

Information and Communication Technologies (ICT) are increasingly penetrating all social and economic activities of any society

By Timothy Kasonde Kasolo
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Information and Communication Technologies (ICT) are increasingly penetrating all social and economic activities of any society. ICT is a generic name that is used to express the convergence of telecommunications, computer science, broadcasting, postal and information services in the delivery of social and economic services and products.

The advances in ICTs, telecommunication industry and the convergence with computing and broadcasting technologies have made it much easier and faster to process, distribute or access diverse information resources. The way information is now disseminated through the Internet has fundamentally altered how societies organise and govern themselves and conducts commerce and trade.

ICT is a high stakes game that involves all sectors of society, comprising many stakeholders. It is complex and multifaceted. But looking at the ICT policy strategies in Africa is often made a result of concern for issues; so the starting point is a specific problem or situation faced by a civil society organization aiming to improve life in poor areas, or someone trying to start a business, or a politician or government bureaucrat looking for better ways to deliver service. With facts like above, African countries need to have an ICT policy in place to achieve social and economic development.

In February 2005, there were only 28 countries in Africa with an ICT policy, 10 countries in Africa did not have an ICT policy and 15 countries are in the process of developing an ICT policy. But towards achieving a good ICT policy document there are processes involved and these include consultation, drafting, formulation and implementation. One needs to understand what an ICT policy is.

Firstly a policy is a set of principles or a broad course of action that guides the behaviour of governments, organizations, corporations and individuals. It bridges the gap between the vision of where we want to be and the plans that enable us to get there. For governments, policy is a tool to promote national vision and the basis for the legislation and regulation through which it is implemented.

According to Mr Milner Makuni an ICT consultant based in Lusaka, Zambia, any ICT policy needs to be approved by government for it to serve its purpose.

"Like in Zambia we have an ICT policy and the next stage is implementation (which has already started) that ensures that policy issues are converted into strategies. ICT is dynamic and some implementation issues were being done alongside the policy formulation," Makuni said.

In my own view National ICT policy exploits ICTs to further national economic and social goals. It matches the economic and social environment in which it is to be implemented. ICT policies differ from country to country depending upon national priorities, the country's level of development, and the extent of ICT infrastructure, geography and demographics and the extent of regional integration. Some common principles guide all good ICT policies.

According to United Nations (UN) Secretary General, Kofi Anan in November 2001, "The new technologies that are changing our world are not a panacea or a magic bullet. But they are without doubt enormously powerful tools for development. They create jobs. They are transforming education, healthcare, commerce, politics and more. They can help in the delivery of humanitarian assistance and even contribute to peace and security."

Indeed when I look at any country's ICT policy there is need for planning, involving all stakeholders, strategies for involvement, policy making process, consultation, formulation, drafting and implementation.

Why an ICT policy?

Any country that wants to develop or have an ICT Policy document needs to ask '*Why an ICT policy?*' This will provide a framework for understanding the how a particular an ICT industry of any country has been operating.

My understanding of ICT policy issues for any country is that an ICT policy document *is a must have for any country* in order to overcome the political infighting, turf battles and bureaucratic resistance. There is also need to strike a balance in diffusion and adaptation of technologies between societies.

ICT policy as a productive force plays a role in making sure that developing countries have access to the latest technologies, bridging the digital both national and global. It also maintains regional harmonization and effective resource mobilization.

I feel that for the ICT policy process to be successful it has to be developed in close coordination with other sectors and in alignment with other national development plans but again priority areas needs to be addressed.

Some of the priority areas include infrastructure and access (Investment, rural services, universal service obligations), education and health, e-government, e-commerce, institutional and capacity building (policy, regulation and implementation).

Catherine Mwape a Mass Communication student from University of Zambia (UNZA) says the formulation, drafting and implementation of the ICT policy should cater for everyone and that includes government, civil society, and the media and by all players in the ICT sector.

Mwape emphasized on the media to understand the role of ICT policy in their countries. She added that broadcasters, newspaper and online publishers need to be encouraged to report on the ICTs.

"There are few Journalists in Zambia and in other African countries that do not know anything about ICTs or what are ICTs? That's why in the media there is specialisation so I would ask Universities and Colleges all over Africa to start teaching about ICTs. Our governments must also let the people on what is happening in the ICT sector especially when it comes to the ICT policy process looking at consultation, strategies to be used, policies, drafting, formulation and implementation," Mwape explained

Needs of ICT Policy and who Benefits?

It is obvious but worth repeating. Unless an ICT policy has clear benefits for as many of the citizens of any country as possible, it is hard to argue that ICT can make major developmental changes. At a practical level, if it doesn't work from this principle, it will not get the political "wings" it requires to fly.

The ICT policy benefits may be economic (a more competitive economy will produce more taxes to spend on social needs) or social (citizens will get better healthcare using telemedicine). The skill is to blend these together to produce benefits that all will enjoy, including benefits that specifically target or are developed for women, youth, the elderly, disadvantaged groups, or rural and poor populations.

An ICT policy needs to encourage as wide an ownership as possible - of the policy and the means for bringing it about. It needs to be against monopolies of ownership, whether through government or the private sector. It needs to encourage equity involvement from national investors and employees so that everyone has a stake in owning the benefits of ICT.

The process of making decisions on ICT policy needs to be clear to outsiders and the process of taking key decisions needs to be able to be justified. In particular, decisions about changes in ownership need to be taken in a transparent manner. This would signal an end to cronyism, where decisions are made behind closed doors and benefit only a narrow set of interests.

Where governments are elected freely and fairly, they are accountable to their voters and this accountability covers ICT policy. However the government needs to consult those affected by its ICT policy for two reasons. Firstly, at the best of times the government cannot be knowledgeable about everything it's responsible for and it needs to draw on external knowledge to strengthen its plans. Secondly, it needs to check its conclusions and proposals with those most likely to be affected by them. Without consultation, the three-way partnership between government, civil society (and the variety of organizations it consists of) and the private sector, is weakened.

Governments in Africa and their regulators need to stop trying to control everything. For example, the regulator of one African country was going to license cyber cafes and telecentres. Fortunately she spoke to colleagues in a neighbouring country who reported that, in their view, it was not necessary. Unnecessary or over-burdensome rules lead to people flouting the law. Policy and regulation should be used as a way of encouraging people to do things, not as a defensive measure to prevent things from occurring.

ICT policy should not just end up in the form of a document. All too often with policy processes, large numbers of people put an enormous amount of time and energy into talking about what needs to be done. At the end of this, the policy is often triumphantly announced and then quietly forgotten. Cynicism sets in amongst those outside government that put energy into bringing the policy into being. Some countries have written two or three ICT policies without any clear outcomes from the process. An ICT policy needs to have a small number of "actions" that are clearly identified (as well as those responsible for carrying them out) and the resources needed to implement them. The policy should be inclusive and must consider the impacts on different groups of the population, specific geographic areas, etc.

What does ICT policy cover?

ICT policy guides actions in three main areas and ensures coherence among them: Telecommunications, Broadcasting and The Internet.

Telecommunications is the transmission or reception of signs, signals, writing, images and sounds by wire, radio, optical or other electromagnetic systems. The telecommunications sector includes private businesses and public sector organizations that provide telecommunications services (telephone, Internet access), produce equipment (telephones, exchanges, modems etc), define and apply the rules that govern telecommunications operations (regulation), or use telecommunications services and products (consumer groups, interest groups, educators, health professionals etc).

Broadcasting is the use of radio technologies to send transmissions (programmes: news, public services, entertainment, sports) intended for direct reception by the general public. Transmissions include radio and television. Like telecommunications, the broadcasting sector includes public enterprises such as national and community radio and television as well as private companies. While twenty years ago most broadcasters knew their audiences and targeted their services and programmes locally or nationally, today's television and radio programming often has a regional or global reach.

The Internet is a collection of networks linked together using a common protocol - a global computer network achieved through the interconnection of smaller computer networks around the world. People, computers and information are linked together electronically by a common protocol or set of communication rules.

It should be evident now why telecommunications, broadcasting and the Internet all have to be dealt with not necessarily by a single policy but within a single policy framework. They all use the same infrastructure to transmit messages (copper cable, optical fibre, satellites) over

the radio spectrum and they can all deliver the same content (voice, data, text, pictures, video etc) to the same users.

The radio spectrum is a limited resource, which needs to be, managed in the national interest in a way those safeguards against the consolidation of ownership of content and the means to deliver it – with a consequent suppression of diversity and local voices. National development requires that communications infrastructure and services extend to the whole population wherever people are located within the country.

Policy dimensions

Again in my view if ICT policy is to stimulate broad-based development, it must address five inter-linked dimensions.

Getting the focus right: ICT as an enabler or as a sector? Countries need to make a basic decision with respect to their ICT policies: do they try to grow their own ICT sector to manufacture and market ICT products – which offer economic benefit that in the long term, can be used for social development? Or do they use ICTs to help progress on their development goals (poverty reduction, education, health etc) in the short term? While applying ICTs to speed development in other priority sectors is considered more likely to deliver development gains, most countries have opted for an approach that includes both enabling and ICT sector strategies but with different degrees of emphasis to respond to different national strengths and challenges.

Human capacity: If ICT programmes are to be sustainable, a critical mass of people has to know not only how to use technologies and applications but also how to maintain them and generate from them innovative solutions to local problems. Countries need to focus on training a core of professionals who can provide access to and maintain the ICT infrastructure (computers, computer software, communications networks) and adapt them to local needs. Countries also need to think about how to retain skilled technical staff in the country once they have been trained. ICT policies can “start small” to take advantage of existing skills and become more ambitious as human capacity expands.

Policy issues include: Where to concentrate resources – primary, secondary, tertiary levels, focus on high level technical skills or basic ICT literacy and funding options – for example a human resource levy on international investors.

Applications and content are the reasons for investing in ICT. Applications enable users to carry out functions: sending e-mails, producing documents, creating web pages, managing databases and keeping financial records. These are generic applications, which can be used by anyone. But applications can also be tailored to specific needs: e-government, e-education, e-health, and e-commerce, for example. The content delivered by applications must satisfy the needs of local markets and users and be presented in an understandable form – if necessary using local languages and graphics. Both human and financial resources are scarce in developing countries so ICT policy needs to give priority to key application areas for the achievement of national goals. If resources are spread too thin, even well designed policies and projects will not deliver results.

Policy issues that arise once people begin exchanging information and doing business over the Internet include:

Infrastructure/access Expanding telecommunications infrastructure to rural areas is a challenge in all African countries that can only be met with the participation of the private sector. Private companies will only invest if they see the prospect of financial return – thus policy must identify how much of state enterprise (the national telecommunications operator) to sell to investors (privatize), where and when to introduce competition and how to regulate the ICT sector. Governments can manage privatization and the introduction of competition more effectively if an independent and well-staffed regulator is already in place. The phasing in of these three processes is critical. The Dot Force report suggests that the expansion of infrastructure should target a few key sectors, which offer the possibility of generating jobs or

exports, and at the same time aim for universality of access through the use of special universal access funds, and other mechanisms managed through regulation.

Enterprise- ICTs offer endless possibilities for innovation; local entrepreneurs are more likely to identify new products and services that match local needs than big multi-national companies. It is important therefore in constructing ICT policy to encourage the creation of local finance and credit facilities, property rights and commercial law, fair tax regimes and tariffs to stimulate the local ICT private sector – as well as to create a predictable environment for external investment which will be needed to expand infrastructure.

ICT policy and policy in other sectors

ICT policy cuts across all human endeavours and is closely linked to other areas of policy including education, health, trade, and tourism and public administration.

Introducing computers into schools without ensuring – through education policy - both access and content that is attractive to girls may exacerbate gender inequality. Medical applications will only deliver benefit if health policies ensure that staff is trained in their use both in central hospitals and rural clinics.

E-commerce won't take off unless systems are in place to handle credit card payments and shipment of orders. Maintaining high tariffs on computer and communications equipment may limit the use of ICTs, hamper plans to expand human capacity in the ICT sector and slow down the establishment of small businesses in all sectors.

Computerizing the operations of government departments in an uncoordinated fashion will slow down the delivery of government services through public Internet access points. The fact that ICT policy and sectoral policies are inter-dependent argues in favour of the creation of a cross-sectoral body to manage ICT policy development where the views of all interested ministries will be heard and policies coming from different levels of government can be coordinated.

While ICT policy deals with many technical issues related to the structure of the telecommunications sector, the use of the radio spectrum and the linking of technologies, it also deals with broad social issues of equity and human rights, in particular the right to communicate in a private and secure environment.

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Governments in Africa and their regulators need to stop trying to control everything. For example, the regulator of one African country was going to license cyber cafes and telecentres. Fortunately she spoke to colleagues in a neighbouring country who reported that, in their view, it was not necessary. Unnecessary or over-burdensome rules lead to people flouting the law. Policy and regulation should be used as a way of encouraging people to do things, not as a defensive measure to prevent things from occurring.

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Needs of ICT Policy and who Benefits?

It is obvious but worth repeating. Unless an ICT policy has clear benefits for as many of the citizens of any country as possible, it is hard to argue that ICT can make major developmental changes. At a practical level, if it doesn't work from this principle, it will not get the political "wings" it requires to fly.

The ICT policy benefits may be economic (a more competitive economy will produce more taxes to spend on social needs) or social (citizens will get better healthcare using telemedicine). The skill is to blend these together to produce benefits that all will enjoy, including benefits that specifically target or are developed for women, youth, the elderly, disadvantaged groups, or rural and poor populations.

An ICT policy needs to encourage as wide an ownership as possible - of the policy and the means for bringing it about. It needs to be against monopolies of ownership, whether through government or the private sector. It needs to encourage equity involvement from national investors and employees so that everyone has a stake in owning the benefits of ICT.

The process of making decisions on ICT policy needs to be clear to outsiders and the process of taking key decisions needs to be able to be justified. In particular, decisions about changes in ownership need to be taken in a transparent manner. This would signal an end to cronyism, where decisions are made behind closed doors and benefit only a narrow set of interests.

Where governments are elected freely and fairly, they are accountable to their voters and this accountability covers ICT policy. However the government needs to consult those affected by its ICT policy for two reasons. Firstly, at the best of times the government cannot be knowledgeable about everything it's responsible for and it needs to draw on external knowledge to strengthen its plans. Secondly, it needs to check its conclusions and proposals with those most likely to be affected by them. Without consultation, the three-way partnership between government, civil society (and the variety of organizations it consists of) and the private sector, is weakened.

Governments in Africa and their regulators need to stop trying to control everything. For example, the regulator of one African country was going to license cyber cafes and telecentres. Fortunately she spoke to colleagues in a neighbouring country who reported that, in their view, it was not necessary. Unnecessary or over-burdensome rules lead to people flouting the law. Policy and regulation should be used as a way of encouraging people to do things, not as a defensive measure to prevent things from occurring.

ICT policy should not just end up in the form of a document. All too often with policy processes, large numbers of people put an enormous amount of time and energy into talking about what needs to be done. At the end of this, the policy is often triumphantly announced and then quietly forgotten. Cynicism sets in amongst those outside government that put energy into bringing the policy into being. Some countries have written two or three ICT policies without any clear outcomes from the process. An ICT policy needs to have a small number of "actions" that are clearly identified (as well as those responsible for carrying them out) and the resources needed to implement them. The policy should be inclusive and must consider the impacts on different groups of the population, specific geographic areas, etc.

What does ICT policy cover?

ICT policy guides actions in three main areas and ensures coherence among them: Telecommunications, Broadcasting and The Internet.

Telecommunications is the transmission or reception of signs, signals, writing, images and sounds by wire, radio, optical or other electromagnetic systems. The telecommunications sector includes private businesses and public sector organizations that provide telecommunications services (telephone, Internet access), produce equipment (telephones, exchanges, modems etc), define and apply the rules that govern telecommunications operations (regulation), or use telecommunications services and products (consumer groups, interest groups, educators, health professionals etc).

Broadcasting is the use of radio technologies to send transmissions (programmes: news, public services, entertainment, sports) intended for direct reception by the general public. Transmissions include radio and television. Like telecommunications, the broadcasting sector includes public enterprises such as national and community radio and television as well as private companies. While twenty years ago most broadcasters knew their audiences and targeted their services and programmes locally or nationally, today's television and radio programming often has a regional or global reach.

The Internet is a collection of networks linked together using a common protocol - a global computer network achieved through the interconnection of smaller computer networks around the world. People, computers and information are linked together electronically by a common protocol or set of communication rules.

It should be evident now why telecommunications, broadcasting and the Internet all have to be dealt with not necessarily by a single policy but within a single policy framework. They all use the same infrastructure to transmit messages (copper cable, optical fibre, satellites) over the radio spectrum and they can all deliver the same content (voice, data, text, pictures, video etc) to the same users.

The radio spectrum is a limited resource, which needs to be, managed in the national interest in a way those safeguards against the consolidation of ownership of content and the means to

deliver it – with a consequent suppression of diversity and local voices. National development requires that communications infrastructure and services extend to the whole population wherever people are located within the country.

Policy dimensions

Again in my view if ICT policy is to stimulate broad-based development, it must address five inter-linked dimensions.

Getting the focus right: ICT as an enabler or as a sector? Countries need to make a basic decision with respect to their ICT policies: do they try to grow their own ICT sector to manufacture and market ICT products – which offer economic benefit that in the long term, can be used for social development? Or do they use ICTs to help progress on their development goals (poverty reduction, education, health etc) in the short term? While applying ICTs to speed development in other priority sectors is considered more likely to deliver development gains, most countries have opted for an approach that includes both enabling and ICT sector strategies but with different degrees of emphasis to respond to different national strengths and challenges.

Human capacity: If ICT programmes are to be sustainable, a critical mass of people has to know not only how to use technologies and applications but also how to maintain them and generate from them innovative solutions to local problems. Countries need to focus on training a core of professionals who can provide access to and maintain the ICT infrastructure (computers, computer software, communications networks) and adapt them to local needs. Countries also need to think about how to retain skilled technical staff in the country once they have been trained. ICT policies can “start small” to take advantage of existing skills and become more ambitious as human capacity expands.

Policy issues include: Where to concentrate resources – primary, secondary, tertiary levels, focus on high level technical skills or basic ICT literacy and funding options – for example a human resource levy on international investors.

Applications and content are the reasons for investing in ICT. Applications enable users to carry out functions: sending e-mails, producing documents, creating web pages, managing databases and keeping financial records. These are generic applications, which can be used by anyone. But applications can also be tailored to specific needs: e-government, e-education, e-health, and e-commerce, for example. The content delivered by applications must satisfy the needs of local markets and users and be presented in an understandable form – if necessary using local languages and graphics. Both human and financial resources are scarce in developing countries so ICT policy needs to give priority to key application areas for the achievement of national goals. If resources are spread too thin, even well designed policies and projects will not deliver results.

Policy issues that arise once people begin exchanging information and doing business over the Internet include:

Infrastructure/access Expanding telecommunications infrastructure to rural areas is a challenge in all African countries that can only be met with the participation of the private sector. Private companies will only invest if they see the prospect of financial return – thus policy must identify how much of state enterprise (the national telecommunications operator) to sell to investors (privatize), where and when to introduce competition and how to regulate the ICT sector. Governments can manage privatization and the introduction of competition more effectively if an independent and well-staffed regulator is already in place. The phasing in of these three processes is critical. The Dot Force report suggests that the expansion of infrastructure should target a few key sectors, which offer the possibility of generating jobs or exports, and at the same time aim for universality of access through the use of special universal access funds, and other mechanisms managed through regulation.

Enterprise- ICTs offer endless possibilities for innovation; local entrepreneurs are more likely to identify new products and services that match local needs than big multi-national

companies. It is important therefore in constructing ICT policy to encourage the creation of local finance and credit facilities, property rights and commercial law, fair tax regimes and tariffs to stimulate the local ICT private sector – as well as to create a predictable environment for external investment which will be needed to expand infrastructure.

ICT policy and policy in other sectors

ICT policy cuts across all human endeavours and is closely linked to other areas of policy including education, health, trade, and tourism and public administration.

Introducing computers into schools without ensuring – through education policy - both access and content that is attractive to girls may exacerbate gender inequality. Medical applications will only deliver benefit if health policies ensure that staff is trained in their use both in central hospitals and rural clinics.

E-commerce won't take off unless systems are in place to handle credit card payments and shipment of orders. Maintaining high tariffs on computer and communications equipment may limit the use of ICTs, hamper plans to expand human capacity in the ICT sector and slow down the establishment of small businesses in all sectors.

Computerizing the operations of government departments in an uncoordinated fashion will slow down the delivery of government services through public Internet access points. The fact that ICT policy and sectoral policies are inter-dependent argues in favour of the creation of a cross-sectoral body to manage ICT policy development where the views of all interested ministries will be heard and policies coming from different levels of government can be coordinated.

While ICT policy deals with many technical issues related to the structure of the telecommunications sector, the use of the radio spectrum and the linking of technologies, it also deals with broad social issues of equity and human rights, in particular the right to communicate in a private and secure environment.