INFORMATION AND COMMUNICATION TECHNOLOGIES: TOOLS FOR DEVELOPMENT. WHAT ARE THE BENEFITS AND CHALLENGES FOR THE AFRICAN INFORMATION SOCIETY?

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Without an enlightened and active population, democracy cannot exist. And without free access to information, a population will neither be enlightened nor motivated to active involvement in the development of democratic societies. (Damm 2000)

Abstract

The article looks at Information Communication Technologies (ICTs), as being the probable answer to the problems associated with access to and use of information in the African context. It defines ICTs and demystifies the misconception that the term ICTs refers to computers and Internet only, the view that is believed to have rendered ICTs a not very urgent issue. ICTs are important as they enhance access to information, which is essential in any quest for development. The article also looks at the strengths of ICTs in accessing information. It then turns to the challenges of ICTs in an African setting, for example, training and the general acceptance of ICTs in a society with sections that are largely computer illiterate and too poor to purchase modern ICTs, a situation made worse by the hyper-inflationary Zimbabwean economy.

Of concern in most African countries is the issue of the National ICT Policy. The article also highlights the issue, what should be part of the policy and looking at what other countries have included in their draft policies. The Zimbabwean Government has embarked on an extensive rural electrification programme. The article centres on this programme and the advantages it has brought to education and research. In conclusion, the article takes a position on whether ICTs are the much-anticipated tool for change and whether they are practical in an African rural setting or not. Recommendations are also brought forward with regards to what the National ICT Policy should address, such as training, and issues that can be tackled to make the society accept ICTs as a tool to eliminate poverty, human rights abuse and rectify gender disparity.

Keywords: Access to Information, African Information Society System, Information Communication Technologies

Introduction

The importance of information in the process of national development remains unquestionable. This is despite the fact that access to information in many

developing countries is still a privilege of the chosen few. Access to and use of information should, therefore, be enhanced with no boundaries attached, not based on riches or other disadvantaging factors. Information and Communication Technologies (ICTs) aim towards achieving such an enhancement, and should be utilised for the benefit of all in society.

ICTs defined

ICTs can be taken as "electricity-based means of seeking, communicating, storing, accessing, manipulating and sending information, e.g. radio, telephone, television, the Internet and computers" (Sayed 2003:2). Marker, McNamara and Wallace (2002:4) also argue,

> ICTs are defined as technologies that facilitate communication, the processing and transmission of information by electronic means. This definition encompasses the full range of ICTs from radio and television to telephones (fixed and mobile) as well as computers and the Internet.

The Common Market for Eastern and Southern Africa (COMESA) defines ICTs as "technologies, including computers, telecommunications and audio-visual systems that enable the collection, processing, transportation and delivery of information and communications services to users" (COMESA 2005).

According to Powell (2003:204), "the term 'information communication technology' covers a range of technologies – computers, communications, audio, and video – which developed separately but which have now converged towards the point where the technologies that support computers, telephones, and televisions are highly interconnected."

It is, therefore, important, here, to demystify the misconception by many that ICTs refer to Internet and computers only and clearly state that these (computers and the Internet) are taken as modern ICTs and the radios, telephones, faxes and televisions are traditional ICTs. There has been a tendency of taking the term as referring to the modern ICTs only, thus leaving out the traditional ones. This has also made those with little or no knowledge of using computers and the Internet see these modern ICTs as discriminatory and of no relevance to their specific situation.

ICTs and African society

A number of factors affect access to ICTs in an African society. Adam (n. d) sums these up as including:

- Low level of ICT literacy,
- Lack of skills to sift through the wide array of information,
- Inadequate capacity to publish information,
- Limited availability of content relevant to the problem at hand, and
- Cultural and linguistic barriers.

The most important step to take in order to realise the fruits of ICT in an African setting is the ability to accept their presence and potential and being able to integrate them. It is imperative that society accepts and integrates these technologies, giving them the credibility they deserve, just like any other initiative that has a development potential.

However, it is very difficult for rural populations to accept these ICTs without a thorough advocacy programme from ICT advocates and government. This is mainly because the ICT concept is not an African native concept, and therefore, it is very natural to find it difficult to integrate a foreign concept into an African society. This is especially in the wake of such foreign policies that ordinary African citizens view as having brought more suffering than good; policies such as the Economic Structural Adjustment Programme (ESAP).

The other reason why it seems very difficult to integrate modern ICTs into an African society is that people do not view them as urgent needs. It is argued,

> the world's poor are more concerned about having enough to eat and worry little about email or surfing the web. They argue that support for Information and Communication Technologies should not be at the expense of basic needs (Chege 2003:1).

Other governments in Africa see ICTs provision as being secondary. Their views were made known at the World Summit on the Information Society (WSIS) held in Geneva, Switzerland, from 10-12 December 2003. Munjoma (2004:8) argues, "President Robert Mugabe of Zimbabwe said while ICTs can be used as a tool for development, his priority would be to put food on the table and provide shelter." These sentiments were also shared by the Nigerian leader, President Olusegun Obasanjo, who, speaking at the same summit, hinted that it is very difficult for African governments to come up with mechanisms of how to share Africa's meagre resources between these basic necessities and ICT infrastructure provision.

Local versus foreign language

A large portion of Africans in rural areas is believed to be illiterate. This also acts as a barrier to the access to and use of ICTs and ultimately of information itself. Heeks (1999:7-8) quotes the UNDP as arguing, "more than half of the low-income countries' population is illiterate, with a far greater proportion unable to read English, the language that dominates information."

On a positive note, though, Botswana's automated teller machines (ATMs) employ both English and vernacular Setswana as operational languages. The Internet search engine Google, also has a Google Kiswahili site, among others, that assists researchers to search materials on the web in that language. [1] The foreign versus indigenous language struggle shows that local languages are prevailing over foreign languages especially in rural Africa. Another example of

where a local language has been used and enabled acceptance of ICTs in an African society is in Uganda where rural women in the country are using a locally developed CD-ROM. The materials were produced in the foreign language, English, but were later translated into vernacular language. It is argued that this personalised the CD-ROM and women were very happy to have an ICT application in their local language. This enabled easier adoption of the application (Mijumbi 2002:7).

Why ICTs?

ICTs, although they face problems of integration in a highly illiterate and conservative society in the mould of a rural African one, they bring with them a number of benefits. Zunguze (2004) sums these up when she argues, “ICTs reach many people, have a wide geographical coverage and are efficient in terms of time and cost.” This is advantageous as compared to a scenario where only a newspapers are used to convey information in that the newspapers may not be able to reach areas that are inaccessible by road before the information becomes stale, whereas either a radio or the Internet can convey the information in a matter of seconds or minutes depending on transmission and bandwidth.

ICTs are very important for the conveyance of information in society and this has gained them reference to as ‘tools for development’. It is argued that they “may therefore have a greater role to play in giving ‘voice’ to the poor; that is in making the poor information providers more than information recipients.”(Heeks 1999:1) There is generally a tendency of taking the poor as ‘voiceless’ in society, and ICTs are seen as tools that can be used to give voice to these ‘voiceless’ and help uplift the lives of the poor in society.

These technologies can be used in every business sector and they are a most welcomed development especially in the health sector. Health practitioners use ICTs to search for updated information on diseases and medication and discussion lists can be employed to discuss current developments in the health field and approaches that can be employed to tackle unfamiliar diseases.

The Intermediate Technology Development Group (ITDG) is of the view that “ICTs can provide access to information which can in turn create earning opportunities, improve access to basic services, increase the impact of education and health interventions, and give the poor a voice to demand government support and reforms.” This shows that ICTs can bring a positive impact to the lives of African societies.

Education can also benefit from the ICT revolution. Brown (2001) asserts that “through ICTs, curricula can be developed collaboratively, and educational materials can be distributed and updated cheaply.” During one of his computer donating ceremonies at Silobela Secondary School in the Midlands Province, Zimbabwe’s President Mugabe said he hoped that the computers would

“enhance the teaching process at the schools as they can be used to source information for learning and research purposes” (President bemoans 2005:2).

SADC [2] puts the literacy rate for Zimbabwe at 87,8% as obtained from a 1999 Labour Force Survey and it shows the dividends of government investment and policy in the education sector since independence. This should also be the case with ICTs, and the government should try and invest heavily in the new technologies and these will bring a number of benefits to the country.

Television and video also try to offer alternatives to the illiterate, especially in the farming sector in African rural areas. It is argued that video makes it possible to visually demonstrate new farming ideas and techniques and in a way overcome the barriers of illiteracy. This can come in handy especially in Zimbabwe where the government has embarked on a land resettlement programme since 2000.

Libraries and information dissemination organisations can also use ICTs to their advantage by uploading their databases on the Internet, which will enable external researchers to access the databases and some full-text materials online without having to physically visit the libraries. The University of Zimbabwe library’s web page shows that people can be able to search for certain online resources from anywhere as long as they have access to the Internet (University of Zimbabwe 2004).

Civil society can use ICTs to their benefit especially in advocacy and information dissemination work. “ICTs are being used for information production and dissemination, campaigning including new forms of electronically assisted activism, internal communication and more importantly for collaboration with their counterparts elsewhere including international and regional organizations and their clientele” (Adam n. d.).

ICTs disrespect physical boundaries unlike other means of conveying information. With the use of email and Internet, messages can be sent abroad efficiently and cost effectively whereas it is usually difficult, expensive and time consuming to send some of the messages if one decides to use some of the conventional means.

However, there is a danger of believing that ICTs can perform wonders and bring change of fortunes to poor societies overnight:

> This ‘leapfrogging’ thesis asserts that developing countries can bypass the initial stages of development and it may even be beneficial for developing countries to enter the information age late(r) and so avoid the expensive teething problems of earlier stages (Sayed 2003:1).

It is important, therefore, to bear in mind that the development process is transitional and can take time to materialise or mature and societies should try not to out-jump some of the development stages.

ICTs: maybe not now?

The advantages of ICTs have been well documented, but the challenges they face have been downplayed for a long time. Some societies that might have adopted ICTs without looking at the challenges they pose, have encountered some difficulties. This can be illustrated in the following example in South Africa where,

> in 1995, a project was begun by the Office of the Premier in North West Province to provide information to six rural communities through touch-screen computer kiosks…This did not meet community needs .... The project was scrapped in 1997 (Heeks 1999:11).

This, maybe, is because they did not weigh the challenges and opportunities of ICTs in that particular setting and whether they were ready for ICT integration or not. The other reason may be that they thought that ICTs were bringing instant solutions to problems they were facing such as poverty, which turned out not to be the case.

Although ICTs, as tools for development, are sometimes perceived as enhancers of the quest to bridge the digital divide, it is also argued that they are in some ways assisting in widening the gap between the poor and the rich. Sayed (2003:1) argues that within nations, a gap is emerging between the elite with access to information technology and the poor without it. Panos, quoted by Heeks (1999:7) also supports this by saying, “New communications technologies are revolutionising access to information – but the revolution is likely to reach everyone but the poor.”

This argument is based on the logic that one who has access to ICTs receives imminent advancement as a result of the information they access and use to their advantage, and one who lacks that access is restricted to stagnation, thereby widening the difference between these two extremes.

It is also argued in the status report on ICTs in Africa that the divide between urban and rural areas is even greater as most of the ICT services and users are urban-centred, while the majority of Africans are scattered in small communities spread-out across the vast rural areas where irregular or non-existent supplies are prevalent and are a major barrier to the use of the ICTs (Jensen 2002).

ICTs can also be taken as discriminative. They “divide along fault lines of age, disability, religion, gender, connection to political power, wealth, employment, health and literacy,” and linguistic and cultural diversity (Adam n. d.). This then, to some extent, discriminates against people falling into one or more of the aforementioned categories when it comes to access to and use of information in Africa.

Most modern ICTs are used to ‘dump’ Western and Northern propaganda on the

poor East and South. This is a great disadvantage in that "the web, for instance, mainly provides the information-thirsty poor with a flood of 'noise': digitised Western irrelevance" (Heeks 1999:10). However, in a way to do away with such irrelevant information, ICTs can be employed to create and disseminate information about the poor from the poor themselves, thus as mentioned earlier, "making the poor information providers more than information recipients."

The advent of ICTs has also brought with it a lot of job losses, as the manual job that was being done by a number of people can now be done by only one person operating a computer. Heeks (1999:14) argues, "as well as reducing costs and improving processing and communication, ICTs have also been associated in some cases with negative impacts. These have included job losses, increased stress, reduced flexibility, centralised control and surveillance and impoverished communications."

The other disadvantaging factor that can be used against ICTs and to argue that they are not an urgent need to African society is that ICTs are expensive and many people cannot afford them. Zunguze (2004) argues, "The other challenges affecting everybody nowadays include the high cost of purchasing a cell-phone and the corresponding line that are beyond the reach of the ordinary person." This discriminates along purse lines as those without the money to purchase these cell-phones are denied the opportunity to communicate with others in society using these efficient but costly ICTs.

However, in a bid to ensure that access to ICTs is not a privilege of the rich, some corporate institutions are assisting poor areas to access, use and assess the importance of ICTs in their societies. ITDG's New Technologies programme aims to "enable poor people to assess and respond to the challenges of new technologies, and to develop and adopt applications that improve their livelihoods" (ITDG 2005).

Discrediting ICTs: is it justified?

ICTs might be having a barrage of disadvantages pin-pointed against them, but totally discrediting them in an African society is doing injustice to a potential transformer of an impoverished society. For this to be achieved, society should learn not to take ICTs as bringing eradication of poverty, achieving gender equality and wiping away racism and other human rights abuses overnight, but take them as tools that can be employed to achieve these over time by providing information to all stakeholders when it is needed and in the right format.

This issue of ICTs is a journey and not an end in itself. McCullough (2004:9) is of the view that "technology is not the answer to the problems of development and health – it is a tool that needs to be integrated into what people already do and into existing work flows." ICTs can be used to complement policies and practices in place already to address more pressing issues, such as poverty, HIV and

AIDS, discrimination, whether by gender or by race, and food insecurity.

ICTs: 'The take it or leave it, no compromise attitude'

With the way ICTs have been portrayed, especially by developed nations, and with the way it has been made clear that people either have to be part of the global village or be left out, it has now become a question of compromise or no compromise. Now that ICTs are there, they should be utilised but should be applied in an appropriate manner. This also entails training the people on how to use the ICTs and obtain optimum results.

In the event that society decides to delay the implementation of ICTs, or in cases where there is unequal access to ICTs, the affected society is likely to lag behind in development. Samiullah and Rao (2002:1) argue that differential access to and unequal ability to use ICTs could make developing countries even less competitive in the global economy, exacerbate inequality within countries and deprive the poor of opportunities to improve their lives. This then makes it important for each and every society to be able to access ICTs and consequently the right information at the right time.

Zimbabwe's Rural Electrification Programme

The Zimbabwean government has embarked on a rural electrification programme that has seen a number of rural schools and growth points being electrified. This is a step in the right direction in the sense that it will also enable access to and use of 'electricity-based tools' of information dissemination such as computers.

The country's President has also been donating computers to schools and institutions of higher learning concentrating mainly on the rural areas. This, although it was sometimes taken as a campaign gimmick from the ruling party, ZANU PF, readying for the parliamentary elections (held 31st March 2005), it is important in that it will eventually, dependent on the availability of all the essentials, improve access to ICTs and train the country's future workforce.

Zimbabwe is a signatory to the Southern African Development Community (SADC) Declaration on Information and Communication Technologies. Therefore, it has to put much effort in trying to ensure access to ICTs to its citizenry.

ICT Policy

If society is to realise fully the benefits of access to and use of ICTs and information, there has to be a policy that governs that access. Mijumbi (2002:2) brings up the importance of an ICT policy when she asserts,

> the Government of Uganda recently drafted a National Information and Communication Policy Framework to address how Uganda should

> promote the growth and potential of ICTs in the country … The policy's main goal is to promote the development and effective utilization of ICTs such that quantifiable impact is achieved throughout the country within the next 10 years.

ICT policies are important in every society. ICTs "have become essential tools for development and the degree of access to ICT, as well as affordability of access, is largely determined by policy decisions taken at the national, regional and international levels" (APC 2003).

The Association for Progressive Communications, APC, which runs the Africa ICT Policy Monitor, argues "Two sets of issues in ICT policy are critical to civil society at the moment: access (to ICTs) and civil liberties." Civil liberties cover freedom of expression (and association), the right to privacy, the right to communicate and intellectual property rights. These are essential issues and should be addressed in national, regional and/or international ICT policy, which gender activists also argue that it should be engendered.

A policy is important in that it governs how ICTs are going to be accessed, what should be done and achieved, and as in the case of Uganda, the time frame (10 years) that should be used to gauge progress. In Zimbabwe, there is a National Information and Communication Technology Project team that "aims to create a sustainable knowledge society/economy in Zimbabwe through the effective use of Information and Communication Technologies (ICTs) by developing a holistic and coherent National ICT strategy".

The Zimbabwean draft policy is however argued to be facing challenges owing to the lack of harmonisation between the ministries in charge of the sector, and the draft policy will have to wait for the telecommunications and postal policies to be reviewed before it can be launched (Ndlovu 2005). These legislations are due to be reviewed in 2005.

ICT policies are also formulated as a way of blocking the dangers posed by the digital divide. The Tanzanian government, after realising that there are these dangers, and noting that they should act as a matter of urgency, "put in place a policy framework through which coordinating mechanisms and harmonized strategies might be nurtured" (Tanzania Ministry of Communications and Transport 2003:1). This policy has two broad objectives. These are:

- To provide a national framework, that will enable ICT to continue towards achieving national development goals, and
- To transform Tanzania into a knowledge-based society through the application of ICT. (Tanzania Ministry of Communications and Transport; 2003:9)

Lesotho's Ministry of Communications, Science and Technology has already come up with a draft ICT policy that is also supposed to ignite discussions

towards pertinent issues concerning ICTs. It is argued that an ICT policy "is needed to provide guidance to lawmakers in the review of existing laws and regulations and requisite changes, as well as in the development of new legal instruments to support the transition to an information economy" (Lesotho's Ministry of Communications, Science and Technology 2004:10).

ICTs policies can be institutional, national, regional or international specific. Institutions of higher learning such as the Makerere University (2004) in Uganda have an ICT policy that is specific to the institution only. The COMESA (2005) also has its own ICT Policy that governs its member countries.

There is also a need for national ICT policies to be integrated into regional and international policies. SADC undertook to develop "a regional policy on ICT to assist with harmonisation of national policies and legislation." (SADC 2001:5). This is important because it will encourage cooperation between governments in the region especially where the importing and exporting of ICT infrastructure is concerned.

Improving access to ICTs: what should be done?

The SADC recognises the importance of ICTs in developing the region and linking it up with the rest of the world. SADC's Heads of State and Government, on 14 August 2001, signed a declaration in Malawi in which they undertook:

> to continue to sustain efforts … in removing trade barriers and reducing ICT related taxes and tariffs; this will reduce the costs of ICT equipment through decreased taxation of imported equipment, in compliance with the ongoing SADC Trade Protocol and World Trade Organisation processes to enable e-commerce-readiness (SADC 2001:4).

A government that adopts ICTs should also endeavour to train its citizens so as to enable them to fully utilise the technologies. "ICTs require that users have some skills. Skills training is a critical factor to ensure that a country is prepared to utilize the technology and increase productivity" (Zunguze 2004). McCullough (2004:9) also argues, "the best investment is in people – their education, training and skills development so they can harness the potential of IT". It is, therefore, folly for a policy-making body to leave out the issue of training from the ICT policy framework.

There are also a number of things that can be done in order to improve access to ICTs in an African society. These issues should also be raised in the National ICT Policy that should be crafted in consultation with all the stakeholders including the ordinary people who should contribute on what they expect of the technologies. For countries to realise the full benefits of ICTs, the following should be done:

- Training the people to have basic operating and accessing skills
- Improving the quality of education in schools where tomorrow's leaders

come from
- Contribution of the corporate world in improving access to and use of ICTs in rural areas
- ICT marketing or promotion
- Waiving taxes when importing ICT infrastructure

Regional, continental and international bodies should also embrace ICTs so as to ensure that Africa is able to access and use them. The New Partnership for Africa's Development (NEPAD) has taken a stand and welcomed ICTs. "For ICT to take firm root on the continent, the project cited the need to establish a regional ICT Think Tank and continental regulatory associations to harmonise Africa's regulatory framework" (Badaru 2005).

Conclusion

In conclusion, it can be noted that ICTs are taken as important tools for Africa's development, and should not be taken as tools that can bring instant but gradual change to Africa's fortune. They have a lot of advantages, but they need support from the government, public and private sector and from the ordinary citizens who are themselves going to be frequent users of the technologies. Formulation of ICT policies should also be taken seriously and as a matter of urgency. It is also important for governments to open the technology field wider so as to accommodate more, although it is also important that laws be enacted so that the players can conform to the boundaries drawn by such legislations.

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Endnotes

1. See http://www.google.com/intl/sw/ for more on customised African languages such as Afrikaans, Somali, Xhosa, Sesotho and Zulu and please visit http://www.google.com/language_tools?hl=en. There are also some websites such as http://www.isizulu.net and http://www.africanvoices.co.za that strive to promote the learning of African languages over the Internet. This would also enable the learners to access information that is available on the Internet in indigenous languages.
2. For more on SADC Member States Information, please visit http://www.sadc.int/index.php?action=a1001&page_id=member_states (Accessed 04 April 2005).