TECHNOPOLICY BRIEF 15

FORMULATION OF A NATIONAL ICT POLICY

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AFRICAN TECHNOLOGY POLICY STUDIES NETWORK

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One of the objectives of the network is to disseminate research results to policy makers, legislators, the organized private sector, civil society, mass media and farmers' groups through publications, dialogue and advocacy. Among its range of publications are the Working Paper Series (WPS), Research Paper Series (RPS), Special Paper Series (SPS) and the Technopolicy Briefs.

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Acronyms

AISI	African Information Society Initiative
COMESA	Common Market for Eastern and Southern Africa
EAC	East African Community
NICI	National Information and Communication Infrastructure
ICT	Information and Communication Technology
UNDP	United Nations Development Programme
UNECA	United Nations Commission for Africa
UNESCO	United Nations Educational, Scientific and Cultural Organization
WB	The World Bank
IT	Information Technology
WDI	World Development Indicators
M&E	Monitoring and Evaluation
MDG	Millennium Development Goals

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1.0

Why the ICT Policy Brief?

Many countries are publishing visionary information and communication technologies (ICTs) policies to benefit from the perceived potential of ICTs to promote economic and social development and combat poverty.

These policy documents aim to develop strategies for harnessing ICTs' potential for societal benefits. In part, they are responding to concerns over countries that do not take full advantage of these technologies: they would be left further behind on the wrong side of a growing "digital divide" that would trap them in deeper and intractable poverty.

As a result, policy makers have to be familiar with ICT policy formulation and gain clarity over questions such as:

a) What is an ICT Policy?
b) What type of ICT policy should it be?
c) What process should be followed?
d) Who should be involved?
e) What resources are required?

The purpose of this policy brief is to provide some basic guidelines on addressing these questions. It is a compass, not a step-by-step policy formulation cookbook. It simply points in the direction of the policy formulation process.

It is intended for policy makers, ICT-for-development practitioners and a broader audience interested in the role of ICTs in socio-economic development.

In many discussions on ICTs, it is often assumed that there is a shared common understanding of what is meant by ICTs. This assumption is not always true. In reality, understanding ICTs is often as diverse as the field that ICTs represents. As a result, the full benefit of the discussion is reduced.

It is on this basis that the departure point for the brief is to ask the question: *What are ICTs?*

2.0

What are ICTs?

2.1 Introduction

ICTs are technologies for processing information (that is, presenting it in various forms, storing it, searching for it, reproducing it, and so on) and transmitting information from one geographical point to another, from one person to another, to a group of people or to the whole community.

Early ICTs such as the newspaper, radio, television, film and music were labeled as mass media. The term "mass" underlines the extraordinary size of the audience reach of many of these technologies. They are also now referred to as *traditional ICTs* to distinguish them from *new ICTs*[1] *such as* computers and the Internet.

Traditional and new ICTs therefore encompass expanding and diverse communication technologies.

Some technologies are more concerned with transporting information, while others are more concerned with its production. Radio and television, for example, simultaneously produce and convey information. In part, these characteristics that distinguish one ICT from another.

2.2 Traditional ICTs

The history of ICTs starts with the printed book, a technical device for reproducing text that was already being copied by hand. The book is therefore the result of the successful application of print technology to the reproduction of texts in place of handwriting.

[1] Sometimes ICTs are distinguished between electronic and non-electronic ICTs.

In the early medieval period, the book was not regarded as a means of communication but as a store or repository of wisdom and a record or permanent work of reference.

Postal service is a technology for conveying written messages from one person to another and distribution of printed materials such as newspapers, journals, magazines and advertising material.

The significance of postal service as a means of person-to-person communication is steadily declining, since the advent of contemporary technologies such as E-mail which offers much faster, more reliable and cheaper solutions.

The main goal of the printed press was to deliver information to a large group of people, such as the population of a town or country.

Film began at the end of the 19th Century as a new means of presentation and distribution of an older form of entertainment: this includes stories, music and drama for popular consumption. It was also almost instantly a true channel of mass medium as it quickly reached a very large proportion of the population.

Both radio and television produce and distribute information simultaneously, although production is technically separated from distribution. Radio is the cheapest ICT which explains why it is the most available and widespread ICT in the world, both in developing and developed countries.

When **recorded music** (recording and replaying of music) began, it quickly gained appeal of popular songs and melodies. Much radio content since the early days has consisted of music, even since the rise of television. This has greatly increased the range and amount of music available and extended it to many more people than had access to gramophone.

Each development since then – portable tape players, the Sony Walkman, the compact disc and music video – has extended the reach of music, resulting in a mass media industry segment which is very inter-related.

These ICTs represent the bulk of traditional ICTs. The expression “new media” or “new ICTs” has been in use since the 1960s. It encompasses an expanding and diversifying set of communication technologies.

2.3 New ICTs

The term **telecommunications** means literally “communicating over distance”. According to the International Telecommunications Union (ITU), for instance, telecommunication signifies “any transmission, emission, or reception of signs, signals, writing, images, sounds or intelligence of any nature by wire, radio optical or other electronic systems (ITU, 1965, p 9, quoted in Babe, R.E)

In that sense, the term denotes even the physical transportation of messages inscribed on hard copy. As customarily used, however, telecommunication has less expansive meaning.

From a historical perspective, however, even ITU’s definition is too broad.

In practice, for many years, the term telecommunication was reserved for communications from one point to another as in the telephone. It did not cover communication from one point to many points as in broadcasting.

However, with technological changes, telecommunication has become an omnibus term denoting all modes of electronic communication.

Today, telecommunications includes wired and wireless telephony; different mobile services, such as cellular telephones and paging; and voice and data transmission. Existing telephone networks are now also used to complement computer networks.

Computers play a central role in the new ICTs. The key to the immense power of the computer as a communication machine lies in the process of digitalization that allows information of all kinds in all formats to be carried with the same efficiency and also intermingled.

Alongside computer-based technologies there are other innovations that have in some degree changed some aspects of communication. New means of storage

and retrieval include the personal video recorder, CD-ROM and compact disk. The computer has also led to new means of transmission by cable, satellite and radio, which have expanded the capacity to transmit.

Internet, unlike other ICTs, is not just one technology. It is a large range of communication technologies and a vast array of communicative texts supported by a set of standards between computers.

The Internet is often described as though it is one huge computer. In reality, however, the Internet is an intricate collection of smaller networks. As such the Internet is a large global web of networks that link together commercial computer communication services, university, government and corporate networks.

Just like the international telephone system, the Internet enables communication between individuals and computers almost anywhere in the world. Whilst akin to broadcasting, a single source can get a message to millions. The Internet, unlike broadcasting, is a two-way medium.

It is through the Internet that the neat distinction between traditional and new ICTs is far less easy to distinguish than it used to be.

2.4 Convergence

This occurs as a result of the process of *digitalization* which allows information of all kinds and formats to be carried in a single medium. This implies the dismantling of boundaries between the main types of ICTs. One example is film content that is distributed on many kinds of television, by way of telephone network, on cassette or even on the internet.

This means that technologies for the processing and transmission of information have begun to use the same language or are convergent.

According to the Organization for Economic Cooperation and Development (OECD) and Babe (1997), convergence has four aspects: technical, functional, corporate and legislative/regulatory.

a) Technical convergence means that increasing a single mode of transmission (for example, a coaxial or fibre optic cable or satellite) simultaneously transmits diverse modes of messages forms: voice, text, data, sound, and image.
b) Functional convergence sometimes referred to as “multimedia” points to new, hybrid services combining voice, data, text and/ or image.
c) Cooperate convergence refers to mergers, amalgamations and diversifications whereby media organizations come to operate across previously distinct boundaries.
d) Legislative/ regulatory convergence refers to the logic that different regulatory regimes should increasingly be rationalized.

2.5 Information and Communication

Since the primary function of ICTs is to facilitate communication, it is impossible to examine ICTs without reference to communication. It is also true that reference to communication cannot be made without considering information on which it depends.

Communication, simply defined, is the exchange of ideas through messages (information). It is not the mechanism of transfer of fact and figures. It is an interactive process that works in a dynamic and on-going way (Hiebert el, 1985). In communication, the role of sending and receiving changes hands, depending on who is talking and who is listening. This implies equality and shared interest. Ideally, ICTs should promote this role of equality and shared interest of communication.

Information made available by ICTs is an important source of awareness of a shared past, and of a present social location. It is also a store of memories and a map of where we are and who we are and may also provide the materials for orientation to the future. ICTs are therefore a means of production and distribution of knowledge – a basic ingredient of socio-economic development. Acquisition and use of knowledge is now regarded as essential in improving people’s lives, especially the lives of the poorest.

UNESCO's International Commission for the study of Communication Problems (MacBride Commission) stated that communication should be considered as a basic human right. Each community should have the ability to create knowledge from their own communities for their empowerment.

3.0

What is an ICT Policy?

A policy is a programme of planned activities to achieve a set of objectives. National policies are formulated to achieve national development goals.

Policies can take many forms, ranging from clauses in national constitutions and laws to technical and administrative procedures and specifications. As a result, a wide range of bodies, both private and public, may administer policies.

Why, however, do we need to develop ICT policies?

3.1 Why an ICT Policy?

ICTs are of public interest as they are essential to the long term welfare of society: they have political, social and economic functions.

In the political sphere, for example, governments rely on ICTs to communicate 'downwards' and receive information in return from citizens, for example, by way of public opinion, often expressed in the newspaper press. ICTs are also the source of information for active political life as they facilitate information flow to and among citizens and constituent bodies.

The social and cultural functions of communication overlap with the field of politics, but have a much wider reference. They relate to the whole range of news, entertainment and art, amusement, sports coverage and public education. Continuous communicative interaction, at numerous 'levels', from that of the family to the state, is necessary for the healthy' or just 'normal' life of societies.

The economic value of communication to society is unmistakable and is increasing all the time. ICTs and many related communication activities are often industries in themselves, producing informational products.

Poor areas or hard-to-reach regimes are generally difficult to serve profitably and so tend to be left unserved by the private sector.

How do we formulate a public ICT policy or a set of ICT policies to secure all these conditions?

3.2 What is the Scope?

One approach is to formulate an ICT policy so as to apply to one or more categories of ICTs, for example, newspapers or broadcasting. The National ICT policy for Kenya covers information technology services, telecommunication, postal services and broadcasting services.

The policy applying to one or more categories of ICTs may be combined with examining some or all aspects of the selected ICT which may be: structure, infrastructure and technology, distribution, access, conduct and content.

Structure deals with matters of ownership. The National ICT Policy for Kenya addresses ownership of the telecommunications sector and privatization.

Most ICT policies focus on increasing ICT infrastructure access, primarily through increased competition and private participation.

However, approaches that focus on technological development have been criticized, as ICTs policies by themselves are often of little use.

The alternative approach asserts that ICT policies are effective, sustainable, and worth the effort only if they are integrally linked to broader and more comprehensive strategies such as development and poverty reduction.

Alternatively, these broad objectives can be addressed on a sectoral basis such as health, education or agriculture – sometimes referred to as vertical policies.

It is important at the outset to determine the scope of the proposed policy. Regardless of the selected scope, the policy should be linked to some specific development objective.

Communication, as in the case of interpersonal oral communication, does not always need technology. Oral communication is face-to-face or public communication in which speaker and audience are present in the same place or limited distance.

How is this linkage achieved?

4.0

How are ICT Policies Formulated?

Policy-making ***process*** normally involves the expression of conflicting interests. It is convenient to think of such interests as being represented by ***"actors"*** who engage in debate and decision-making in appropriate locations or ***"fora"*** where decisions are made.

4.1 What is the Process?

The African Information Society Initiative (AISI) recommends that the ICT policy formulation process should start with the definition of national development priorities as contained in various documents such as the five-year plan, cabinet directions, which ICT policies should support.

In practice the process involves elaborate and prolonged processes that often cover analysis of national priorities, holding sensitization workshops, development of ICT frameworks, securing agreement on the framework, writing policy documents, taking them through legislations, establishing action plans and implementation of programmes.

It is particularly important to go through these steps in countries where the level of ICT policy awareness is low as has been the case for most countries in sub-Saharan Africa.

Tipsons and Fritelli (quoted in Lishan,) recommend that the relevance of ICT policies to development can be increased by engaging all key stakeholders (actors) in national development plans and implementation of ICT policies.

This process attracts a number of actors, each actor promoting their own interests.

Who are these actors and what are their interests?

4.2 Who Formulates ICT Policy?

McQuail (2000) identifies a number of actors and interests:

a) Public versus private interests
b) Owners and employers versus employees
c) Economic versus social cultural
d) Opposition politicians versus ruling politicians
e) National versus international
f) Developed (the North) versus developing (the South) countries[1].

These actors reflect the nature of public interest in ICT Policy.

The potential of conflict between public and private interests demonstrates the struggle over who should initiate or control the expansion of ICTs.

The struggle between national and international actors reflects increased globalization of ICT infrastructure as service. As a result, national governments may easily find themselves at odds with multinationals.

How are these conflicts resolved?

4.3 Where is it formulated?

The main fora at which policies are formed are transnational, national and regional.

At the international forum, the likely actors are national governments, international ICT organizations and development agencies. Examples of these actors are UNESCO or the ITU. At the international level, ICT policy formulation encounters forces of globalization. Since today's globalization, Northern forces largely determine process, "many developing countries do not obtain a fair share of the benefits of globalization and some actually suffer net losses (Khor, 1995, p 16).

[2] Sometimes the distinction between developed and developing countries is expressed in terms of the North and the South respectively.

The North is in control not only on account of strength but also because of lack of coordination in the South. National technology policies are largely formulated by the work of global institutions and their rules and standards. It is vital that developing countries participate more forcefully and effectively in these institutions. This requires policy coordination among developing countries.

The national forum probably has the widest range of actors and interests including political parties, labour unions, trade organizations, ICT industry and civil society interests. The issue of unequal power relationships discussed at the international level also exists within the nation. This was aptly demonstrated during the formulation of the National ICT Policy in Kenya at the final stakeholders' conference[2] to adopt the National Draft ICT Policy. Representatives of the industry, commerce and ICT professionals dominated the conference.

The regional level may be based on economic units such as the East African Community or Common Market of Eastern and Southern Africa. In fact, the Kenya National ICT Policy was based on the COMESA model.[3]

[3] National Stakeholders at conference to adopt the Draft ICT Policy was held in Mombasa on 13th to 15th June 2005.

[4] COMESA Model

5.0

How is an ICT Policy Implemented?

5.1 How is the Policy Enforced?

Policies have to be expressed in specific rules or regulations that can be applied to guide and control activities of ICTs on practical basis.

Regulations may be formal or informal.

Formality refers to three main aspects of enforcement: whether or not it is established in law; whether provisions carry enforceable penalties (financial or otherwise); and whether permanent or temporary.

Informal mechanisms of enforcement rely on customary agreement and voluntary compliance.

The degree of formality is related to enforcement power.
ICTs are still essentially national institutions that are not subject to external bodies: the most powerful is the intervention of the state and government.

This is followed by specific laws that regulate ICTs. The Communications Commission of Kenya (1999) Act, for example, regulates aspects of broadcasting and telecommunications.

Another category of regulations is general laws of the country within which the ICTs operate such as libel laws. There may also be administrative, technical and economic regulation.

There are also supervisory and advisory bodies to monitor performance standards. Finally, there are voluntary codes of practice and ethics for ICT organizations (self –regulation) outside pressure groups.

Regulations are devices for solving or avoiding some particular problem or issue of ICT policy. Because of continually developing technology and changing social and economic context, issues for ICT policy are never fixed and static. They change their character and salience over time and from place to place.

In addition, globalization has also raised issues for national control. ICT messages are, for example, no longer easy to halt at the national frontier.

5.2 What Resources are Required?

Resource inputs take a variety of forms. These can be institutional structures, including the mechanisms required to implement initiatives or supervise the overall strategy. They will include staff, often times highly skilled professionals with expertise in ICTs as well as other selected areas of policy focus.

Financial resources are undoubtedly a key input.

Implementation Planning

The African Information Society Initiative (AISI) recommends the development of a detailed action plan, time schedule, priorities and budget.

6.0

Will the ICT Policy Work?

Although ICT initiatives and national policies have proliferated in many countries in the last few years, not much has been done to measure their impact.

The development of an ICT Policy represents a major challenge for individual countries, as well as a significant risk for many of them.

One of the risks is that many counties spend significant time, energy and resources to develop ICT policies that remain blue prints or "white elephants" because no systematic set of indicators are agreed and established to monitor and evaluate their implementation.

6.1 Why Monitor?

The absence of such a framework of indicators makes it difficult to evaluate ICT policy impacts or ability to compare their achievements.

Monitoring and evaluation encounters several problems. As Mansell and Wehn write, "attempts to measure the impact of ICTs on the economies of industrialized countries encounter severe problems of statistical classification and data availability" (Mansell and When, 1998, p14).

Although the Kenya National ICT policy acknowledges the significance of monitoring and evaluation, it is vague. It states that this will be done by, first, collecting, analyzing and disseminating data and information on the sector to all stakeholders

The second activity will be establishing performance indicators of performance by sector operators and the sector as a whole.

As a result, there are emerging "best practices" in the area of monitoring and evaluation of ICT policies and their components.

One methodology, SCAN-ICT, comprises indicators based on themes that have been described by AISI. These include infrastructure development, strategic planning, capacity building, sectoral applications, e-governance and the information economy.

It is not quite clear if this methodology is widely used or it is a pilot project that was never rolled out.

The World Bank has developed a more comprehensive toolkit as a guide to promoters, supporters, designers and implementers of ICT policies. It is this methodology that is considered here in detail.

The World Bank approach considers the inter-relationship between policy, strategy and implementation plan. The overall ICT policy of a country will determine how and why themes such as "building an information society" or "promoting ICT for Poverty Reduction" are priority objectives.

Notwithstanding the reasons why a country may select such objectives, in any particular sector or area, policies, strategies and implementation plans are respective responses to three main questions: why? what? and how?

Policy – ***Why***
Strategy – ***What***
Implementation – ***How***

The implementation level is divided into two operational levels — "key initiatives" (how certain specific objectives are implemented) and "actions" (which are more specific to one area of responsibility, for example, institutional or geographic).

At what level should monitoring and evaluation apply?

6.2 What is Monitored?

Monitoring and Evaluation applies to all levels but different levels (policy, strategy and implementation) require different type of indicators.

Policy Goals

Policy goals are measured by development-focused indicators also called *impact indicators.* These indicators refer to the country's economy as a whole and not necessarily ICTs in particular. For example, a policy may seek to grow the country's ICT sector to make it a leading growth factor in the economy. This may be measured by GDP growth, total employment growth, or productivity.

Strategy

Converting a policy or vision into tangible change on the ground requires choosing what initiatives to undertake and establishing goals or how far to advance in each particular initiative. Some countries call these "flagship" interventions.

For example, if a country has selected the growth of its ICT sector as a policy goal, it will have to make choices among a number of possibly viable strategic priorities, such as:

(a) Develop ICT infrastructure
(b) Develop high-bandwidth technology parks
(c) Encourage high-tech foreign direct investment
(d) Increase stock of locally trained ICT professionals

Implementation

To meet strategic objectives, a number of distinct initiatives are taken. For each initiative, key deliverables, or output indicators, should be specified in the strategic plan.

For example, increasing the stock of locally trained ICT professionals will require a number of interventions, each of which will create different outputs, which may include:

(a) Improvement of capacity of ICT-focused learning institutions
(b) Increase in demand for ICT education /training

(c) Improvement of quality of ICT education at tertiary/vocational levels

Each key initiative generates interim deliverables or sub-products which form the basis of *interim indicators.*

Resource/input indicators

The resources required to undertake these projects and ultimately meet the strategic and policy objectives, should be specified in the strategy. These make up the project's inputs, or *input indicators*.

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In the early medieval period, the book was not regarded as a means of communication but as a store or repository of wisdom and a record or permanent work of reference.

Postal service is a technology for conveying written messages from one person to another and distribution of printed materials such as newspapers, journals, magazines and advertising material.

The significance of postal service as a means of person-to-person communication is steadily declining, since the advent of contemporary technologies such as E-mail which offers much faster, more reliable and cheaper solutions.

The main goal of the printed press was to deliver information to a large group of people, such as the population of a town or country.

Film began at the end of the 19th Century as a new means of presentation and distribution of an older form of entertainment: this includes stories, music and drama for popular consumption. It was also almost instantly a true channel of mass medium as it quickly reached a very large proportion of the population.

Both radio and television produce and distribute information simultaneously, although production is technically separated from distribution. Radio is the cheapest ICT which explains why it is the most available and widespread ICT in the world, both in developing and developed countries.

When **recorded music** (recording and replaying of music) began, it quickly gained appeal of popular songs and melodies. Much radio content since the early days has consisted of music, even since the rise of television. This has greatly increased the range and amount of music available and extended it to many more people than had access to gramophone.

Each development since then – portable tape players, the Sony Walkman, the compact disc and music video – has extended the reach of music, resulting in a mass media industry segment which is very inter-related.

These ICTs represent the bulk of traditional ICTs. The expression “new media” or “new ICTs” has been in use since the 1960s. It encompasses an expanding and diversifying set of communication technologies.

2.3 New ICTs

The term **telecommunications** means literally “communicating over distance”. According to the International Telecommunications Union (ITU), for instance, telecommunication signifies “any transmission, emission, or reception of signs, signals, writing, images, sounds or intelligence of any nature by wire, radio optical or other electronic systems (ITU, 1965, p 9, quoted in Babe, R.E)

In that sense, the term denotes even the physical transportation of messages inscribed on hard copy. As customarily used, however, telecommunication has less expansive meaning.

From a historical perspective, however, even ITU’s definition is too broad.

In practice, for many years, the term telecommunication was reserved for communications from one point to another as in the telephone. It did not cover communication from one point to many points as in broadcasting.

However, with technological changes, telecommunication has become an omnibus term denoting all modes of electronic communication.

Today, telecommunications includes wired and wireless telephony; different mobile services, such as cellular telephones and paging; and voice and data transmission. Existing telephone networks are now also used to complement computer networks.

Computers play a central role in the new ICTs. The key to the immense power of the computer as a communication machine lies in the process of digitalization that allows information of all kinds in all formats to be carried with the same efficiency and also intermingled.

Alongside computer-based technologies there are other innovations that have in some degree changed some aspects of communication. New means of storage

and retrieval include the personal video recorder, CD-ROM and compact disk. The computer has also led to new means of transmission by cable, satellite and radio, which have expanded the capacity to transmit.

Internet, unlike other ICTs, is not just one technology. It is a large range of communication technologies and a vast array of communicative texts supported by a set of standards between computers.

The Internet is often described as though it is one huge computer. In reality, however, the Internet is an intricate collection of smaller networks. As such the Internet is a large global web of networks that link together commercial computer communication services, university, government and corporate networks.

Just like the international telephone system, the Internet enables communication between individuals and computers almost anywhere in the world. Whilst akin to broadcasting, a single source can get a message to millions. The Internet, unlike broadcasting, is a two-way medium.

It is through the Internet that the neat distinction between traditional and new ICTs is far less easy to distinguish than it used to be.

2.4 Convergence

This occurs as a result of the process of *digitalization* which allows information of all kinds and formats to be carried in a single medium. This implies the dismantling of boundaries between the main types of ICTs. One example is film content that is distributed on many kinds of television, by way of telephone network, on cassette or even on the internet.

This means that technologies for the processing and transmission of information have begun to use the same language or are convergent.

According to the Organization for Economic Cooperation and Development (OECD) and Babe (1997), convergence has four aspects: technical, functional, corporate and legislative/regulatory.

a) Technical convergence means that increasing a single mode of transmission (for example, a coaxial or fibre optic cable or satellite) simultaneously transmits diverse modes of messages forms: voice, text, data, sound, and image.
b) Functional convergence sometimes referred to as “multimedia” points to new, hybrid services combining voice, data, text and/ or image.
c) Cooperate convergence refers to mergers, amalgamations and diversifications whereby media organizations come to operate across previously distinct boundaries.
d) Legislative/ regulatory convergence refers to the logic that different regulatory regimes should increasingly be rationalized.

2.5 Information and Communication

Since the primary function of ICTs is to facilitate communication, it is impossible to examine ICTs without reference to communication. It is also true that reference to communication cannot be made without considering information on which it depends.

Communication, simply defined, is the exchange of ideas through messages (information). It is not the mechanism of transfer of fact and figures. It is an interactive process that works in a dynamic and on-going way (Hiebert el, 1985). In communication, the role of sending and receiving changes hands, depending on who is talking and who is listening. This implies equality and shared interest. Ideally, ICTs should promote this role of equality and shared interest of communication.

Information made available by ICTs is an important source of awareness of a shared past, and of a present social location. It is also a store of memories and a map of where we are and who we are and may also provide the materials for orientation to the future. ICTs are therefore a means of production and distribution of knowledge – a basic ingredient of socio-economic development. Acquisition and use of knowledge is now regarded as essential in improving people’s lives, especially the lives of the poorest.

UNESCO's International Commission for the study of Communication Problems (MacBride Commission) stated that communication should be considered as a basic human right. Each community should have the ability to create knowledge from their own communities for their empowerment.

3.0

What is an ICT Policy?

A policy is a programme of planned activities to achieve a set of objectives. National policies are formulated to achieve national development goals.

Policies can take many forms, ranging from clauses in national constitutions and laws to technical and administrative procedures and specifications. As a result, a wide range of bodies, both private and public, may administer policies.

Why, however, do we need to develop ICT policies?

3.1 Why an ICT Policy?

ICTs are of public interest as they are essential to the long term welfare of society: they have political, social and economic functions.

In the political sphere, for example, governments rely on ICTs to communicate 'downwards' and receive information in return from citizens, for example, by way of public opinion, often expressed in the newspaper press. ICTs are also the source of information for active political life as they facilitate information flow to and among citizens and constituent bodies.

The social and cultural functions of communication overlap with the field of politics, but have a much wider reference. They relate to the whole range of news, entertainment and art, amusement, sports coverage and public education. Continuous communicative interaction, at numerous 'levels', from that of the family to the state, is necessary for the healthy' or just 'normal' life of societies.

The economic value of communication to society is unmistakable and is increasing all the time. ICTs and many related communication activities are often industries in themselves, producing informational products.

Poor areas or hard-to-reach regimes are generally difficult to serve profitably and so tend to be left unserved by the private sector.

How do we formulate a public ICT policy or a set of ICT policies to secure all these conditions?

3.2 What is the Scope?

One approach is to formulate an ICT policy so as to apply to one or more categories of ICTs, for example, newspapers or broadcasting. The National ICT policy for Kenya covers information technology services, telecommunication, postal services and broadcasting services.

The policy applying to one or more categories of ICTs may be combined with examining some or all aspects of the selected ICT which may be: structure, infrastructure and technology, distribution, access, conduct and content.

Structure deals with matters of ownership. The National ICT Policy for Kenya addresses ownership of the telecommunications sector and privatization.

Most ICT policies focus on increasing ICT infrastructure access, primarily through increased competition and private participation.

However, approaches that focus on technological development have been criticized, as ICTs policies by themselves are often of little use.

The alternative approach asserts that ICT policies are effective, sustainable, and worth the effort only if they are integrally linked to broader and more comprehensive strategies such as development and poverty reduction.

Alternatively, these broad objectives can be addressed on a sectoral basis such as health, education or agriculture – sometimes referred to as vertical policies.

It is important at the outset to determine the scope of the proposed policy. Regardless of the selected scope, the policy should be linked to some specific development objective.

Communication, as in the case of interpersonal oral communication, does not always need technology. Oral communication is face-to-face or public communication in which speaker and audience are present in the same place or limited distance.

How is this linkage achieved?

4.0

How are ICT Policies Formulated?

Policy-making ***process*** normally involves the expression of conflicting interests. It is convenient to think of such interests as being represented by ***"actors"*** who engage in debate and decision-making in appropriate locations or ***"fora"*** where decisions are made.

4.1 What is the Process?

The African Information Society Initiative (AISI) recommends that the ICT policy formulation process should start with the definition of national development priorities as contained in various documents such as the five-year plan, cabinet directions, which ICT policies should support.

In practice the process involves elaborate and prolonged processes that often cover analysis of national priorities, holding sensitization workshops, development of ICT frameworks, securing agreement on the framework, writing policy documents, taking them through legislations, establishing action plans and implementation of programmes.

It is particularly important to go through these steps in countries where the level of ICT policy awareness is low as has been the case for most countries in sub-Saharan Africa.

Tipsons and Fritelli (quoted in Lishan,) recommend that the relevance of ICT policies to development can be increased by engaging all key stakeholders (actors) in national development plans and implementation of ICT policies.

This process attracts a number of actors, each actor promoting their own interests.

Who are these actors and what are their interests?

4.2 Who Formulates ICT Policy?

McQuail (2000) identifies a number of actors and interests:

a) Public versus private interests
b) Owners and employers versus employees
c) Economic versus social cultural
d) Opposition politicians versus ruling politicians
e) National versus international
f) Developed (the North) versus developing (the South) countries[1].

These actors reflect the nature of public interest in ICT Policy.

The potential of conflict between public and private interests demonstrates the struggle over who should initiate or control the expansion of ICTs.

The struggle between national and international actors reflects increased globalization of ICT infrastructure as service. As a result, national governments may easily find themselves at odds with multinationals.

How are these conflicts resolved?

4.3 Where is it formulated?

The main fora at which policies are formed are transnational, national and regional.

At the international forum, the likely actors are national governments, international ICT organizations and development agencies. Examples of these actors are UNESCO or the ITU. At the international level, ICT policy formulation encounters forces of globalization. Since today's globalization, Northern forces largely determine process, "many developing countries do not obtain a fair share of the benefits of globalization and some actually suffer net losses (Khor, 1995, p 16).

[2] Sometimes the distinction between developed and developing countries is expressed in terms of the North and the South respectively.

The North is in control not only on account of strength but also because of lack of coordination in the South. National technology policies are largely formulated by the work of global institutions and their rules and standards. It is vital that developing countries participate more forcefully and effectively in these institutions. This requires policy coordination among developing countries.

The national forum probably has the widest range of actors and interests including political parties, labour unions, trade organizations, ICT industry and civil society interests. The issue of unequal power relationships discussed at the international level also exists within the nation. This was aptly demonstrated during the formulation of the National ICT Policy in Kenya at the final stakeholders' conference[2] to adopt the National Draft ICT Policy. Representatives of the industry, commerce and ICT professionals dominated the conference.

The regional level may be based on economic units such as the East African Community or Common Market of Eastern and Southern Africa. In fact, the Kenya National ICT Policy was based on the COMESA model.[3]

[3] National Stakeholders at conference to adopt the Draft ICT Policy was held in Mombasa on 13th to 15th June 2005.

[4] COMESA Model

5.0

How is an ICT Policy Implemented?

5.1 How is the Policy Enforced?

Policies have to be expressed in specific rules or regulations that can be applied to guide and control activities of ICTs on practical basis.

Regulations may be formal or informal.

Formality refers to three main aspects of enforcement: whether or not it is established in law; whether provisions carry enforceable penalties (financial or otherwise); and whether permanent or temporary.

Informal mechanisms of enforcement rely on customary agreement and voluntary compliance.

The degree of formality is related to enforcement power.
ICTs are still essentially national institutions that are not subject to external bodies: the most powerful is the intervention of the state and government.

This is followed by specific laws that regulate ICTs. The Communications Commission of Kenya (1999) Act, for example, regulates aspects of broadcasting and telecommunications.

Another category of regulations is general laws of the country within which the ICTs operate such as libel laws. There may also be administrative, technical and economic regulation.

There are also supervisory and advisory bodies to monitor performance standards. Finally, there are voluntary codes of practice and ethics for ICT organizations (self –regulation) outside pressure groups.

Regulations are devices for solving or avoiding some particular problem or issue of ICT policy. Because of continually developing technology and changing social and economic context, issues for ICT policy are never fixed and static. They change their character and salience over time and from place to place.

In addition, globalization has also raised issues for national control. ICT messages are, for example, no longer easy to halt at the national frontier.

5.2 What Resources are Required?

Resource inputs take a variety of forms. These can be institutional structures, including the mechanisms required to implement initiatives or supervise the overall strategy. They will include staff, often times highly skilled professionals with expertise in ICTs as well as other selected areas of policy focus.

Financial resources are undoubtedly a key input.

Implementation Planning

The African Information Society Initiative (AISI) recommends the development of a detailed action plan, time schedule, priorities and budget.

6.0

Will the ICT Policy Work?

Although ICT initiatives and national policies have proliferated in many countries in the last few years, not much has been done to measure their impact.

The development of an ICT Policy represents a major challenge for individual countries, as well as a significant risk for many of them.

One of the risks is that many counties spend significant time, energy and resources to develop ICT policies that remain blue prints or "white elephants" because no systematic set of indicators are agreed and established to monitor and evaluate their implementation.

6.1 Why Monitor?

The absence of such a framework of indicators makes it difficult to evaluate ICT policy impacts or ability to compare their achievements.

Monitoring and evaluation encounters several problems. As Mansell and Wehn write, "attempts to measure the impact of ICTs on the economies of industrialized countries encounter severe problems of statistical classification and data availability" (Mansell and When, 1998, p14).

Although the Kenya National ICT policy acknowledges the significance of monitoring and evaluation, it is vague. It states that this will be done by, first, collecting, analyzing and disseminating data and information on the sector to all stakeholders

The second activity will be establishing performance indicators of performance by sector operators and the sector as a whole.

As a result, there are emerging "best practices" in the area of monitoring and evaluation of ICT policies and their components.

One methodology, SCAN-ICT, comprises indicators based on themes that have been described by AISI. These include infrastructure development, strategic planning, capacity building, sectoral applications, e-governance and the information economy.

It is not quite clear if this methodology is widely used or it is a pilot project that was never rolled out.

The World Bank has developed a more comprehensive toolkit as a guide to promoters, supporters, designers and implementers of ICT policies. It is this methodology that is considered here in detail.

The World Bank approach considers the inter-relationship between policy, strategy and implementation plan. The overall ICT policy of a country will determine how and why themes such as "building an information society" or "promoting ICT for Poverty Reduction" are priority objectives.

Notwithstanding the reasons why a country may select such objectives, in any particular sector or area, policies, strategies and implementation plans are respective responses to three main questions: why? what? and how?

Policy – ***Why***
Strategy – ***What***
Implementation – ***How***

The implementation level is divided into two operational levels — "key initiatives" (how certain specific objectives are implemented) and "actions" (which are more specific to one area of responsibility, for example, institutional or geographic).

At what level should monitoring and evaluation apply?

6.2 What is Monitored?

Monitoring and Evaluation applies to all levels but different levels (policy, strategy and implementation) require different type of indicators.

Policy Goals

Policy goals are measured by development-focused indicators also called *impact indicators.* These indicators refer to the country's economy as a whole and not necessarily ICTs in particular. For example, a policy may seek to grow the country's ICT sector to make it a leading growth factor in the economy. This may be measured by GDP growth, total employment growth, or productivity.

Strategy

Converting a policy or vision into tangible change on the ground requires choosing what initiatives to undertake and establishing goals or how far to advance in each particular initiative. Some countries call these "flagship" interventions.

For example, if a country has selected the growth of its ICT sector as a policy goal, it will have to make choices among a number of possibly viable strategic priorities, such as:

(a) Develop ICT infrastructure
(b) Develop high-bandwidth technology parks
(c) Encourage high-tech foreign direct investment
(d) Increase stock of locally trained ICT professionals

Implementation

To meet strategic objectives, a number of distinct initiatives are taken. For each initiative, key deliverables, or output indicators, should be specified in the strategic plan.

For example, increasing the stock of locally trained ICT professionals will require a number of interventions, each of which will create different outputs, which may include:

(a) Improvement of capacity of ICT-focused learning institutions
(b) Increase in demand for ICT education /training

(c) Improvement of quality of ICT education at tertiary/vocational levels

Each key initiative generates interim deliverables or sub-products which form the basis of *interim indicators.*

Resource/input indicators

The resources required to undertake these projects and ultimately meet the strategic and policy objectives, should be specified in the strategy. These make up the project's inputs, or *input indicators*.

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