the society. However, McCormick (2002) disagrees with the whole notion of using the Internet to promote democracy. She argues that the vast majority of Internet users in Africa are male and so the question of promoting democracy through the Internet is misleading.

Though the challenges for using the Internet for development in Africa abound, other scholars have seen some burgeoning growth with respect to the use of the Internet. In spite of the rather bleak picture on the future of the Internet, De Beer (2001) has seen the positive effect of governmental input in bringing about social change through the Internet in South Africa. The government subsidized the Personal Information Terminal (PIT) introduced by the ministry of Communication and promoted the setting up of the media development and diversity agency (MDDA) charged with training expertise with new technological skills, to help educate the grassroot population. The result of that endeavor will, in the near future, yield dividend because:

The MDDA will support projects that enable media to promote democratic and socio-economic rights through their operations and/or content, such that the public and communities are empowered to actively participate in development. This would include, for example, promoting race and gender equality, education, health care, improved basic services, job creation and environmental awareness. (p.149)

This is indicative of the fact that a new technological face lift for South Africa is in the offing. The key challenge is spreading this new skill to the rural masses so that in the long run the gap between the literate and the illiterate is narrowed.

In a study by Faux, (2005), he states that Africa does not need to go through the industrial stages that Europe went through in order to be economically self-sufficient. Africa, according to him can make a leap into the superhighway technology and gain fast economic growth. I disagree with this view because Africa is still experiencing economic slow growth. The slow pace of economic growth in the continent is blamed on national leaders who still carry neo-colonial mentality. Meaningful development they believe, should still be top-down. The North should still design and implement developmental programs in the continent. However, this implementation, most times, are marred by inefficiencies and corruption as profits are diverted into private banks accounts in Europe. It is fallacy of economic leap into the super highway by Africa without experiencing the slow and hard industrial hardship of Europe in the 1830s that is plaguing Africa's economic growth. William Zartman (1976) shared this view with me when he argued in his article "Europe and Africa: decolonization or dependency" that "... the metropolitan countries block African development by co-opting African leaders into an international social structure that serves the world capitalist economy" (p. 326).

ASSESSMENT OF RESEARCH TO DATE

One of the main findings for this paper has been the positive as well as the negative contributions of the Internet in bringing about developmental changes in South Africa. The study by Laviolette and Aktar (1998) that sub Saharan Africa has the most inaccessible media systems in the world has further complicated the issue of looking up to technology as the solution to Africa's economic, social and political developments. Their argument too, that telephone lines per capita in Africa is the lowest in the world has again painted a bleak picture of the role of the Internet as a force to foster development. This is because the Internet system that can be cheap for everyone to afford in Africa can only be the dial-up. Cable modem and broadband could be very expensive to manage in a system where government subsidies for improving the media systems are hard to come by.

Another significant finding for this paper has been the research work done by Lovink and Riemens (1996). Their study about the unions of the Americas under the NAFTA treaty, the Japanese and the Asian treaties and the European countries getting together to form a bloc has further aggravated the African connectivity problems. The fact that these countries are getting together to mutually link with each other is very helpful for development. They may have to share one spectrum and maybe one media policy. This could help reduce individual subscription rates thereby reducing the gap of digital divide. When Africa is compartmentalized and working in isolation there is every reason to suppose that it will be expensive for individuals to get connected to the Internet so as to communicate easily, buy and sell goods and services on-line, advertise on-line, and debate online. This finding also shows the hard and difficult road that the continent has to trudge.

Adams (1996) has pointed out another problem that Africa must wrestle with in order to smoothly use the Internet as a tool for development. She suggests that if Africa could first of all tackle the fundamental problems of debt and declining resources, then it is on the right track to using the Internet. In as much I share the view of resolving Africa's debt crisis, I hesitate to agree with Adams that Africa should wait to tackle this endless struggle with debt crisis and rescheduling with the Britton Woods before bringing technological development to children in public schools, universities and government. The issue of Africa's debt burden can be overcome by equitable distribution of scarce human resources like oil wealth. Nigeria is presently undergoing an oil crisis because the people who are the primary beneficiary of the wealth like in the people of the Niger Delta are being sidelined and the oil companies and government officials are looting the wealth. The same situation pertains in South Africa as DeBeers and Oppenheimer are still monopolizing the diamond production and "to protect their earnings from Africa, these companies branched out and "globalized" their tentacles, long before the word " globalization had even been invented" (Cameron, 2000, p. 30). But a more important finding has been that of Kamel and Wiegler (2001). They have looked at another issue concerning digital divide. To them, digital divide does not only mean the absence of access or the lack of it. Rather, digital divide has primarily to do with the lack of local languages being introduced or integrated in the Internet. This can cause a significant setback to a population like that of Africa that have numerous indigenous languages and most of these languages are not French or English. The absence of African languages in the pool of Internet integrated languages of operation has greatly affected the way the populace can use it for communicative and developmental purposes.

One major hurdle that South Africa is facing on this issue of technology and economic growth is whether the overall Growth Domestic Product (GDP) of the country would be positively or negatively affected as a result of the emergence of ICTs. One scholar who has expressed this fear about the South African situation is Benner (2003). In his article " Digital Development and the Disruption in South Africa: Balancing Growth and Equity in National ICT Policies", he outlines some of the dilemmas of ICTs in South Africa:

There are two issues of concern here. The first issue is the question of the relationship between information technology and job creation and job destruction. The debate often gets framed in terms of whether technology is creating jobs by improving productivity and stimulating overall demand, or whether it is eliminating jobs by replacing workers with machines and automated production process. (p. 4)

The question that will arise given this situation is that technology has brought hope as well as despair. Hope in the sense that many foreign companies would be able to invest in South Africa. In the long run, the people would have to learn new skills and work as labor forces in the companies that need their technological know-how. However, that situation is still very fluid because as Benner's article suggests, machines are fast taking the role of humans in most

organizations. A good example is the digital boarding systems at the airports. It is becoming increasingly evident that in the long run manpower would not be needed to run the airport checking counters the world over. This is a kind of low-income job that does not warrant excessive literacy. But if the machines were going to do the job what would happen to the labor force? They would have to relocate. In a country like South Africa that just had a black president in 1990, it is going to take a long time before the majority black labor force in the country become dynamic with multiple skills. Thus, one can easily say that technology has not entirely resolved the economic problems of South Africa. There are still challenges that lie ahead.

Other significant findings of this paper are the issue of imports and exports of software and hardware that can effectively run the ICT systems. In fact, according to Benner (2003), South Africa is still a dependent nation as opposed a self-sustaining one. If South Africa has to be the shining light to the rest of Africa especially in the field of ICT as been the case now, then something has to be done to reduce her level of dependency on the West. Globalization has come to impose certain burden on the local industries to abide by what obtains in the entire world without taking cognizance of the fact that there are uniqueness that has to be addressed with respect to individual nations and continents. Now that Africa is embracing globalization, it has to sacrifice internal growth. The growing rate of imports of western goods is damaging the rapid expansion of local produce. This is why Benner (2003) cautions that:

*while South Africa has world-class technology development and infrastructure in certain sectors of the ICT industry, there are structural distortions that heighten technological dependency and limit growth opportunities. Within the computer hardware industry, for instance, imports are high and local production is primarily limited to final assembly. **There is essentially no local hardware component manufacture of any significance.** (emphasis added) (p. 7)*

This is what creates a worrisome situation. Instead of depending on the West for the manufacture of the software and hardware, South Africa could develop her own manufacture industry with the support of the West and in that case, the rest of Africa can then import relatively cheap software and hardware from South Africa through a free market system that enable free movements of goods and services. The telecommunication regulatory policies in South Africa have been liberalized in a way that exports of communication services are encouraged. Presently, South Africa's phone company MTN has expended its services to some African countries including Cameroon. With this gesture, Hodge (2000) sees hope in the horizon. He maintains that "so far all network operators are expanding into African markets, with MTN the most significant player" (p.378). With this, African telecommunication markets would no longer be dependent on the West. Another significant factor about South Africa's telecommunication policy is that it had signed the WTO telecommunication agreement on commitment to market liberalization (Hodge, 2000). These are positive insights to job creation and efficient productivity for the South Africa and the continent of Africa.

Lastly, among all the rather negative findings about the use of the Internet in bringing about social change in Africa in general and South Africa in particular, there has been a positive finding in the work of De Beers (2001). He has found the great role the Internet plays in changing lives and moving the community forward in South Africa through the MMDA. This media agency trains grassroots personnel as experts who should go about teaching the grassroots members how to use the Internet. This is the key to introducing the Internet to the people who are still getting use to western style technology.

CONCLUSION

From the findings above, it can be seen that Africa is still lacking behind in superhighway technology. Even though there is some glimmer of hope in the horizon with the example of South Africa, Senegal in the sub-Saharan region of Africa and almost all the Northern countries like Egypt, Tunisia, Morocco and Libya, there are still inherent problems with respect to the Internet. The Internet enjoys greater utility in the western countries due in part to the increase subscription rates. Almost all households have telephone lines and many users have the wireless personal communication services like cellular phones, palm pilots, laptop computers that can easily be connected to the Internet. These gadgets are also present in most African countries, but the cost of purchasing and maintaining them is a lot more expensive for them when compared to situations in the West. This is one of the reasons why the Internet is going to take a while before becoming a vital communicative medium in Africa.

For the purpose of economic development in terms of creating telecenters for Africa's goods and services, there are advantages as well as disadvantages. The advantage of using the Internet to sell Africa's goods is that turnover rates will rapidly increase. Most buyers who love certain ethnic items in Africa but who are living in Europe can just go online and purchase them and have them delivered right home within a short period of time. The only problem lies with transportation and security. With the low accountability, breakdown in communication and poor quality or poor products that Africa is certainly being confronted with, it becomes difficult to achieve the dream of technological revolution. The same argument can be applied to the study by Faux (2005). He claims that Africa does not need to pass through the needle of industrialization like Europe but actually experience a leap to gaining developmental growth through technology. The question is how that is possible when fundamental issues of economic, social and political backwardness still haunt the continent? Bribery and corruption remain the cankerworm that impedes development in the continent. Authorities in Africa have allowed lawlessness and lack of accountability by public officials to go unchecked. The case of Mumbutu Sese Seko of former Zaire and Sani Abacha of Nigeria who siphoned their countries wealth with impunity are cases in point. Numerous cases of this nature are still abounds in the continent. Adjibolosoo (2005) corroborates my point when he states that "scholars of development theory often suggest that African countries (ACs) are unable to achieve real progress because there are too many incidents of embezzlement, bribery and corruption" (p. 91). How can technology progress be possible when the infrastructures that go along with Internet like basic telephone lines are still a distant dream to a vast majority of Africans? For technology like the Internet to gain a foothold in the African continent, Africa needs to resolve the problems of bureaucracy, dictatorship, economic stagnations, war, literacy crisis and cultural importations. The western powers need to stop manipulating Africa as an ancillary continent that must succumb to western models of modernity. Africa's cultural, economic and social worth ought to be recognized as vital for her development. This is why other scholars have proposed alternative model for Africa when foreign models fail to reconcile with existing structures. The development communication model by Melkote, (2000) could be implemented in Africa. He proposed a participatory communication development model which entails bilateral interchange of knowledge. "Participatory decision making required knowledge sharing between the "experts" and the "beneficiaries" of development projects" (p.41).

Endnotes

¹ An internet service provider (ISP)

² A system of governance that separated whites from blacks.

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