

**UNIVERSITY OF STELLENBOSCH**  
**DEPARTMENT OF INFORMATION SCIENCE**

**AN ASSESSMENT OF THE WESTERN-CAPE PROVINCIAL GOVERNMENT  
INFORMATION POLICY PROCESS AND ITS LESSON TO ERITREA**

**DANIEL G. GARZA**



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Supervisor: Dr. Lishan Adam

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### Declaration

I, the undersigned, hereby declare that the work contained in this assignment is my own original work and that I have not previously in its entirety or in part submitted it at any university for a degree.

**Signature:**

**Date:**

### **Abstract**

This study assesses the information policy of the Western Cape provincial government of South Africa, with special emphasis on ICT for development in the general context of the global Information society. It is aimed at getting key lessons together for the Eritrean ICT policy development.

The methodology used in this study include review of the literature on the ICT policy in Western Cape, South Africa and beyond, conducting interviews with key actors in Western Cape Provincial Government and site visits to Multi-Purpose Community Centres. The study analyses institutions, ICT policy processes, methodologies and challenges. The study concludes that although developing an ICT policy remains fundamental for developing countries like Eritrea, the main challenge lies in integrating new and old technologies into national development priorities. This cannot be achieved without building blocks such as adequate infrastructure, human and financial resources, and commitment to succeed in information age. A series of recommendations were put forward for Eritrea based on the analysis of the policy process and progress in South Africa in general and Western Cape Province in particular.

## OPSOMMING

In hierdie studie word die beleid ten opsigte van inligting in die Wes-Kaapse provinsiale regering van Suid-Afrika bestudeer, met die klem veral op Inligting en Kommunikasie Tegnologie vir ontwikkeling in die algemene konteks van die wêreldwye Inligting gemeenskap. Die doelwit van hierdie studie is om sleutellesse te leer wat kan help met die ontwikkeling van 'n beleid t.o.v. Inligting en Kommunikasie in Eritrea.

Die metodologie wat gebruik is sluit in 'n oorsig van die literatuur oor die IKT (ICT) beleid in die Wes-Kaap, Suid-Afrika, en in ander lande; onderhoude met sleutelfigure in die Wes-Kaapse provinsiale regering; en besoeke aan Veeldoelige Gemeenskap Sentrums. Die studie ontleed instansies, IKT beleid prosesse, metodologië en uitdagings. In die studie word daar bevind dat, alhoewel die ontwikkeling van 'n Inligting en Kommunikasie beleid van fundamentele belang is vir ontwikkelende lande soos Eritrea, die hoofuitdaging daarin lê om ou en nuwe tegnologië te integreer in die nasionale ontwikkelings prioriteite. Dit kan nie gedoen word sonder die boublokke van genoegsame infrastruktuur, menslike en finansiële hulpbronne, en verbintenis tot sukses in die inligtings era nie. 'n Reeks aanbevelings word gemaak vir Eritrea, gegrond op die ontleding van die beleid, proses en vooruitgang van Suid-Afrika in die geheel, en veral van die Wes-Kaap.

### **Dedication**

For my two brothers Hailesellasié and Girmaab, who no longer are with us. Their cause and memory lives on forever.

For my grandmother, Senbetu, for whom it was never too late to learn to read and write at her late 60th old of age. Her determination and will power is inspirational. Reading the Psalms from the bible was her driving force.

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## Chapter 1 Introduction

### 1.1 BACKGROUND/RATIONALE

The aim of this research is to analyze the extent to which the information policy of the Western Cape Provincial Government (PGWC) empower communities and fosters the development of knowledge-based economy, with the purpose of using the result of the analysis, as a bench mark in studying the Eritrean ICT policy development.

This research project assesses the extent of the national information policy of the Western Cape Provincial government with respect to answering some basic questions: These are;

- What is the policy direction of PGWC in respect to empowering the citizens in the society?
- What is the policy direction of the PGWC in respect of helping to include the province in the network of the knowledge-based global economy?
- How the ICT policy of the PGWC does fits into the process in South Africa and beyond?
- What are the key lessons and best practices that could be used by other Africa countries like Eritrea that are in the process of developing their ICT policies?

The other objective of this research is to generate some general guidelines for using ICT to alleviate poverty and generally foster development in of Eritrea.

One of the most important promises of new Information and Communication Technology (ICT) is its abolition of space and time constraints in redressing economic and geographical marginality. ICT as the information infrastructure, it is the question of how we shape and apply the policies that govern it should matter, given that its impact on development is obvious by now. Maintaining an integrated approach for development interventions is essential to ensure that the overall goals are achieved for empowering communities, improving peoples' lives or quality of life and creating a more equal, open society (James, 2001:4).

Developing countries, especially, have a critical stake in how successfully they cope with the trade, environment, energy, health, agricultural, industrial, population and other challenges

facing them as they enter the Information Age. Putting in place national information policies and laws, including sector specific information policies, is a key building block needed to meet these challenges. However, where such policies may exist, they are not effectively linked to sustainable development, computer age industrialization objectives and especially the opportunities of the Cyberspace era that never existed in the Agricultural and Industrial era economies of bygone times.

The challenge to governments, therefore, is the re-thinking of their role, their laws, their rules, their regulations, and their national policies in the Cyberspace era, so that they maximize the positive benefits of the Information Society, while at the same time minimizing the negative, constraining forces that are acting as barriers.

Many African countries, might ask how participation in the global information economy can have any significance when there are so many basic challenges to address: poverty alleviation, adequate health care including combating HIV/AIDS epidemic, employment creation, and national and regional security issues (James, 2001:4). Although these problems are longstanding, a continuation of existing trends in the ICT have/have-not gap may contribute to a number of social problems including skewed economic outcomes and enhanced risk of social and political conflict. While the bad news is that the global equity problem is getting worse, the good news is that international and national bodies have an improved understanding of policies that can expand and accelerate the distribution of ICTs to poor populations in developing countries (Kenney, 2001).

ICTs are also facilitating a rapid globalisation of economic activity. In an increasingly global economy, where knowledge about how to excel competitively and information about who excels are both more readily available, effective creation, use and dissemination of knowledge is increasingly becoming important. Innovation, which fuels new job creation and economic growth, is quickly becoming the key factor in global competitiveness.

It is within this context that this study aims to come up with recommendations on how the developing nations, like Eritrea, can use and understand ICT as enabler of development in today's global knowledge era.

Countries like Eritrea can learn from experiences of South Africa. South Africa has been a key actor in national and international policy development since the Information Society and

Development (ISAD) conference held in May 1996. ISAD was the major conference at which the topic of the Information Society was discussed in a development context. The concluding remarks of the conference went as far as to state that: The new ICTs will help the developing nations to “leapfrog” entire stages of development (Chair’s conclusion in Miller, 1996 cited in Audenhove, [et.al] 2003:6). This conference has brought about greater consciousness in the region of the importance of knowledge and new technologies in the development process (Wild & Sib Thorpe, 1999) cited in Audenhove, [et.al] 2003:7. The conference is also believed to have provided a stimulus for a whole set of initiatives at national, regional and international levels, both by individual states and by regional and international organizations and donors. The ISAD conference saw the launch of the African Information Society Initiative (AISII), which a group of experts had already started developing in 1995 under the leadership of the Economic Commission for Africa (ECA), (Audenhove, [et.al] 2003:7).

As a result of conducive ICT policy process the South African ICT industry has been growing. ICT, as a sector, is one of the fastest growing in the South Africa, with spending at US\$9.6 billion, 6.9 percent of the GNP (DOI final report: 2001). The government has created the State Information Agency (SITA) to encourage the provision of Information Technology, Information systems and related services in a managed secure environment. In addition, the government has launched Info .com 2025, which serves as a collective program of ICT projects designed to establish a networked Information Community and make South Africa globally competitive. Info.com 2025 addresses issues of policy, infrastructure, human capacity and local content within ICT industries (DOI final report: 2001).

A significant spill over has also been achieved at provinces like Western Cape. The Provincial Government of Western Cape was able to launch an Information society programme. Its white paper, “On Preparing the Western Cape for the Knowledge Economy of the 21<sup>st</sup> Century” was one of the important milestones in the vision of the provincial government’s commitment to setting out a clear economic vision and charts. The objective of the white paper is to make the Western Cape the most successful, innovative and competitive economic region in Southern Africa with enhanced quality of life for all its inhabitants. In particular the white paper seeks to set foundations for the province to become:

- A leading learning region
- An outward looking region
- A leading centre for entrepreneurship and innovation

- A Cape of Good Hope for all, capable of promoting sustainable growth, equitable development, economic empowerment and an improved quality of life for all.

This white paper is an outline an agreed vision and strategic framework to guide the public and private sectors and other role players in the provincial economy, in ways which enable the Western Cape, to address the twin challenges of increasing competitiveness and alleviating poverty in the global knowledge economy (PGWC, 2001). A substantial effort has also been made to put the vision in to practice.

The practice in Western Cape shows that if committed, developing countries can participate in knowledge economy. The situation in Eritrea is no different to that of other developing countries. A further absence of peace and stability in neighbouring countries has also left the Horn of Africa among the regions of the world most deprived of hope of development. Valuable time and resources have been exhausted in vain by the people and the government.

One of the key problems of African countries is lack of well trained human resource that builds the information. Existing human resource is not effectively utilised while the expected results remain at the prototype level, and state and private enterprises that depend more on foreign inputs than indigenous ones. This state of affairs has been partially responsible for Africans economic plight and perpetuates the current dismal state of a large segment of the human race that has been forced to tolerate poverty, sickness and illiteracy (ECA, 1991).

Eritrea, being the newest nation in Africa, and among the least developed countries in the world, is part and parcel of this vicious circle of technological backwardness and under development. In the history of this continent, only a limited number of nations and their people have suffered the pains of endless chains of war and bloodshed and withstood their consequences as often as the people of Eritrea. The fact that the nation emerged from a 30-year war of liberation recently, makes the case of Eritrea more pronounced. There a number of successful attempts though, to adapt and make effective use of technology in the history of the Eritrean people. The industrial base left in Eritrea by the Italians was very promising. The present Eritrean government, since the years of the liberation war, has been following and is still committed to the policy of self-reliance. Those lessons must not be forgotten but should be systematically studied in order to develop the right strategies and policies for the future.

Coupled with the commitments of its people and an integrated approach to development Eritrea stands a chance to mainstream ICTs in its development. Eritrea believes that addressing the broader issues of socio-economic development is the foundation for integrating ICT in particular sector and developing the information policies.

## **1.2. RESEARCH PROBLEM AND OBJECTIVES**

### **1.2.1. Research Problem**

This research is about the assessment of the Information policy of the PGWC. At the same time it looks at Eritrea's state of readiness in this regard, to seek answers for what and how Eritrea can learn from PGWC's ICT policymaking process. The study focuses mainly on the public sector and policy and regulatory issues.

### **1.2.2. Objectives of the Research**

The major objectives of the research are:

- To assess and understand the process of information policymaking of the Provincial Government of Western Cape's (PGWC) from local, national and global perspectives
- To provide general recommendations with regard to shaping policy to meet national development goals for developing countries like Eritrea.

### **1.2.3. Overview of the Chapters**

The study is organized in three major parts and consists of six chapters.

- The first part presents the introduction. The introduction deals with the study background, statement of the problem, objectives of the research and organization of the study, pertinent literature background, and research framework and research methodology. Chapter one and two are included in this part.
- The second part analyses the information policy and performance of the PGWC's in its evolution as an information society both nationally and internationally. It covers the present status of the national information policy development in Eritrea. Regarding both countries the emphasis will be on how they are dealing with the issue of ICT and its impact on the socio-economic development.

- In the last part which comprises chapter five and six the research paper covers the global perception on ICT and related policy issues. The last section presents conclusion and lessons to be learned for Eritrea, form of the PGWC's ICT policy development.

### **1.3. RESEARCH METHODOLOGY/ METHODS**

The methodology used in this study includes:

- Survey of literature

The study analysed existing publications, such as government's white papers and existing national information policy studies. Other sources of information include the Western Cape provincial policy initiatives publications, Government policies and other publications. It was noted that many of the available studies on the Information society and Knowledge economy are quite scattered, mainly focussed on the concept, without paying particular attention to the link between policymaking and economic growth.

- Conducting interviews

The key interviewees include department heads and commissioners in the national information policy-making offices of the provincial government and outsourced organizations and individuals in Western Cape. Interviews were also conducted in Eritrea.

- Site visits to projects that provide access to communities

The focus of this study was on analysing the progress of Western Cape Provincial Government in realizing the vision of networking the region with global economy and at the same time empowering the local society with relevant information and knowledge to assist its prosperity. Site visit was made to actually observe how communities were benefiting from the ICTs. The assessment was used to provide guidelines for ICT policy development of Eritrea.

## **Chapter 2: Review of the Global Knowledge Economy and ICT Policies in Context**

### **2.1 Introduction**

Although the digital divide is mostly about access to networks, or connectivity, is just one piece of the puzzle for societies entering this new era. More fundamentally, this transition requires major shifts in the regulatory environment, knowledge flow and renewed attention to public-private partnerships leading to meaningful use and social appropriation of ICTs. From the developing countries' perspectives, therefore, the information society is about transformation of the poor through widespread use of new technologies while at the same time emphasising on generation, exchange and use of new knowledge that forms the foundations of the new economy.

### **2.2 The Information Economy**

The technological revolution, centred on information and communication technologies (ICTs), is reshaping the material basis of society at an accelerated pace. A new-networked economy and a knowledge-based information society have emerged in our midst altering the way the way people live, learn, work and relate to each other. According to Castells a new economy has emerged in the last two decades on a world wide scale. The fundamental distinctive features of this economy are that it is informational and global. It is informational because the productivity and competitiveness of units or agents in this economy (be it firms, regions, or nations) fundamentally depend upon their capacity to generate, process, and apply efficiently knowledge based information. It is global because the core activities of production, consumption, and circulation, as well as their components (capital, labour, raw materials, management, information technology, markets) are organized on a global scale. It is both informational and global because, under the new historical conditions, productivity is generated through and competition is played out in a global network of interaction (Castells, 1996:66).

We live in a world that, in the expression of Nicholas Negroponte, has become digital. However prophetic hype and ideological manipulation characterizing most discourses on the information technology revolution is often misleading. Global networks of instrumental exchanges selectively switch on and off individual groups regions and even countries,

according to their relevance in fulfilling the goals processed in the network, in the relentless flow of strategic decisions (Castells, 1999:31).

Castell's anxiety about the haves and the have-nots in the information age has become the key agenda for the global community. The so-called "digital divide" movement has increasingly become the key agenda of nations, donor agencies and the United Nations. The World Summit on the Information Society (WSIS) that was held in Geneva, at its Fifth Plenary Meeting, 12 December 2003, among others, adopted the following Declaration of Principles (WSIS-03/GENEVA/DOC/4):

1. that science has a central role in the development of the Information Society. Many of the building blocks of the Information Society are the result of scientific and technical advances made possible by the sharing of research results.
2. that education, knowledge, information and communication are at the core of human progress, endeavour and well-being. Further, Information and Communication Technologies (ICTs) have an immense impact on virtually all aspects of our lives. The rapid progress of these technologies opens completely new opportunities to attain higher levels of development. The capacity of these technologies to reduce many traditional obstacles, especially those of time and distance, for the first time in history makes it possible to use the potential of these technologies for the benefit of millions of people in all corners of the world.
3. that ICTs should be regarded as tools and not as an end in themselves. Under favourable conditions, these technologies can be a powerful instrument, increasing productivity, generating economic growth, job creation and employability and improving the quality of life of all. They can also promote dialogue among people, nations and civilizations.
4. that the benefits of the information technology revolution are today unevenly distributed between the developed and developing countries and within societies. Therefore there is a need for turning this digital divide into a digital opportunity for all, particularly for those who risk being left behind and being further marginalized.
5. that there should be commitment to realize the common vision of the Information Society for present and for future generations. It is also recognized that young people are the future workforce and leading creators and earliest adopters of ICTs. They must therefore be empowered as learners, developers, contributors, entrepreneurs and decision-makers. The focus must be especially on young people who have not yet been able to benefit fully from the opportunities provided by ICTs. There should be

commitment to ensure that the development of ICT applications and operation of services respects the rights of children as well as their protection and well-being.

The WSIS deceleration above suggests a need for the developing countries to embark on the necessary programmes that provide the transition to the information society through focus on young people, science and technology and by formulating the policies that create digital opportunities for the people.

### **2.2.2 Defining Information Society**

The information society is a term used to describe a society and an economy that makes the best possible use of new information and communication technologies (ICT's). In its narrower sense, the information society can perhaps best be understood as a society that has developed information technology and is learning how to use it (John Feather, 1998: 207). In an Information Society people will get the full benefits of new technology in all aspects of their lives: at work, at home and at play. Examples of ICT's applications within the information society include: Geographic Information Systems, Telemedicine, distance education, video conferencing, ATM's for cash withdrawal and other on-line banking services, mobile phones, teletext television, faxes and information services such as the Internet and e-mail. "Information Society" is now the term widely used to capture the increase of the contemporary influence of ICTs (James, 2001:4).

Contemporary literature indicates that the relationship between the information and knowledge society's free flow of information and ideas has sparked an explosive growth of knowledge and its myriad new applications. As a result, economic and social structures and relations are being transformed. Yet the vast majority of people in the world remain untouched by this revolution. This 'digital divide' threatens to widen the already existing development gap between the rich and the poor among and within countries. The majority of the world's people will not be able to benefit from this revolution unless they are enabled to participate fully in the emerging knowledge-based information society.

### **2.2.3 Knowledge Economy**

According to Drucker, (1993:7), for the last two hundred years, neo-classical economics has recognized only two factors of production: labour and capital. This is now changing. Information and knowledge are replacing capital and energy as the primary wealth-creating

assets, just as the latter two replaced land and labour 200 years ago. In addition, technological developments in the 20<sup>th</sup> century have transformed the majority of wealth creating work from physically- based to “knowledge-based”. Technology and knowledge is now becoming the key to meaningful use and social appropriation of ICTs.

Drucker, (1993:75) emphasizes the importance of information and knowledge in the present economy by saying that to whichever traditional industries managed to grow in the last 40 years, did so because they restructured themselves around knowledge and information.

The emergence of the knowledge economy, building on the pervasive influence of modern information and communication technologies, is bringing about fundamental changes in the global economy. Its significance goes well beyond the hyping of the Internet or the dramatic declines in the dotcom sector. What is underway is a transformation of economies and societies. The emerging of knowledge economy presents a set of new imperatives for Government, and new challenges and opportunities for society as a whole. A substantial percentage of economic growth can be estimated to be due to new and better knowledge. In effect future prosperity is critically dependent on policies that foster the continuous generation of knowledge and pursuit of learning (Castells1998: 71-75).

Knowledge has always been a factor of production, and a driver of economic and social development. Earlier economies depended, for example, on knowledge about how to farm, how to build and how to manufacture. However, the capacity to manipulate, store and transmit large quantities of information cheaply has increased at a staggering rate over recent years. The digitisation of information and the associated pervasiveness of the Internet are facilitating new intensity in the application of knowledge to economic activity, to the extent that it has become the predominant factor in the creation of wealth (Drucker, 1993: 71-75).

It is a further feature of the knowledge economy that it increasingly relies on the diffusion and use of information and knowledge, as well as its creation. The success of enterprises, and of national economies, becomes increasingly dependent on the information infrastructure that is necessary for the gathering and utilisation of knowledge. Nonetheless, most developing countries have a long way to go in building the underlying infrastructure for knowledge creation and use and creating a critical mass of knowledge workers. Auspiciously, the new information and communication technologies make it possible for developing countries to leapfrog some of the lengthy development path experienced by developed countries.

### 2.3.4 The Information and Communication Technology (ICT) Revolution

What about information and communication technologies (ICT)? ICT are the enablers of change. They do not by themselves create transformations in society. ICT are best regarded as the facilitators of knowledge creation in innovative societies (OECD, 1996).

ICT is defined as the set of activities that facilitate by electronic means the processing transmission and display of information by electronic means. Since the information revolution has started in today's developed countries, it is obvious that these countries have the higher levels of technological attainment and a higher use of ICT products: Personal Computers, Mobile Phones, Internet Hosts, Fax Machines and Televisions. Who benefits and who loses from these changes? Is the new information revolution likely to widen the gap between the rich and the poor, or is it a force that can be harnessed to achieve higher living standards for the 3.5 billion persons currently living on an income of less than 2 dollars a day (World Bank Report, 2001). According to Heeks, 1999 ICTs include not only new tools but old technologies and the environment in which they are applied (Fig 1.)

The answers to these questions are far from clear. On the one hand, new technologies open up new spaces for competition and challenges to the established order. The recent history of the information revolution is full of stories of small start-up enterprises that were able within years to topple established giants. Indeed, the power of the Internet appears to be bringing world economies closer together over time, so that firms in South East Asia can compete electronically with those in the USA. By bringing down impediments to trade and communications and lowering entry barriers, information and communication technologies seem to be introducing a powerful force towards convergence of world incomes (World Bank 2001).

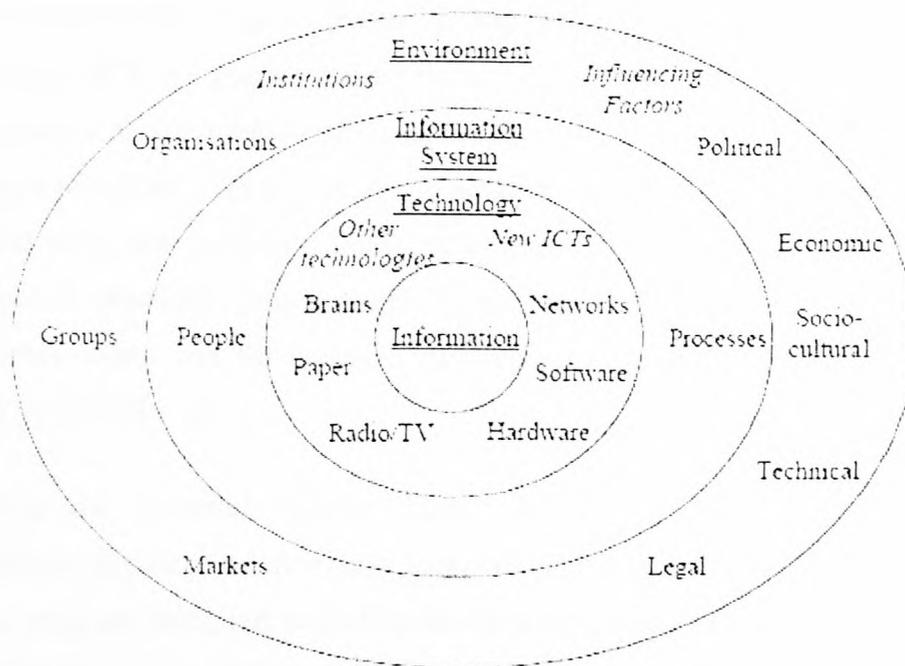
Obviously the old ways of transacting business in a relatively slow-moving, paper-based, and tangible document-oriented society is simply no longer appropriate to retain a competitive advantage in the information age. Electronic images, on-line databases and worldwide interconnectivity through the Internet, are the new order of the day for business, for government, for universities, for schools, for libraries, for hospitals, for private foundations, for trade and professional associations, and for private individuals. In effect the current debate on the importance of access to ICT and its value in addressing global development disparities is a part of wider discussion on reaping these potential benefits while at the same time

addressing the risks of globalization. This is because ICT is itself a key enabler of globalization: the level and pace of global flows in physical and intangible assets have been dramatically boosted by the ability to connect vast networks of individuals across geographic boundaries, at negligible marginal cost. This relationship between ICT and globalization makes development policy interventions that foster ICTs far more critical (DOI, 2001: 7).

ICT can be also useful for poverty alleviation, not just through its impact on economic growth (wealth creation), but also by improving access to health care, education and other social services. ICTs have a fundamental empowering potential. The new economies look at ICTs not as drivers of change but as tools for releasing the creative potential and knowledge embodied in people (James T. 2001).

ICTs offer numerous possibilities for developing countries to speed up their social and economic development. Therefore development-oriented ICT applications such as E-government (to improve public services), E-business, E-learning, and E-health should be pursued in developing countries while at the same time improving access to global information resources while at the same time improving access to global information resources. ICTs have allowed the creation of a global marketplace where it is possible to access a wide variety of information, goods and services.

In the future, it will be difficult to tell the difference between a phone and a computer. The end result is that every intelligent electronic device, as well as humans, will be connected to a growing information and knowledge utility. We are moving to the realization of Metcalf's law, which says the utility of connectivity and convergence, make information and knowledge available at any place, at any time. Consequently, the convergence will lead to transformation of economies and societies across the globe. But these technologies do not produce new ideas. All knowledge and learning ultimately depends on people (Skryme, 1999:28) which often do not have equal access to the technologies.



**Figure 2.1: Systematic view of information and communication technologies**

Source: Heeks, Richard (1999:4)

#### 2.3.4.1 Equity versus Technology

ICT has a double-edged sword. At one level the ICTs are empowering tools, which provide unprecedented access to information and to communications; at another ICT might be seen as an implement of control, giving unlimited power to those who control the information it stores. The central dilemma of the information society is how to resolve this issue (John Feather, 1998: 208).

ICT are potent tools whose power lies in their ability to support integrated development with long-term social and economic benefits. For example there is cross-country evidence that telecommunications rollout facilitates economic growth. The Internet's power to leverage a network connection suggests that this link will only become stronger. Moreover, the Internet presents numerous opportunities to increase the efficiency and equity of government services and improve the lives of the poorest. The ongoing networking revolution may augur a closer and more productive integration of affluent and developing nations (World Bank info development, 2000: 23).

The economy of the world is becoming increasingly integrated and with it, a global economy is evolving. ICTs are playing major role in this evolution. Mastering ICTs is therefore the key to advancement under these circumstances. For various reasons, developing countries do not- or unable to master ICTs as well as the developed countries. This means the gap between the rich and poor will tend to increase rather than decrease, and that the 'global village' will therefore be populated predominantly by the enterprising elites of the developed world; the developing world will for the most part remain outside the village walls(Mayuri Odedra-Straub [et.al],1995: 36).

Although the potential benefits from advances in information and communication technologies appear to be clear, how they will be distributed, is not. Well-founded fears exist that the poor are being left behind by the information revolution. Access to information and communications technologies (ICTs) requires education, infrastructure and institutions, three resources which many developing countries lack. Without them, it is increasingly likely that the poor may be on the losing side of this revolution.

#### **2.3.4.2 Affordability**

Technologically progressed economies differ from those which have stayed behind in two fundamental ways: an economic environment conducive to investment, and a climate of civil liberties conducive to research and expansion of communications. The interaction with other factors, such as education and investment in human capital or foreign direct investment is more complex and varied (World Bank: 2001). Technologies often cost more in developing nations due to lack of a conducive -environment for investment.

One possible solution to bridge the affordability gap is to extend access to traditional technologies by the poor while building the foundation for accessing information and knowledge through community-based establishments such as schools, public libraries, cyber cafés or health centres. A policy that promotes access to as wide a range of technologies as possible including radio (and television) broadcast options is clearly important for the development of opportunities for the poor. Opportunities for private, competitive provision of radio content will expand choices and development impact. Governments therefore should legalize the private provision of national and local radio and issue spectrum licenses for broadcasters. Even in poorer countries, opening the airwaves increases choice and information flow.

In addition to opening up to private and community provision, there also remains a significant role for government in the broadcast sector, especially in the delivery of public service content in areas such as education, health and disaster preparedness. Further, there might be a role in providing access to receivers. Radio sets are already fairly ubiquitous in developing countries. Nonetheless, there might be an argument for providing wind-up sets to schools and community centres to ensure wider access amongst the poorest.

With regards to telephones, because of the historical concentration of access amongst wealthy urban populations, telephone rollout has traditionally been a force for divergence in incomes both between rich and poor countries and within poor countries (Kenny, 2000:42). However, technological change, policy reform and innovative universal access programmes have made the goal of extending telephone access to the majority of the poor an increasingly feasible idea. It is clear that the first step in extending telephone access to the poorest remains a program of reform towards well regulated private, competitive markets, which have repeatedly delivered expanded network access at lower cost (Kenny, 2000: 43).

It will be a while before the universal access to the Internet can be achieved. However, this does not mean that the Internet technology is irrelevant to developing nations. It will have a range of uses in production, trade and the provision of government services that should increase incomes and improve the quality of life of the poorest. Through intermediary technologies including radio and telephone, the Internet might also have a significant impact on information flows directly to and from the poorest (Kenny, 2000: 45). ). Therefore it is important for developing countries to undertake a careful policy process that maximizes the use of ICTs by the majority while also building advanced infrastructure for the knowledge society. It should be noted that without careful policy choices, the opportunity cost of the investment in ICTs could be high as shown by the failures of ICT projects in most developing countries. More importantly the productivity gain from ICTs in developing countries is yet to be established.

#### **2.3.4.3 IT Productivity Paradox**

The term IT productivity paradox was introduced to describe observations that on a macro level it has been virtually impossible to find the correlation between IT investment and business performance or any financial indicator (Strassmann, 1990:452). The famous quip commented by Robert Solow, 'we see computers everywhere except in the econ-statistics'

may start it all, but the observation 'IT productivity paradox' in the form of frustration, is every senior management's headache today. Although the revolutionary changes that forced the modern economy can be attributed to such macro forces as global competition and socio-cultural shifts, perhaps the most pronounced force creating these changes is information technology (Brian Dos Santos and Lyle Sussman, 2000: 429). With the coming of Internet, especially the e-commerce, businesses have a window of opportunity to capitalize on the potential of IT. As Castells notes (1996:79), productivity is not really vanishing but is increasing through partly hidden avenues. Technology, and the management of technology involving organizational change, could be diffusing from information technology manufacturing, telecommunications, and financial services into manufacturing at large, then into business services, to reach gradually miscellaneous service activities, where there are lower incentives for diffusion of technology and greater resistance to organizational change.

Therefore, logically, each new IT investment should enable a firm or an investor for that matter, to become more efficient and effective. Yet, often, few of the anticipated benefits are obtained within the projected time frame. Actually, in many instances, anticipated benefits fail to materialize until many years after the introduction of the new IT application. This suggests that good policy choices will not only improve ICT benefits to enterprises and public institutions in the longer term but also create the opportunities for the poor to access knowledge that will perhaps improve their quality of life.

#### **2.3.4.5 Improving Access to ICTs through Multi-Purpose Community Centre**

MPCC - "A Multi-Purpose Community Centre is a structure which enables communities to manage their development, by providing access to appropriate information facilities, resources, training and services. In all cases of the effort of the providers should result in more cost effective and efficient provision of services" (Benjamin, P. 1997)

"A MPCC is a place where a number of services are provided by local, provincial and national government, as well as parastatals, NGO's, CBO's and the Private Sector." (Patel, A. 1999)

With reference to the MPCC concept, integrated services, refers to a variety of services that can be accessed from one centre. This means that communities will not have to travel long distances to access services and information, but will actually get that from one-stop

government information centres. An integrated approach will avoid duplication of services and assist in saving costs. Multipurpose community centres have now become a major policy item for expanding access to information and knowledge to under-privileged communities in urban and rural areas. MPCCs are not only the heart of state policies to distribute access without discrimination but also help broaden governance through delivery of public services bringing technologies right to the door of remote communities.

### **2.2.5 Technological Trends and the State**

Full understanding of the significance of any technological revolution and its relationship will require a discussion of the specificity of new information technologies *vis-à-vis* their historical ancestors such as the discovery of printing in china in the late 7<sup>th</sup> century and Europe in the 15<sup>th</sup> century. Here while printing did substantially affect European societies in the Modern Age, as well as Medieval China to a lesser extent, its effects were limited because of widespread illiteracy in the population and because of the low intensity of information in the productive structure. Thus, the industrial society, by educating citizens and by gradually organizing the economy around knowledge and information, prepared the ground for the empowering of the human mind when new information technologies become available (Castells, 1999:31).

.... What must be retained for the understanding of the relationship between technology and society is the role of the state, which by either stalling, unleashing or leading technological innovation, is the decisive factor in the overall process, as it expresses and organizes the social and cultural forces that dominate in a given space and time (Castelles, 1999:13)

It is at the interface between macro-research programmes and large markets developed by the state, on the one hand, and decentralized innovation stimulated by a culture of technological creativity and role models of fast personal success on the other hand, that the new information technologies can blossom. In so doing, they cluster around networks of firms, organizations and institutions to form a new socio-technical paradigm (Castells, 1999:60).

But there is already the equal, or perhaps even greater danger as mentioned above, that the negative consequences of these new technologies will exacerbate the already extremely difficult problems being faced globally by all societies, especially developing countries, While developed countries that made considerable policy reforms in the early seventies and

eighties, most developing nations are still grappling with issues of the environment, health, education, income security, employment, trade and investment.

It is now acknowledged that developing nations cannot mitigate social and economic problems in the information age without embracing ICTs through formulation of national ICT policies. It has also become clear that careful and disciplined attention to planning, designing, implementing, and monitoring such policies could help the maximization of the benefits of ICTs for the whole of society and the advancement of information society.

### **2.2.6 National Information Policy and e-strategies**

Information policy is a term, which has been used to refer to policy initiatives that promote the use of tools and concepts associated with the “global information society”, with a view to realising their potential in achieving national, social and economic development goals. In many cases, integration of the national economy is one of these goals (James, 2001: 1).

Public policy plays an important part in shaping the environment in which individuals and organizations can create wealth and contribute to society’s prosperity. The global and pervasive nature of Knowledge activities means that national governments can no longer act in isolation on such matters (Skryme, 1999:243).

Good policy with regard to the building of the Information Society must rely not only on sufficient technical and material resources (the networks, software and hardware) and skills, but also be coherent with other societal policies (James, 2001:4).

The term e-strategies is now used interchangeably with ICT policies. E- Strategies have to do with developing and exploiting ICT as an accelerator for attaining national development and global competitiveness, local content development, developing infrastructure, human resource development, and introducing ICT applications for public services and business (ECA, 2003).

### **2.2.7. The Importance of the ICT Policies**

The introduction of ICT policies and strategies is principally to assist countries to deploy, harness and exploit ICTs for socio economic development at the local, national and sub-regional levels; and to enable citizens’ access to affordable telephones, broadcasting, computers and Internet services. For this to happen, countries need to adopt concrete

measures that include developing sound regulatory frameworks and building human resource capacity.

Successful policy formulation and implementation are largely dependent on political will, national vision and leadership, underpinned by policy processes that are inclusive, transparent and participative. Given that the focus is on policy implementation, and to ensure that realities of on-the-ground development challenges are kept in mind, the need to formulate policy is a prerequisite to ensure that nations, specially the developing ones, are able to exploit the opportunities offered by the new information economy.

Mansell and Wehn (1998: 261) cited in James, 2001:156, note the importance of ICT policies;

“Exploiting these opportunities [offered by ICTs] requires reflection on the experience that has already been accumulated in the use of ICTs. It also requires renewed commitment to learn from each other’s failures as well as successes. Many of hopes for the social economic contribution of ICTs will not be realized in unexpected ways that could be disconcerting or distractive. National and regional ICT strategies can provide a framework for strengthening the likelihood of positive outcomes and minimising the risk of negative outcomes.”

A number of countries and regions have so far developed ICT policies and strategies with a various degree of success in their implementation. The real benefits of ICTs lie not in the provision of technology per se, but rather in its application to create powerful social and economic networks by dramatically improving communication and the exchange of information.

There are different national approaches to ICT in different countries, Some countries view ICT as a production sector on its self while others regard ICT as enabler of development.. ICT is already being used highly effectively in addressing directly development goals. In Gambia, for example it is being used to achieve better health outcomes. In Chile it is starting to reap significant results in primary school education. In Bangladesh, it created direct employment opportunities for thousands of women and men. South Africa, along with Estonia, are countries among those which explicitly focus on ICT in pursuit of development goals such as those set forth in the UN Millennium Summit. The lessons drawn from these countries is that the key determinant of success is the identification of, and continued focus on both economic and social development goals(DOI, 2001: 5).

### 2.1.8 Western Cape ICT strategy

South Africa has been active in developing its ICT policy and participation at local and international levels. It has established a Presidential ICT policy commission and created various policy forums and studies through the Department of Communications and the Department of Arts, Culture, Science and Technology. It has also developed a strategy under which each provincial government develops and implements its ICT strategy. The Western Cape Provincial Government is one of such entities that have been actively involved in ICT policy formulation and implementation.

The National Information Technology Forum (NITF) is the umbrella body looking in to ways that the information and communications technology will impact on South Africa. This body is divided into the five sectors of government, business, labour, academia and community. The Western Cape Provincial Government (PGWC) recognizes the importance of ICT and recently has demonstrated this with the appointment of a minister responsible for constitutional affairs and technology. According to research undertaken by BMI-Tech-Knowledge, the Western Cape region represents the second largest Internet user population on the continent after Gauteng (Cape Online E-government, 2001: 8).

A National study on MPCC conducted by Al Karki and Peter Benjamin (2004:1), found 30 MPCC in the Western Cape, with 97% with phones, 87% with computers and 57% with e-mails. Over all the centres in provinces were longer established than in other provinces with a quarter established before 1980.

The key aspect of the Western Cape IT Policy is a ten-year pathway towards E-government. The PGWC has approved the Cape Gateway business plan, which aims at creating an E-government portal where all the users (citizens and business) will be able to access all government information from single point a virtual and physical Gateway to the Cape (Cape Online E-government, 2001: 8). ) The policy development process in South Africa in general and Western Cape in particular and the implementation of the Cape Gateway represents a best practice for other countries. This study aims to review the policy process in Western Cape region in order to draw lessons for Eritrea.

### 2.3 Brief review of the ICT sector in Eritrea

The cornerstone of Eritrean development policy is 'self-reliance' and avoidance of heavy borrowing which can have implication on the development of ICT in the country. As mentioned in the introduction of this study, 'Aid' is not accepted with enthusiasm by Eritrean leadership. Despite less interest in development aid that often attaches computer equipment to all donations; the ICT situation in the country has been robust. As in the case of the African continent, there has been an invasion of microcomputers in Eritrea.

Immediately after the end of the war for liberation, in 1991, there was an increase in the number of microcomputers entering the country. According to Kifleyessus (1999:228), the first computers to arrive in Eritrea were in the 1984/85 academic year at the University of Asmara as part of a research project in the Department of Biology. These were four Mac Paste; next computer was installed at the then National Bank of Ethiopia, Asmara Branch, in 1986. A few PCs were also introduced in EPLF head offices in Sahel after the mid 1980's.

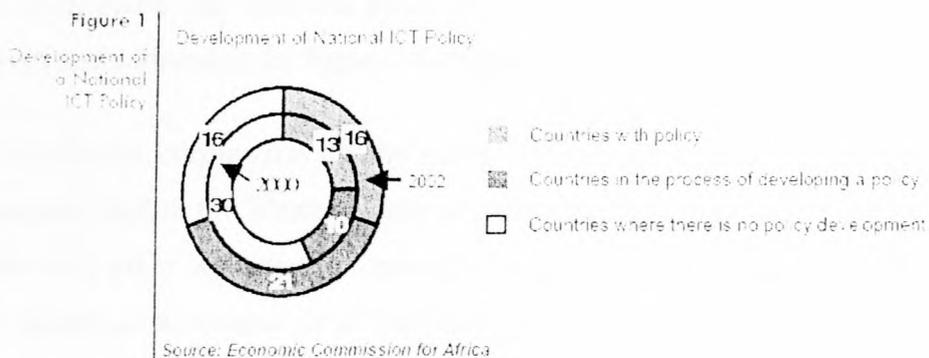
Now the picture is different concerning the number of computers in the country. In the capital almost every major avenue has cyber-cafes an indication of the diffusion of information technology in Eritrea. According to unofficial records from the Telecommunication Corporation of Eritrea, the number of the Internet users has now reached 5000 following its introduction in 2002. Efforts are underway to tackle the broadband challenge as well as the affordability of ICT services, including the Internet.

The number of Internet users is increasing by the day. International agencies and the Government Civil Services are the driving forces. The skilled Eritreans from the Diaspora are the main players in regard to support services. Some of them have already established private computer service businesses.

Even though, Proclamation No.53/1994 saw the launch of the Eritrean Information Systems Agency(EISA), so far there is no a finalized ICT policy in Eritrea. This study aims to draw some lessons from the experiences of other countries in order to provide an input to the ICT policy in Eritrea. Lessons and the latest development in ICT policies in Eritrea are discussed in Chapter.

### 2.3.4. e-strategies in and outside Africa

Eritrea is one of the few remaining countries in Africa with no National ICT policies. Development organizations such as the Economic Commission for Africa (ECA), the International Development Research Centre and the UNDP have been assisting African countries in their endeavours to initiate, formulate and implement national e-strategies to achieve development goals. The success is evident in that the number of countries with ICT policies increased from 13 in 2000 to 16 in 2002, while countries in the process of developing a policy jumped from 10 in 2000 to 21 in 2002. Thus, as shown in figure 1, the number of countries without a plan was reduced from 30 to 16 in 2002.



### Figure 2.2: Development of National ICT Policy in Africa

Source: DOI, 2001

This progress has largely been due to increased awareness among policy makers and key stakeholders of the importance of ICT policies and plans. As a result, various international and regional agendas are placing more emphasis on and including ICTs in their deliberations. NEPAD for example, identifies ICT policies and regulations as a priority area.

It is critical for Eritrea to take into account the economic and the human dimension of entering the information age. Given the impressive size of the country's digital agenda and the present economic challenges of the government, internal and external partnership is essential for strengthening and creating strategic alliances. ICT should be mainstreamed in the national development plans, infrastructure development capacity building, partnership and participation in the global economy.

## **Chapter 3: South African Policy initiatives / the Political will**

### **3.1 Introduction**

This chapter presents progress made by South Africa in promoting ICTs to support equity and economic growth. The South African Government is one of those governments that recognized the potential benefits to be gained from harnessing the power of ICT. It is working to create a technically literate workforce that can contribute to a dynamic economy and participate in the Information Society. The Government has established two ICT advisory councils under the leadership of President Thabo Mbeki, which are comprised of national and international ICT experts and play a role to inform the Government's decision-making in this area. The government has launched many initiatives that are aimed at integrating ICT into people's lives and addressing the legacy of inequity in this country (*bridges.org* 2002).

In order to compile information on the many ICT-related government initiatives in South Africa in general and in the Western Cape in particular, the researcher conducted searches of Government and other websites for information and contacted a number of individuals in person, by telephone and email. It is important to note that these results are not exhaustive, and only represent the government initiatives that the researcher was able to discover.

### **3.2 The early steps of the Initiatives**

For South Africa, social and economic development, global competitiveness and social equity are all key issues, which are addressed and reflected in public policies and practical projects. The South African government has been active in developing policy for the information society ever since it presented its first attempt at conceptualizing the challenges of the information age in the context of development at the Information Society and Development (ISAD) conference held in Johannesburg in May 1996 in a paper entitled "The Information Society and the developing World: a South African Approach". The most important feature of the document as cited by Lucien (1996: 10) is that it sets the objectives of social and economic development as the foundation for any discussion about the information age. It argues:

"The central thread connecting all government-led policy initiatives is the need for innovative approaches to the social and economic challenges faced by South Africa as a developing society in the post apartheid era"(Republic of South Africa(a),1996)

The then deputy President, Thabo Mbeki, argues that the information and communication revolution presents opportunities for South Africa to leapfrog stages of development, and for achieving a better quality of life for all citizens. He also states that the “the ability to use information effectively is now the single most important factor in deciding the competitiveness of countries.”

The issue of social equity and the challenge of empowering the people and communities were also discussed in the ISAD paper. “The information age has not so far contributed to a reduction of inequalities between people, regions and countries. Where ICT has entered the social arena, it has not operated on a communal basis but rather on an individual one: personal computers rather than community access. Empowerment through IT means that information-literate individuals and communities are able to take advantages of the educational, work, and communication possibilities offered by ICT to hold their own in the information society.”(Republic of South Africa (a) 1996: 7)

The ICT development process in South Africa can be characterised by sets of policy initiatives that created the building blocks for the information society. According to James (2001:38), information and communication policy cuts across many fields. Government departments such as the departments of Communication; Trade & Industry; Arts, Culture, Science and Technology developed some of the policy processes relating to ICT’s. A number of ICT policies were developed between 1994 and 1996. Some of the ICT policies that were established during the transformation period include the Reconstruction and Development Program (RDP), the White Paper on Science and Technology and the White Paper on Telecommunication along with Telecommunication Act 103 of 1996.

The implementation phase of 1997-1999 culminated with the establishment of the South African Telecommunication Regulatory Authority (SATRA); the creation of a Universal Service Agency (USA) and the launching of the e-commerce debate physically and virtually. The Government Communication and Information Systems (GCIS) were also launched; a Broadcasting Act of 1999 and the South African Information Technology Industry Strategy (SAITIS) project commenced.

The evaluation period began during the year 2000 with assessment of policies and regulatory framework and that led to major consolidation of SATRA and Independent Broadcasting Association (IBA) to form the current the Independent Communication Authority of South

Africa (ICASA). A Green Paper on electronic commerce was launched for public comments and a new telecommunication policy was approved by the cabinet. The establishment of the State Information Technology Agency (SITA) that merged the IT services and networks of Defence, Police and Civil service took place during this period.

The multitude of ICT policy-related activities above have been undertaken in South Africa since the 1994 democratic elections, and many lessons relating to the policy formulation and implementation provide an insight to the complex process where policy is developed through a series of building blocks. The South African policy formulation activities and process covered in this study, provides an interesting example for the rest of the world in its focus both on equity and economic growth and the creation of a new ICT industry.

For South Africa, social and economic development, global competitiveness and social equity are all key issues that must be addressed and reflected upon in public policies and projects. In addition to developing policy for the information society, the South African government was also focusing on implementing policies by first producing both green and white papers and then launching programmes. Among the government endorsed South African Information Society pilot projects were (Lucien. A, [et.al] 1996:13).

- multipurpose community centres ;
- centres for excellence, expertise and research;
- open and efficient government ;
- an IT national qualifications framework ;
- a multimedia archive for vernacular culture.

The following table (3.1) summarizes the initiatives in the South African ICT related policy landscape and the context of the policymaking process in the country. The table shows that, by the end of 2000, information society (IS) policy had become complex. The different policy processes impacting on, and relating to, the information society came from a wide variety of sectors, and different departments were driving the policy processes. It is beyond the scope of this paper to elaborate on all of these initiatives; the paper would rather concentrate on broad developments in policy initiatives over time including their financing and implementation.

**The most important policy initiatives related to ICTs and the information society**

Policy documents or initiatives	Description of the programme or part of the programme	Responsible department or institution
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**Development Strategy (economy, industry, technology and innovation)**

White Paper on Science & Technology (Nov 1996)	Science and technology policy geared at innovation and growth	Arts, Culture, Science & Technology
Foresight (June 1999)	Prospective study directed at a long-term economic and industrial growth strategy	Arts, Culture, Science & Technology
South African IT Industry Strategy (2000)	Industrial Strategy for the IT-sector	Trade and Industry
Growth, Employment and Reconstruction (June 1996)	Neo-liberal policy framework for economic development	Presidential Office and Department of Finance
e-commerce	Overall policy to stimulate and regulate electronic commerce	Communications

**Infrastructure (networks and infrastructure)**

Telecommunications Act (Nov 1996)	Establishes a new policy framework for telecommunications	Communications
Telkom	Under the new framework responsible for network extension and universal service	Communications (as major shareholder)
Satra	Responsible for regulating the telecommunications	Communications

	sector	
USA	Responsible for the promotion of universal service and access. De facto responsible for the implementation of telecentres	Communications
GCIS	Responsible for the implementation of MPCCs and the co-ordination of telecentre initiatives	President
Technology-Enhanced Learning Strategy (May 1997)	Strategy to translate the earlier TELI into concrete initiatives and projects	Education
Centre for Educational Technology and Distance Education (1997)	Centre Responsible for policy preparation in respect of distance education and technology in education	Education
Schoolnet SA (Nov 1997)	Infrastructure in the educational Sector	Education, Communication, Trade and Industry
State Information Technology Agency	New structure responsible for IT in government. Should lead to a better integration of systems and networks	Public Service and Administration

**Content and applications**

Technology-Enhanced Learning Strategy (May 1997)	Strategy to translate the earlier TELI into concrete initiatives and projects	Education
GCIS	Responsible for governmental	President

	communication and development communication	
White Paper on Broadcasting Policy (May 1998)	New Policy framework for the audio-visual sector	Communications
Broadcasting Act (April 1999)	Legislation reforming the audio-visual sector	Communications
School net SA (Nov 1997)	ICT applications for the educational sector	Education, Communications, Trade & Industry

**Skills**

Education policy in general	Policy relevant in as far as it provides people with the right skills to function in the information society	Education
National Qualifications Framework (from 1996)	Qualifications and Certification system for the education system	South African Qualifications Authority

**Institutional capacity**

White Paper on Public Service (Nov 1995)	Reforms the old apartheid structures into one public service with one public administration system	Public Service and Administration
Educational and vocational policy in general	Policy relevant in so far as it provides people with broad skills to function in society and in modern institutions and organizations	Education, Labour

Employment Equity Act (Oct 1998)	Sets out the policy framework to support disadvantaged grouped in finding employment	Labour
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**Table 3.1: The most important policy initiatives related to ICTs and the information**

*Source: Aundehove, 2003*

### 3.21 Financing of ICT and other development projects

The financing and maintaining of ICT for development projects is one of the most important aspects of the policy process in South Africa. Information Society projects are competing with equally important reconstruction and development projects (RDP) for limited budgetary resources. Innovative financing models like those in Malaysia and Singapore, public-private co-financing models have been important strategies for establishing national information infrastructure and services (Lucien, [et.al] 1996:11). Build, Operate and Own (BOO) or Build, operate and Transfer (BOT) models (the South African example would be toll-roads) have been used to source major private sector investment in multi-million rand economic development projects (Lucien, [et.al] 1996:12). Experiences elsewhere show that the government cannot finance the entire ICT project without involvement of the civil society and the private sector. These play different roles at different stages of ICT policy development and implementation.

### 3.3. Key Role players in ICT in South Africa

According to Lucien et.al (1996) the most important key players in the development and implementation of ICT in the country at that early stage of the policy development, are listed [below]

#### 3.3.1. The Central bodies and committees in the ICTs

- a **Cabinet Committee on Information Society and Development** debated on broad information society issues and legislation for the information society and ICTs
- a **Select Committee on Communications** reviewed draft legislation on communications prior enactment

- **Central Computer Services** planned designs and modified the information systems to enable the institution to capture, verify and validate quantitative data provision to the government, private sector and other institutions
- **The South African Communications services** made use of existing technological and communication infrastructure to communicate government policies both internally and externally

### 3.3.2. Parastatals

- **The Development Bank of South Africa** was instrumental in financing of telecommunications and national information infrastructure including public-private sector co-financing
- **Telekom** has been the provider of telecommunications, information services and products
- **The Centre for Scientific and Industrial Research(CSIR)** offered fundamental ICT support in the transfer of knowledge and information
- **Eskom** provided energy and electricity for telecommunications infrastructure

### 3.3.3 National departments

- **The Department of Post, Telecommunications and Broadcasting** was responsible for telecommunications, ICT policy and planning, facilitating NII implementation and financing
- **The Department of Arts, Culture, Science and Technology** was a key player in promoting science and technology research, innovation, application development in support of socio-economic development supporting on-line arts and culture information science
- **The Department for Public Service and Administration** co-ordinated policy, planning, implementation of information management and information technology strategies to improve government services to the public and set standards for IT in government
- **The Department of Health** was instrumental for launching telematics and telemedicine and a National Health Information System including patient identification, registration etc.

- **The Department of Education** advanced the uses of ICT to enhance teaching and learning, including distance education
- **The Department of Welfare** launched computerised pensions payment systems
- **The Department of Trade and Industry** established business service units and trade points supporting emerging South African “infopreneurs”, SMMEs and IT developers
- **The Department of Finance** was instrumental in reviewing the performance of ICT budgets and auditing ICT implementation in government’s ICT expenditure
- **The Department of Foreign Affairs** has played a key role in promoting international cooperation, co-ordination of international liaison with players in the Global Information Society, G15 and the developing world
- **The Department of Home Affairs** launched a national population registration system
- **The Department of Labour** was concerned with the Human Resources Development in ICT arena, and thus the National Training Board and South African Qualifications Association’s approval of ICT national qualification framework is a result of this concern
- **The Department of Safety and Security** facilitated the use of ICT to improve and promote community safety and security

#### 3.3.4. Independent bodies

- **The Communications Task Force** reviewed government communication policy, structures, functions, budgets, ownership etc. It defines the information delivery mechanisms and examines international communication functions on information dissemination research and makes recommendations on new government communication policy, structures, functions etc.
- **The Independent Broadcast Authority** was the body which was in charge of protecting and ensuring the viability of public broadcasting services setting conditions regarding local television content and South African music
- **The National Telecommunication Forum** was a key player in defining broad telecommunication development strategies in South Africa.

### 3.3.5. Provincial Structures

Provincial ICT Structures were mandated with provincial policy, budgeting, planning and implementation. All provinces have an ICT committee (PITCC).

The above shows that the ICT policy work was not left to a few organizations but decentralised throughout the country and hierarchies so as to provide impetus for its implementation.

### 3.4. Key ICT Strategy Initiatives at the National Level

According to survey of SA Government-led ICT initiatives by *bridges.org*, the broad areas that were covered in the policy process were:

- national ICT strategy,
- e-government,
- telecommunications liberalisation,
- ICT sector development and investment,
- trade promotion,
- local software and content generation,
- policies with regard to satellite technology,
- telemedicine and healthcare, and
- Flagship projects

The *bridges.org* study covered recent ICT-related undertakings by various Government departments including: The Department of Communications (DoC), Department of Trade and Industry (DTI), Department of Arts, Culture, Science and Technology (DACST), Department of Public Service and Administration (DPSA), Department of Education (DoE) and the Department of Health (DoH); government agencies including, the State Information Technology Agency (SITA), Government Communication and Information Systems (GCIS), and agencies in partnership with the private sector. The following section describes these initiatives in detail.

### 3.4.1. SATIS and the Department of Trade and Industry Programme

The DTI was among the major government agencies that developed a strategy for the sector following extensive research and a number of related initiatives under the umbrella of the South African Information Technology Industry Strategy (SAITIS) project. SAITIS was a bilateral project between the South African Government represented by the DTI and the Canadian Government represented by the Canadian International Development Agency (CIDA), with PricewaterhouseCoopers (Canada) as the executing agency. The objective of the project was to further the development of the ICT Sector and it is intended to be complementary to and supportive of broader socio-economic development goals, with emphasis on social upliftment and empowerment.

The SATIS project result indicated that while South Africa was amongst the leading developing countries in the adoption and diffusion of ICT, it was slipping in terms of digital capability. This was primarily due to the current policy environment, which has not succeeded in broadening the industry's base or bridging the digital divide. Following the study, the DTI devised a five-year plan that states that: "Through the application and diffusion of digital technologies, South Africa will achieve considerably higher levels of social development and strong sustainable and equitable economic growth. South Africa will be a catalyst in Africa and other developing countries by pioneering information and communication technologies suited to developing countries, and diffusing these products and services". In consultation with other Government departments, the DTI has also identified eight factors that are critical to a successful ICT strategy:

- Developing human capacity: skills and knowledge
- Cost effective and ubiquitous ICT network infrastructure
- Sustainable growth of the domestic ICT industry
- Strong content and application development for domestic and international markets
- Rapid diffusion and adoption of ICTs through the economy
- Government: a model user of ICTs
- Enhanced innovation and R&D capabilities
- Proactive, coordinated, and transparent policy and implementation processes

### **3.4.2. The Electronic Communications and Transactions Bill**

One of the key achievements in the South African ICT policy process was the promulgation of the Electronic Communications and Transaction Bill in 2002. South African Parliament enacted The Electronic Communications and Transactions (ECT) Bill in June 2002. Chapter II of the Bill states that within 24 months of the legislation being adopted, the Minister of Communications, in consultation with members of the Cabinet, must have developed a five-year national e-Strategy for South Africa. This far-sighted and comprehensive piece of legislation has the potential to deliver not only a national strategy but also act as the catalyst that can draw together the various efforts currently under way. The e-Strategy must include detailed plans and programmes that will address the development of a national e-transactions strategy; the promotion of universal access, e-readiness, human resource development and small, medium and micro enterprise (SMME) development; empower disadvantaged persons and communities; and contain definable objectives and timeframes.

### **3.4.3. National ICT Awareness**

Raising awareness was a key aspect of the policy process of South Africa. Issues such as universal access and bridging the digital divide have become key items of public awareness campaigns. For example, in its recent advertising campaigns and in requesting telecoms co-operatives to step forward and provide services in areas with poor or marginal teledensity, the Department of Communication has called for bridging the digital divide. South African Telkom has also launched a youth-focused Internet "edutainment" project called e\*telpal". The project is centred on encouraging and promoting communication, education and the learning experience through technology. Using the Internet, young South Africans will now have the opportunity to make electronic "pen pals" or e\*telpals online on the e\*telpal Web site.

### **3.4.4. E-Government Initiative**

The major e-government initiative was the gateway project that aims at providing one stop shop service to public services. The DPSA, SITA, and the Centre for Public Service Innovation (CPSI) are the key players of the concept of a Gateway project and have been holding stakeholder-briefing sessions on the Project. The Gateway project aims to provide 24 hours a day, 7 days a week government service delivery to citizens irrespective of

geographical location. The project hopes to initiate a broad-based consultative process to obtain the support and cooperation of all departments and institutions that provide services to the public. The DPISA also commissioned an Inventory of Government Information Systems (IGIS) in early 2001 to: (a) provide appropriate information to guide planning to enhance public service delivery, and (b) devise a quick, simple, flexible and cheap system/mechanism to keep an accurate and up-to-date inventory on Government information systems (e.g. applications, systems software, hardware, networks, skills, etc. The Council for Scientific and Industrial Research (CSIR), a quasi-government research organisation, is working on programmes for enabling government-to-citizen transactions.

The ECT Bill also makes reference to e-Government in its Chapter IV, where it provides for the electronic filing and issuing of documents, including licences, permits and payments. This paves the way for a wide range of public services to become faster, more efficient and more secure, and will have the added effect of providing the first electronic interface with Government - and the first exposure to ICT- for the majority of South Africa's citizens.

At the Provincial level, Gauteng Province has formed the (GSSC) to provide services to the Provincial Government, including financial services, human resource management and procurement.

### **3.4.5. Telecommunications Liberalisation**

The Telecommunications liberalization process was the most significant initiative in the South African ICT policy process. Noteworthy efforts are under way to liberalise the telecommunications sector, including the passing of the Telecommunications Amendment Act of 2001, which legislated the end of the Telkom monopoly in South Africa and the Government's recent Invitation to apply for the Second National Operator consortium.

In addition, a Telecoms Business Unit has been established in the DoC to deal with policy and legislation in the telecommunications sector. The objective is to create a new policy environment, and deliverables include policy formulation, legislation, an Invitation to Apply (ITA) issued for new licences and the licensing of SMMEs, and formulates the Government's position on the deployment of broadband technologies. The Unit has also been tasked with managing the Initial Public Offering (IPO) for Telkom and with steering the Government's efforts to continue gradually liberalising the telecommunications market.

The Universal Services Agency (USA) has also issued a call for proposals on a research programme to define the categories of "needy people" and "universal access and service", and measure the current extent of universal service and access. The objective is to better inform the USA and DoC in their deliberations on extending access initiatives.

The Independent Communications Authority of South Africa (ICASA) has also passed directions on tariff rates to ensure more general affordability. However, questions continue to be raised about the level of ICASA's independence, its ability to regulate the industry and whether it has the finances to recruit and maintain the level of expertise required. Concerns have been expressed that if ICASA is not seen to be independent and fully capable of regulating the industry, South Africa will not be able to attract international investment to the telecommunications sector (*briges.org, 2002*). Nonetheless the ICASA remains one of the most organized telecommunications regulators in the region that contributed to the policy process in South Africa.

#### **3.4.6. ICT Sector Development and Investment**

ICT sector development through support to education and research and financing innovation by the public and private sector has been the key aspect of the policy implementation process. A partnership between the DTI, Telkom and the University of the Western Cape (UWC) recently established the Centre for Internet Computing at UWC. This follows upon a ZAR1.3 million launch of the Telkom Centre of Excellence (CoE) at UWC, a joint project of Telkom, Cisco Systems and UWC. Funding by the two companies is matched by a contribution from the DTI's Technology and Human Resources for Industry Programme (THRIP). The CoE programme has contributed significantly to the growth of telecommunications and ICT skills in South Africa. It has also yielded substantial benefits for the universities and technikons involved in the programme and has assisted Telkom in solving technical problems and cutting costs. Cisco Systems will contribute R300,000 annual sponsorship to the programme, Telkom provides R363, 000 and the balance comes from the DTI.

The DoE's Institute for Space Applications and Knowledge at Houwteq has established the first Cisco Systems "Networking Academy" in Sub-Saharan Africa. The Houwteq Project is a Government-led Internet, space and software applications development programme that targets historically disadvantaged students who show science, engineering and technology potential.

The DACST was also involved in the establishment of a university dedicated to excellence in ICT that is planned to promote world-class development and provide an attractive place to work and study. A secondary objective is to encourage those with valuable ICT skills to stay in South Africa and help grow the ICT sector.

### **3.4.7. Providing entrepreneurship and other support to the ICT sector**

Various ICT entrepreneur initiatives are also underway in support of the policy implementation. The ICT-SMME Support Programme scheme of the DTI aims to foster a thriving community of SMMEs in the ICT industry by building their skills and helping them to grow a base of corporate customers. The initiative is a public/private sector partnership between market research firm Forge Ahead BMI Tech-Knowledge, and Ntsika, the government agency mandated to foster SMME development. Ntsika has outsourced the running of the programme to Forge Ahead BMI-T for the next two years and Hewlett Packard recently joined as the project's technology partner.

The DTI has also made Sector Partnership Funding available to the ICT sector. One notable example of an initiative that was aided by DTI funding under this programme is Cape Town's Bandwidth Barn, a multimedia/IT incubator, which has been so successful that a second and third Bandwidth Barn are under consideration.

The DoC's Telecoms Business Unit has been tasked with developing an institutional framework to nurture the development of SMMEs in the ICT Sector.

During 2001 the DACST used money allocated to it from the Poverty Relief Fund to help people move out of poverty through the creation of new businesses and by supporting entrepreneurs. Initiatives supported include craft industries and technology-based small enterprises. The aim is to ensure that these projects become sustainable and contribute to job creation through training, the adoption of technologies and market development strategies.

The GODISA Programme is another collaborative venture supported by the DoL, DTI, DACST, CSIR and the European Union (EU). The Programme started in January 2001. It aims to increase economic growth and employment creation through the enhancement of technological innovation, improvements in productivity and the accelerated international competitiveness of South African SMMEs. The European Union is funding the Programme Management Unit (PMU) and the establishment of three Pilot Centres: an Innovation Support

Centre (ISC), a Technology Demonstration Centre (TDC), and a Software Technology Incubator (TI). DACST and DTI are funding five new Technology Incubators (TIs) as of April 2002. The South African Government, private sector and other donor contributions to GODISA will fund several other TIs over the next three to five years. The primary means through which the GODISA Programme objectives will be achieved are technology support interventions and, in particular, the establishment of several Centres which will target high growth potential SMMEs. The purpose of the programme is improved enterprise performance. The main issues to be addressed through the GODISA Programme are:

- Outdated technology used by many SMMEs.
- Poor (or non existent) technology support to SMMEs.
- Very low entry rates of SMMEs into the productive "value added" sectors.
- High failure rates amongst start up SMMEs.
- Poor access to facilities for the testing and promotion of innovative ideas.

The Government's White Paper on Science and Technology of September 1996 as cited by bridges.org 2002, specifically recognised that accessibility to appropriate and applied technologies for the SMME sector, within an integrated National System of Innovation, is a critical factor of success for future sustained economic growth and an equitable distribution of wealth. The DTI and SAITIS have produced the ICT Strategy Development Framework, which has identified a number of priority actions needed to provide sector support to the ICT sector. Mention has also been made of developing a sector portal.

In addition to the above entrepreneurship initiatives there are programmes specifically targeting small and medium enterprises. The National Advisory Council on Innovation (NACI) provides a comprehensive list of sources of funding for innovation, ranging from funding for research and development to starting your own business. There is also a useful library of guides and documents on how to search for and get financing, as well as tools to assess the applicant's level of financial readiness (bridges.org, 2002).

#### **3.4.8. Trade promotion**

The ICT policy was also aligned with foreign direct investment and promotion of trade. For example, CSIR and DTI have signed a bilateral agreement to align and enhance their interaction in support of national goals for trade promotion. The DTI/CSIR bilateral includes

the development of an Internet-based portal for the chemical industry in Southern Africa, as well as the development of a multimedia CD ROM and website that conveys information on the New Partnership for African Development (NEPAD). Tourism organisations such as SATOUR and the Tourism Business Council are using ICT and web technology to promote tourism.

### **3.4.9 Local software and content generation**

Another important area of policy provision was the development of local content and promotion of local software development. The report published by NACI on Open Standards and Open Software in South Africa. A critical issue for addressing the Digital Divide as early as in February 2002, discusses the nature and impact of open software and makes recommendations for South Africa to take full advantage of this rapidly growing phenomenon in ICT. A wide range of initiatives are underway to install Linux operating systems in libraries and create Linux laboratories, driven by both Provincial Government and development agencies. CSIR is also engaged in research on the use of open source in government and education.

In response to a proposal from the Pan-South African Language Board (PANSALB) and the National Language Service (NLS), the DACST has undertaken the Human Languages Technology (HLT) initiative, and appointed an Advisory Panel on HLT. The Panel aims to establish a sustainable infrastructure for HLT development that would be conducive to language and speech technology applications in all of the official languages. This will be an enhancement of the e-Gateway initiative of the National Government so it can serve citizens electronically in their language of choice. The Panel envisages the development of an HLT industry in South Africa similar to that existing in multilingual Europe, but scaled down and adapted to local needs. CSIR is also carrying out research into HLT, multicultural computing and language-related software development.

At the Provincial level, Gauteng Provincial Education Department has begun initiatives to link the language of ICT to local languages to boost interest in ICT among school pupils.

### **3.4.10. Satellite Technology**

South Africa's telecommunication regulation provides incentives for the use of satellites for social and economic development. The DoC has high-bandwidth communications satellites

that are available for use in a variety of applications, including delivery of health services and education to remote locations. To take advantage of these assets, the African Institute of Space Science (AISS) is setting up a number of operational centres, drawn from existing facilities, with researchers working in different focus areas. Links with industry are envisioned (*bridges.org, 2002*).

#### **3.4.11. Education**

The DoC/DoE Strategy for ICT in Education promotes basic computer literacy training for compulsory school levels. Facilities are being deployed at specially selected schools with the aim to manage the curriculum and ensure that all school-leavers have a basic level of use in ICT. Teachers are using the facilities to download curriculum materials and content. A further component in this strategy is to provide for teacher development. Providing such an education programme to more than 300,000 teachers will require a distance education model. Using the Internet for teacher education will help under-qualified teachers, qualified teachers without relevant content knowledge, and those needing induction into the new model of Curriculum 2005. Courses are being developed to prepare existing teachers for the new learning areas of Curriculum 2005 as well as to provide them with exposure to computer literacy as basic management skills needed to maintain the computers. Emphasis is being placed on ensuring that future generations of teachers emerge from higher education institutions with an understanding of how to incorporate and use ICT in their teaching.

The DoE has also created an education portal that will host a range of educational materials and will have password protected areas for teacher use.

The Shoma Project developed by Multi-choice is based at a number of different teacher training centres and uses satellite technology to transmit interactive courseware developed in collaboration with higher education units for the purpose of teacher education. These initiatives along with schoolnet South Africa promote the implementation of the policy to harness ICTs in delivery of education in the country. Activities are also underway to improve the current educational infrastructure in the country:

In 2000, the DoE undertook a School Register of Needs that found qualitative improvements in the provision of basic facilities since the first survey in 1996. The survey looked at, amongst other things, telecommunications, power supply, and multimedia resources.

A complementary study of computers in schools, by the Education Policy Unit at the University of the Western Cape, provides a more detailed picture of computer distribution and points towards which schools to target for deployment and when. The DoC and DoE are developing a strategy for ICT in Education. Released in January 2002, it focuses on the educational use of new technologies, where learners learn about ICT and how to use it while at the same time learning various subjects and curriculum areas. The strategy represents a platform for the collaboration of government and the private sector and addresses participation in the information society, the impact of ICTs on access, cost effectiveness and quality of education and the manner in which ICT changes the education process. The strategy was drafted so as to be consistent with the aims of the President's International IT Advisory Council, and the seven key areas that have been outlined for planning. The DoC is tasked with ensuring that all schools are on the telephone network (dependent on access to power and deployment of networks by the operators). DoE (with DoC and others) is to ensure that all schools, teacher centres and district offices are connected. Necessary agreements on an "e-rate" tariff are to be implemented with the operators, with a subsidy possibly extended to include the provision of a 0860- dial up facility. The DoC's Telecoms Unit is conducting an audit and analysis of the current ICT infrastructure in schools. The unit has also been tasked with developing an Internet-based distance learning infrastructure, including a website, TV recording studio and (existing) radio station.

Numerous other initiatives are underway in the field of ICT in education, including provincial departments of education, Telkom and other parastatals, the private sector, NGOs and the donor community. Some notable developments include:

Gauteng Online initiative of the provincial DoE: the Provincial earmarked 500 million to equip all schools of the province with computers by 2005, as part Blue IQ Project to develop broad infrastructure for a 'smart' province. Khanya project of the Western Cape DoE: This project deals with delivering education in the classroom through technology. A total of R40 Million has been approved for the project. It is envisaged that approximately 100 schools will be equipped with computer labs in this financial year. Microsoft donation: It was announced in the Presidential Address in February 2002 that Microsoft will provide free software for all of the country's 32,000 government schools. Studies currently undertaken at the ISSA include potential for expanding satellite based education courses and MCSE training.

### 3.4.12 Telemedicine and Healthcare

As part of the policy implementation process, the Department of Health (DoH), is running a Telemedicine Pilot Project aimed at developing a basic cost-effective solution that could be replicated throughout the country, with a particular focus on historically disadvantaged people who have not previously had access to Specialist Health Care (especially in rural areas). The National Health Information System of South Africa (NHIS/SA) has been conceived as the body to co-ordinate the work. The NHIS/SA Committee will play a major role in ensuring that adequate monitoring and co-ordination occur in the implementation of the Tele Medicine Projects. It was envisioned that after one year the provinces, the national office and the NHIS/SA Committee would evaluate the Tele Medicine Project and produce a report that will guide further rollout of the project. The programme of the South African Telemedicine System will be implemented on an incremental basis to allow its users (health care providers and administrators) to obtain skills in modern medical technologies and see concrete benefits early in the development process. The CSIR is also working on a telemedicine corridor project, and is also looking at the use of mobile technology in Eastern Cape Province rural hospitals.

### 3.4.13 Flagship projects

Flagship projects often aim to promote ICT awareness and encourage the use of ICTs. A number of projects and initiatives are either planned or under way in South Africa that could serve as a Flagship project, including: The Home Affairs National Identification System (HANIS) which aims to convert 40 million paper identity records to digital form. The second phase of the HANIS project is to transfer from paper-based citizen identity cards to an electronic version through the issuing of smart cards. HANIS will store and match all South Africans' identity details, photographs, and fingerprints. The stated objectives of the new system are to improve the effectiveness of government and to deliver public services more efficiently. The introduction of the smart cards also aims to help combat crime, particularly identity fraud, which is a major problem in South Africa. It is also intended that citizens will benefit through faster processing of pension and welfare payments and the end of the long queues at the Department of Home Affairs.

**3.4.14 The Golaganang Initiative** is another flagship project that was launched by the DPSA and spearheaded by Hewlett Packard's head of global public business, Jos Nickmans. The

partners include Telkom, CS Holdings, Standard Bank and Microsoft. The initiative is an attempt to address inequalities of access to technologies by offering reduced cost access and technology to public servants. The project is expected to reach 50,000 people within 6 months.

The above indicates that a number of projects are underway to translate policy into action. The pitfalls are that there are diverse ranges of initiatives under way both inside and outside Government that lead to duplication of efforts and waste of resources. There is a pressing need for all of these efforts to be co-ordinated now if the proposed e-Strategy is to bear the results that the Government intends. But it is not apparent whether there is an inadequate level of co-ordination among these efforts. A high level of co-ordination will be required and would sit well under the auspices of the body driving a national e-strategy. Just as there is a need for Flagship projects to demonstrate the benefits of ICT in a real and meaningful way, there is a need for a national champion to lead the strategy and provide the vision and co-ordination required. There have already been attempts to co-ordinate efforts at certain levels (e.g. the International Marketing Council has begun to coordinate both an international and national awareness creation campaign with the Government Communication Information System, and to promote South Africa as a preferential investment destination with Trade and Investment South Africa).

Coordination could also be achieved through decentralization of ICT policy development and implementation at provincial levels. The Provincial Government of the Western Cape has a multitude of information policy sub-components that have been undertaken in the Province since 1998 and also subsequently justified the inclusion of the ICT policy components of Provincial Administration of Western Cape (PAWC) as part of the building blocks of information policy. The Western Cape is surely included in all the above initiatives at national levels. However the decentralization of ICT policy development and its implementation at provincial level in the Western Cape presents an interesting case that is exemplary to other provinces and countries.

### **3.5. ICT Policy Development of the Provincial Government of Western Cape (PGWC)**

Government in South Africa is divided into three spheres: Local, Provincial and National whose responsibilities are outlined in the Constitution. National government makes laws and sets policies for the whole country. It also provides certain services (e.g. issuing of ID books).

Provincial government can make and administer provincial laws in its areas of jurisdiction (e.g. liquor licences, provincial planning, cultural matters, recreation, roads and traffic). It shares certain areas with national government, such as health, education and social services. Local governments' role includes local service delivery, promoting a safe and healthy environment, and promoting development.

Governments have a political and an administrative arm. The political arm creates the laws and policies. Citizens elect representatives to the national parliament, the provincial parliament and the local councils. The Administrative arm is the part of government that implements laws and provides services. It consists of all the Departments (e.g. Health, Agriculture).

In this context all the policy initiatives that have been undertaken by the national government by default includes the provincial policy initiatives. ICTs development is one of the key areas where provincial and central government need to join hands. The Western Cape is one of the most advanced provinces of South Africa that has integrated ICT in all spheres of its development. Expressing on the ICT for development approach of the PGWC, Dr Harold Wesso (April 2004), the head for the Centre of E-Innovations of PGWC, responsible for all the Provincial Government's e-strategies, "Any attempt of national development strategy which does not include ICT would be waste of time"

In the year 2001, in DEDAT a new branch "Knowledge Economy and E-government" was launched in Cape Town, resulting in the Cape Gateway and Cape online massive projects. The programme is prescribed in a **White Paper on Preparing the Western Cape for the Knowledge** that stipulated Knowledge Economy involves new ways of working, new management practices, new competencies amongst employees and a new role for government and its regulatory agencies (White Paper, 2001:11). The paper argued that a challenge is posed by the rise of the knowledge economy, in the new millennium, economic opportunities will increasingly lie in the people and the knowledge they have, rather than in capital or natural resources. Well-educated societies, skilled labour forces and economic systems that facilitate the acquisition of knowledge will achieve sustainable economic growth and development and regions such as the Western Cape now have the potential to be home to knowledge workers that serve the world (White Paper, 2001:19)

As a result, the Western Cape Province initiated the Cape Online programme in order to develop an innovative e-environment and competitive knowledge-based economy in the province. Part of the programme focuses on the promotion of e-government services through the Cape Gateway project.

The E-innovation centre of the PGWC sponsored Cape Gateway Development projects aims to provide improved access to quality provincial government information resources and services via the newly launched Cape-gate way portal. (*Capegateway.gov.za*)

The purpose of this cutting edge portal is to serve as a single point of access to facts on government services, projects and publications to citizens and businesses. It is believed that improved access to information will also enable provincial government to improve service delivery and will help create a positive environment for economic growth. On this highly user-friendly portal the citizens of the Western Cape can get information on local, provincial and government. Surfing through the pages of the site one can easily identify the dynamics of the home page, comprehensive database, easy navigation, the human touch where by professionals are behind the net work with telephones to assist for further inquiries from users which makes the portal easily accessible and the best of its kind (Dr. Wesso, 2004).

Apart from the Cape Gateway project, the Western Cape has also launched Khanya projects to empower the citizens (at school) with appropriate skills and knowledge (Dr Wesso, April 2004).

Khanya is sponsored by the Western Cape Department of Education (DoE) and aims at delivering education in the classroom through technology. A total of R40 million has been approved for the project. It is envisaged that approximately 100 schools were equipped with computer labs in the financial year of 2002. Part of the Microsoft donation that was previously mentioned above will go to this project among others. The WCPG has also plans to expand projects with the aim to improve the quality of life of its citizens.

South African experience at national and provincial level covered above indicates that the ICT policy process should not simply focus on drafting documents and declaring intentions but also on implementing a series of programmes aimed at achieving policy objectives. All stakeholders (government ministries, private sector, and civil society) should work together and coordinate their programmes and intentions so as to benefit the people. Coordination

should begin at grassroots and culminate at a national level. The experience of the Western Cape shows that provincial and district level coordination will not only provide a check and balances of ICTs diffusion but also critical design programmes that meet local needs.

Another key problem facing African countries is the lack of human resources. The diffusion of ICTs is hampered by the low level of literacy and the lack of technical skills. The experience of the Western Cape shows that provincial and district level coordination will not only provide a check and balances of ICTs diffusion but also critical design programmes that meet local needs. The experience of the Western Cape shows that provincial and district level coordination will not only provide a check and balances of ICTs diffusion but also critical design programmes that meet local needs.

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## Chapter 4: Eritrean ICT for Development Approach in Context

### 4.1. Introduction

Eritrea is located in the horn of Africa. A new nation in Africa with a population of 4.1 million it has a relatively poor economy. Most of the people in Eritrea live in rural areas and depend on subsistence farming. The fertile areas are not able to feed the population because of centuries' old of farming techniques and technology. The small industry existing is basically in the form of light industries based on simple labour intensive technologies that are unable to compete internationally in terms of quality and price. The productivity of labour is very low because of the low level of skills. Illiteracy is a major problem.

Another key problem facing African countries including Eritrea is lack of and effective utilization of human resources. Skilled human resources are not effectively utilised in achieving the expected results and remain at the prototype level and state and private enterprises depend more on foreign inputs than indigenous input. This state of affairs has been partially responsible for the economic plight of many African countries and perpetuates the current dismal state of a large segment of the human race that has been forced to tolerate poverty, sickness and illiteracy (ECA, 1991).

Eritrea being the newest nation in Africa and among the least developed countries in the world is part and parcel of this vicious circle of technological backwardness and underdevelopment. It is trapped between the low levels of scientific and technological capability that are not able to meet the growing demand of its people and the lack of purchasing power to buy and absorb science and Technology(S&T) from the advanced countries. In most cases the dilemma is whether to address the issue of increasing diffusion and utilization of technology, when priorities seem different.

The insurmountable problems facing these countries are that participation in global information society is not on the priority lists of governments. Many African countries, might ask why participation in the global information economy can have any significance when there are so many basic challenges to address: poverty alleviation, adequate health care including the HIV/AIDS epidemic, employment creation, and national and regional security issues (James, 2001:4).

However, the potential of ICT is enormous, not just in the communication field but throughout the economy and it is very important that countries adapt their technology strategic orientation accordingly. Ultimately the leapfrog principle inherent in micro-electric technology presents the single most potent source of hope for the weak of this world because information cannot be hoarded by information-capitalists and used to subjugate others. The leapfrog ‘principle’ takes care of that (Valaskakis, 1982: 100). On the other hand, at a time when all good and service have considerable content of information and knowledge, developing countries cannot continue to assume it is still safe to work on the old paradigm on which classical economics is based? The world is completely changed and rapidly changing. In the new global economy, only the countries that are capable of producing and selling information and knowledge-intensive goods and services will in the long-term survive. As a result a number of countries have promoted strategies to capitalize on the equalizing nature of information and communication technologies. Eritrea, a new nation of Africa, has the advantage to capitalize on experiences of other African countries’ success and failure stories.

The following figures (4.1-2) compiled by the Intelligence department of the *Economist* will provide an overview picture of the recent economic structure in Eritrea.

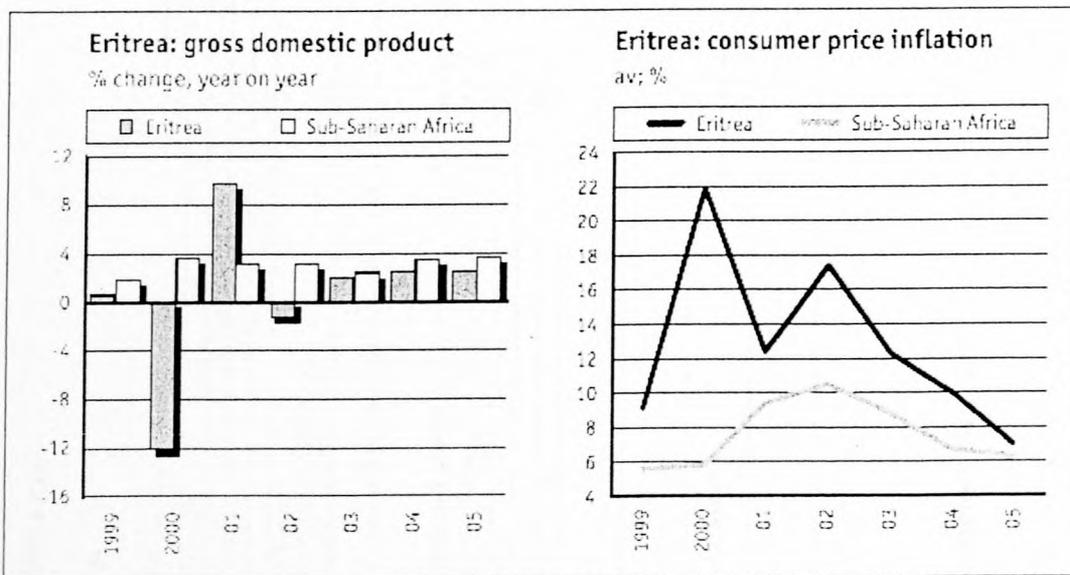


Figure 4.1(a): Eritrean economic structure

## Economic structure

### Annual indicators

	1999 <sup>a</sup>	2000 <sup>a</sup>	2001 <sup>a</sup>	2002 <sup>a</sup>	2003 <sup>a</sup>
Real GDP growth (%)	5.8	5.1	7.5	9.2	10.7
Consumer price inflation (avg. %)	0.0	-12.1	4.7	-1.2	2.0
Population (m)	9.1	9.9	12.4	17.4	23.2
Govt. exp. (US\$ m)	1.5	3.7	1.1	4.0	12.2
Imports (US\$ m)	20	37	27	32	56
Exports (US\$ m)	810	271	537	532	600
Current account balance (US\$ m)	-790	-105	-147	-162	-160
Foreign exchange reserves (EOB) (US\$ m)	34.2	25.2	39.8	50.3	27.7
Total external debt (US\$ m/year-end)	275	332	410	508	562
Exchange rate (US\$/Eth)	8.15	5.62	11.3	13.5	14.0

<sup>a</sup> Figures are IMF estimates. Expenditure data (govt. exp.) are unit estimates. All figures are in current prices unless stated otherwise.

Origins of gross domestic product 2002 <sup>a</sup>	% of total
Agriculture	11.7
Industry	25.0
Construction services	34.1
Other services	29.2
GDP at factor cost	100.0

Principal exports Feb 2002 <sup>a</sup>	US\$ m	Principal imports Oct 2002 <sup>a</sup>	US\$ m
Iron & iron ores	30	Community & transport equipment	175
Raw materials	5	Iron & iron alloys	103
Manufactured goods	4	Manufactured goods	52
		Chemical & allied products	24

Main destinations of exports 2002 <sup>a</sup>	% of total	Main origins of imports 2002 <sup>a</sup>	% of total
Italy	53.0	EU4	17.3
France	4.9	Saudi Arabia	16.7
Germany	2.1	Italy	14.2
Spain	1.1	Germany	9.1
France	0.0	Belgium	1.8

<sup>a</sup> IMF figures. <sup>b</sup> Before the 1998-2000 war Ethiopia accounted for the majority of Eritrea's trade.

Table 4.1 :(b) Eritrean Economic structure

Source: Economist Intelligence Country Report 2004

## 4.2 The Development Strategy in Eritrea

Information and communication technologies have a significant implication for the development of Eritrea (Abraham, 2004). According to World Bank (1994: IV) four areas of growth strategy were identified in Eritrea:

First, the major resource of the country is its people. Historically, Eritrea has been a nation of skilled people, and human resource potential is Eritrea's greatest asset. Any development and growth strategy, therefore, would need to emphasize investing in people. Education and health are key inputs in the growth process.

Second, Eritrea has a small domestic market; thus re-establishing and promoting exports will be critical for accelerating growth through increased productivity as well as for earning foreign exchange to meet the objectives of food security.

Third, the country has inherited a weak civil service and currently has limited administrative capacity. This will argue in favour of both strengthening the civil service to play a carefully defined function and expanding the role of the private sector.

Fourth, decades of war and neglect have deprived Eritrea of the necessary infusion of new investments, technology and skills development.

One of the key pioneers of the Eritrean Macro-Policy Programme, Mr. Berhane Abrehe, (2004) while explaining the view of the government on ICT approach "One of the priorities of the government major plans to transform the economy in the light of the global information sight is, to develop the human capacity by investing aggressively on the younger generation. This can be realized by providing best education in selected field of science and technology."

These facts above and the following sectors, seen as prime priorities for development indicate that there is plenty of room where ICT can fit in this crucial stage of the reconstruction of the nation. In addition to supporting the building of its human resources capacity, attracting investment and skills, improving civil service and promoting exports, ICTs are vital for the growth of sectors like agriculture, education and health in Eritrea.

### **4.2.1 Agriculture**

Agriculture is critical to the livelihood of the vast majority of the Eritrean people. It is estimated that 70-80 percent of the population depends on the production of crops, livestock and fisheries for income and employment. Preliminary data on the national accounts suggest that agriculture, including livestock and fisheries, accounts for a low share of national output (26% in 1992). The contribution of agriculture to exports is also extremely low with most of the exports generated coming from the livestock sector. The current situation can be attributed to the unusual circumstances in Eritrea during the past several decades involving war conditions and the lack of access to foreign exchange. Indeed, historical references appear to indicate that agriculture under normal conditions, can account for a much larger proportion of national output than is currently the case (World Bank, 1994).

It is clear that beyond the natural-and man-made disasters that incapacitated the productivity, the agricultural sector can consume intensive application of modern technology for its effective development and productivity. Attention will need to be paid to strengthening the institutional and policy framework necessary to enable farmers and pastoralists to have access to improved technology, inputs and services, and to ensure that appropriate incentives for increased production are in place (World Bank, 1994). New technologies can play a key role in improving access to information on soil management, marketing, labour saving technology and public policy relevant to agriculture sector.

### **4.2.2 Education**

Education will play a critical role in Eritrea's economic and social advancement. It will promote productivity, help transform the effectiveness of organizations, and facilitate the rapid absorption of the new technologies and methods needed to transform Eritrea's productive sector and ensure its competitiveness in the international market. Education will also promote entrepreneurship that will be vital to Eritrea's recovery, not only in terms of large scale production but also micro-entrepreneurial activities that will help improve incomes and reduce the poverty of rural populations. Education, especially for women, will also help improve health and nutrition practices and reduce the rate of population growth.

In this respect, the initiative of the Ministry of Education to use radio as a means to reach the vast majority of adults in addressing the eradication of illiteracy among the adult population is exemplary. The Adult Education Program and the Farmers Program that are being

broadcasted by the Education and Agriculture ministries respectively have been successful since well before the liberation of the country.

ICT, for a learning society that balances the practical orientation and the acquisition of specific marketable skills, with a sound general education to provide the basis for developing specific skills, is an important learning tool. Beyond a certain level, in-depth skill acquisition may be more effective within the framework of post school apprenticeship schemes which involve employers, who are best placed to identify, develop and use appropriate skills. Extended use of ICTs in the education sector will also improve the capacity of teachers to deliver better education, and will help universities and colleges to benefit from widespread available online information resources. It will have significant impact on the distribution of learning resources and management of education services in Eritrea.

#### **4.2.3 Health**

Other area where ICTs play a key role will be in the health sector in Eritrea. Better health and nutrition are desirable ends in themselves. They also bring about substantial economic benefits. Better health and nutrition increase the capacity for learning, raise productivity, decrease the number of days lost due to illness, and prolong potential working lives. The benefits of good health flow well into the future: mother's good health strongly influences the early physical and mental development of her children.

Health and nutrition levels are low in Eritrea. Eritrea has inherited a low life expectancy of about 46 years compared to 50 years for the Sub-Saharan Africa and 67 years for East Asia (World Bank, 1994).

The health sector is also an area where ICT can make a major contribution through different applications right from high tech medical equipment to telemedicine. ICTs play a key role in exchange of medical and statistical information, in epidemiological surveillance and disseminating information on primary health to the population.

#### **4.3 Government Initiatives**

The Eritrean Government is cognizant to the implication of ICTs to the social and economic development discussed above. The proclamation number 53/1994 and 102/1998 were put into action to provide the establishment of an Eritrean Information Systems Agency (EISA) and

the Communication proclamation of 1998 were both important regulatory steps from the government's side, towards embracing ICT seriously (Eritrean Gov. Gazette of 1994/1998).

The importance of the establishment of EISA was emphasised by the fact the agency was to be supervised by the office of the President. The objectives of EISA are mainly divided in two areas namely regulation and service provision. The mandates of the agency are mainly to develop advice, implement, coordinate and promulgate government information technology strategies, standards, policies and guidelines. The other area in which the agency is involved is to establish internal human resources development of the staff, implement internal technical resource bases and associate managed facilities to meet the user's demand in cost effective manner.

The Ministry of Transport and Communications is vested with sole authority as regulatory body of the communications sector (telecommunication broadcasting and post) in Eritrea.

The roles of the this ministry among others are to ensure that the public has growing access to communications, to promote the development of other sectors of the country's economy through the commercial supply of modern communications and services, to establish technical standards and to promote the development of the country's capability in industries and skills.

The establishment of EISA and promulgation of the telecommunication policy have paved the way for the development of an ICT policy and strategy for Eritrea in 2002.

#### **4.3.1 ICT related vision statements and achievements**

In April 2002, the Eritrean government with the USAID/Eritrea partnership kicked off the development of its new strategy. The visioning session of this major conference held in the capital, shared vision themes to guide different development partners and the government were drawn. To realize Macro policy vision to build a prosperous, peaceful, and democratic and knowledge-based nation the following visioning themes were identified (USAID/Eritrea, 2002):

- ICT development
- Food security
- Public health

- Rural agricultural development
- The private and financial sector
- Rule of law and judiciary decentralization
- Gender and development
- Human capacity development (HCD)
- Demobilisation and post conflict recovery

ICT was singled out as a key area of focus of the government along with the eradication of poverty and bringing about sustainable economic development in Eritrea. The national goal of the ICT sector was to increase access to telecommunications and Internet services. Among the key priority objectives outlined were:

1. Capacity building in the ICT sector
2. Establishing of training institution that can cater for the needs of the telecommunications sector in the country
3. Expanding telecommunication and ICT access in towns and rural areas
4. Exploring literacy, post literacy and continuing education possibilities using ICT
5. ICT for business development
6. Local language development for the internet
7. Economic empowerment of disadvantaged groups.

As main components of the vision statement in the conference on self-reliance, human capacity potential was also emphasised. Most important the conference emphasized that good policies and institutions should be in place to achieve this vision.

The vision statement was followed by a number of actions including the establishment of the Internet service, the launch of the cellular phone service by EriTel and the opening of the market for investment in the info-structure sector. This shows that the government is moving ahead in its commitment to embrace the ICT in its development programs. In the human capacity development sector the establishment of CISCO Academy and the introduction of a computer science program in the University of Asmara (UoA), the Partnership program with Dutch universities for campus wide information systems of the UoA were, as among the key achievements in the field. ICT for development has now moved up as priority area. There is a considerable political will at the higher level of the government to embrace new technologies for sustainable development.

Howe ever the anticipated ICT policy formulation process in Eritrea, is still ongoing effort, it is not yet finalized (Mekonnen).

#### **4.4 Melting Pot: ICT Policy and Development**

The progress made by Eritrea over the last two yeas shows that it is timely to put various initiatives together by developing a national ICT policy that enables optimisation of the use of its resources. A number of countries in Africa have developed policies with the aim of organising national resources (human, capital, natural endowment and the institutions), to create a conducive environment for the creation of goods and services of value to consumers outside the country and to attract investment.

South Africa is one of such countries that have developed a national ICT policy. According to the DOI report (2001), South Africa through its government community initiatives as well as by private sector, has been able to extend its base of ICT usage with the development of infrastructure and applications with both usage and training of its employees. It is also mentioned that South Africa has the largest GSM market outside Europe and is ranked in the top 20 globally in terms of internet users (despite the uneven access).

The fact that South African society and economy is comprised of extremes on the one hand poverty, and on the other hand wealth, presents an interesting case in development strategy. On the one hand, the country needs to break down the vicious circle of poverty among the underprivileged members of the society and to be able to give them a decent standard of living. On the other hand, South Africa as a fast growing developing nation also needs to put in place a network fast to share in the world's global economy. Thus in the newly democratic South Africa, every development policy is centred on "people first" and poverty alleviation issues. South Africa further presents an interesting case because the country is putting herself on the map with those fast growing countries with respect to ICT and development policy issues. It is not clear whether the development focus of the South African strategy has been fully translated into action on the ground. Slow progress may be due to skills, access and regulatory restraints. Approximately 25 percent of ICT-skilled workers leave the country each year; meanwhile demand is growing at 40 percent per annum (DOI, 2001:25).

Nevertheless, progress made in South Africa in promoting ICTs for appropriation by the poor and the underprivileged, could provide a good lesson for Eritrea that is undergoing economic transitions. According to the Government of Eritrea Macro-Policy (Nov.1994) as cited in

(Kifleyesus A., 1999: 211), the country has adopted a two-pronged approach to tackle the challenge of its socio-economic development. The first prong addresses the immediate problems of restructuring the economy and rehabilitating certain sectors through a program of recovery and rehabilitation. The second prong addresses the fundamental development problems and prospects of the country and charts the direction of its future growth.

Among the development objectives of Eritrea we find that the national development effort will be directed to the realization of a developed capital, knowledge-intensive- and export-oriented industries and services, and development of a competitive regional financial centre. And under the science and technology policy, the objectives are said to be “to keep Eritrea abreast of development in production, transport and services technologies in order to assure an upgraded and modern economic system that is competitive in the world (p.37). This clearly defines the political will of the leadership in the economic development of the country. All the above, though ambitious, demands improved ICT infrastructure, application, and skilled man power. An integrated national ICT policy will be critical to broaden this will and to implement strategic programmes that utilize ICTs in support of human resources development, attracting investment and skills, improving civil service and promoting exports. ICT policies, as mentioned above, can also support the growth of sectors like agriculture, education and health in Eritrea.

## Chapter 5: Critical Overview of ICT Policy Approaches

### 5.1 -Introduction

This chapter aims to consolidate lessons learned from global initiatives and that of South Africa discussed above to distil some lessons for Eritrea. In the past, there was a significant amount of scepticism about the positive outcome of the global information society when it comes to the delivery of benefits to societies, and particularly to the developing countries. According to Mansell (1998:1),

“National governments, international organizations, industry groups, corporations and other organizations are publishing visionary reports and policy statements on the future 'information society' at a rapid rate. This infatuation at the highest levels of national and international policy-making has all but turned into a competition to see who can make the most 'visionary' and thereby unrealistic and unsupportable claims of potential societal benefits. As a result, the already vast and rapidly growing literature about information superhighways, national and global information infrastructures, and future information societies provides a very unclear and confused picture as to precisely what these visionary conceptions entail, how they will be implemented, and what the real effects might be. Estimates of specific costs and benefits are rarely found; and substantive policy directions that are backed up by operational plans, actual resource allocations and budgets are almost non-existent. Much of the literature is either unsupported so called 'blue sky' speculation about future technological and service possibilities, or promotional 'hype' by the industries trying to sell the new technologies and potential future services”.

To some extent the scenario was repeated throughout Africa; countries claiming that they were able to produce the best national ICT policy and strategy plans compared to their peers and experts competing among each other for their best blue prints. Countries like South Africa, Botswana, Mauritius and Tunisia that had adequate building blocks like the necessary infrastructure, financial resources, commitment from high level of the government were able to progress well compared to their peers. Progress so far shows there will be different versions of information society for different countries.

It is widely claimed that the future information society will be characterized by increased diversity and greatly expanded individual opportunities. Ironically, in order to achieve this enhanced state of individual freedom and diversity, the mainstream information society literature provides little or no room for diversity among countries, or even among individuals, in the direction and speed of adoption of the new information technologies and services. It is suggested that implementation of the vision should be as rapid as possible in the direction of a single abstract model of a future information society composed of individuals spending a major portion of their lives in front of a terminal (PC, television, advanced telephone, etc) engaged in some form of electronic communication. As with all new technology systems, information and communication technologies portend both significant potential benefits and serious potential problems. Some investments may bring enormously high economic and social returns; others may result in enormous waste or even catastrophic loss. Progress so far shows that concerted efforts to align ICTs to development challenges facing countries based on their historical circumstances is critical, to avoid failure.

Soundly based public policy direction can increase the possibilities for benefit, reduce the risks of loss and harm, and ensure that the implications for all sectors of society that are considered as steps toward an information society are considered. Clearly there will be as many 'information societies' as there are societies. All countries should not try to charge down a single path emulating the perceived leaders in technological development at any moment in time. Rather each society will want to use the new technology and service opportunities to meet its particular priority needs and values, and thus to help shape its future. The addition of the term 'information' to 'society' should imply an expansion of the opportunities for individual societies, as well as individuals within societies, to enhance their distinctiveness in designing their own futures. The development of effective public policies to guide information society developments in different countries across regions and internationally will require much greater understanding than what currently exists.

Mansell (1998: pp, 446) notes,

“There remains an enormous uncertainty as to whether people will pay for new services requiring broadband capacity, even in the US, the country 'most ready' to receive them. There is much discussion about when and how a fibre cable connection to the household can be done, by whom, who will pay for it and how it will affect competition between the telecommunication and cable television

companies that now provide services. The search for a 'killer application' that might justify massive investments on ICT has yet to be identified as well as any significant demand for application. The rush to judgement in making unconsidered commitments to promote the construction of information superhighways at the most rapid pace possible can only help the dominant supplier industries and countries in the short run. If supply far exceeds demand in any country, the premature inefficient allocation of resources will have negative long-term economic and social effects”.

The ultimate test for every country will be the economic and social efficiency of the investments undertaken. If they are to be efficient, they must be demand led, not supply forced. Moreover, if demand determines the rate, direction and structure of investments, there is a much better chance for *balanced growth* toward broadly based information societies. If government policy-makers succumb to the siren song of the suppliers, it will inevitably lead to inefficient investments, unbalanced growth and the cultivation of an elite information class in societies characterized by increasing divisions between the information rich and poor. It is apparent that all countries are on a developmental path where electronic information and communication services are becoming ore central to economic, social, cultural and political life. But each country's on its own path of development, and different countries are at different points along their respective developmental paths. A wide diversity of approaches to information society development can and will be accommodated. Countries can only hope to obtain some of the benefits claimed in the information society 'visions' if the ICTs and services are directed to meet the specific needs and priorities of the societies, the institutions and the individuals applying them.

This cannot be achieved through policies alone but rather requires in depth analysis of the historical and socio-economic circumstance of the countries concerned. If there is one area over which policy analysts exercise primary responsibility in the policy cycle, it is the evaluation phase. Analysts inquire about the possible impact of an adopted policy. Does the policy meet the greater needs of society and is it achieving its goals? The first question is broader than the second. It is always expected that the goals of the society and those of the policy are compatible, but they sometimes conflict each other. It is true that when we evaluate the policy on its stated goals, we get a much more positive picture than when we analyse its

overall impact on society. One ground on which policy analysts may want to evaluate the impact of a policy, which is assumed, to be a broader perspective, is when they look at policy outcomes. The policy may not be confined to the target group or even to the immediate program objectives (Gupta, 2000:3). Unfortunately honest analysis of policy outcomes are generally missing from the agenda of both the experts and development institutions promoting national strategies often informed by the dominant neo-liberal thinking.

### **5.1.1 The global dominant scenario**

Since the idea and success of the information highway started in the west, beneficiaries happened to be the Western countries. The dominant scenario in these societies and their allied international organizations has been a broad consensus about the framework in which the development of the Global Information Infrastructure and Geographic Information System (GII-GIS) needs to take place.

As mentioned above, at both the national and international level, a framework has to be established which supports dynamic competition, encourages private investment, support flexible regulatory frameworks and allows for open access to networks. Within this framework it is only considered a matter of increased investment and continuous innovation to arrive at a fully fledged and equitable Information Society.

In this scenario competition enjoys priority as it stimulates efficiency within the sector. Furthermore, competition is perceived by many as generic to the pursuit of the other objectives such as the lowering of prices and the universal extension of networks (Audenhove 1999: 389).

Although the context in developing countries differs markedly from that in the west, the above argument has often been extrapolated as the appropriate scenario for the developing of the NII in the developing countries like South Africa (Audenhove 1999: 389). The impact of this dominant scenario has been minimal particularly after the collapse of the technology equity market, prompting the search for alternative strategies to deploy ICTs for development.

### **5.1.2 from Dependence on Technology to ICT for Development**

The propagation of technology as a solution to development was one of the concerns and grounds for the disappointment of decision-maker in the results of the ICTs as instruments of

development. For developing countries like Eritrea, that suffer from problems in trade, health, education, agriculture, HIV and industrialization, ICTs are only important in as far as they meet the needs of the people. However, the dominant scenario described above often portrays technology as a solution to development. Although the underdeveloped countries of Africa are understandably suspicious of ICT initiatives or assistance from developed states, the string attached to most of the donations continued to compel countries to adopt the dominant scenario. Most less developed countries need the physical means to be self reliant, with the resources and information to develop their society, economy and polity in their own way (Stover, 1984:53) rather than to become heavily dependent of technology alone. In fact the solution to development problems in most of the countries are less technical.

Critiques of the communication order argue that technological transfer has not resulted in accelerated development. Most of the technology transferred they claim, has been inappropriate, capital intensive technology where labour intensive technology is required. The transfer has not really helped in creating employment or building an indigenous technological ability. More ever, current technology transfer tends to polarize society between the elite who benefit from capital intensive resources and the masses who do not at all. The effect of all this, it is wealth for the small elite without eradicating the poverty of the majority.

However, it is difficult for a country to be totally independent from the others and shut off from the information technology revolution. Actually it is not possible to realise desire for complete independence. Interdependency based on reciprocity, equality, and mutual respect would ultimately help sustainable development and is attainable.

Choosing the most appropriate technology for development objectives based on the interdependence principle, requires consideration of the following factors (Stover, 1984: 76);

- Definition of development goals (what are the objectives towards which the technology will be employed)
- an inventory of resources endowment ( what assets are available to help achieve the objectives)
- consideration for the conditions of application (how will be the technology be used)

The appropriate technology for development goal should not necessarily be a small scale, labour intensive, traditional village technology. A combination of traditional and modern tools is an essential part of self reliance and autonomy.

Other important aspect of self-reliance in technology includes the ability to foster local innovation and develop indigenous technology. However, the capacity to innovate is less understood and supported in developing countries. It takes more than capital, access to scientific knowledge and national research centres. It is the ability to innovate results from interaction between capital and labour as well as information and scientific infrastructure. Policies and procedures must be established to facilitate two-way, horizontal communication and cooperation among people in education, business, labour and science (Stover, 1984). A well defined policy will not only promote indigenous innovation capacity but is also critical around the dominant scenario and in helping of ICTs to support development.

### **5.1.3 Getting Policies and Institutions right**

A country that aspires to introduce an ICT policy needs to get its policy right from the outset. Analysis of existing sectoral policies and regulations is an essential step. In general ICT policy overlaps with four well established and often separately organized policy fields: technology, telecommunications, media and policy. Further more, educational policy will have to play an over all underpinning role. With the convergence of ICT's the formulation and implementation of new policies are starting to cut across existing policy domains. Information society will thus have to encompass and coordinate a broad body of different and formerly separated policy areas and frameworks. The experience of South Africa and other countries shows that, the analysis of existing policies is a crucial step in the formulation and implementation stage.

Secondly the policy process should be participatory. ( Mansell & When, cited in James, 2000), observe that national ICT strategies involving a process of participatory, interactive learning and planning, are emerging as an alternative to either state planning or pure market mechanisms for constructing national information infrastructure. For developing countries including Eritrea, an international consensus has emerged on the need to prepare national ICT policies and strategies to provide a framework to govern the allocation of resources among different groups of users and sectors, and to establish priorities.

Thirdly, it is important to tailor national policies to specific circumstances of countries. It has been argued in this study that there is no such a thing the Global Information Society that neither is there one scenario towards its accomplishment. Experts concur (Audenhove, et al. 1999: 402) that in the future there could be different models of the Information Society, just as today we have different models of industrial society. These are likely to differ to the degree to which they deal with social exclusion and create new opportunities for the disadvantaged.

Numerous factors influence the extent to which countries absorb ICTs and the speed at which countries attain social and economic development-not-least political stability, physical infrastructure, basic literacy and basic health care. It is likely that countries take different paths and times to attain the knowledge society.

The Digital Opportunity Task Force report provides a useful set of guidelines as to which path a country should take in pursuing its ICT strategy. The Report proposes two major ICTs for development paths (DOI, 2001:5).

The first is positioning ICTs as an effective instrument to address development goals, such as achieving better health (Gambia), helping primary school perform better (Chile), creating jobs for women and men (Bangladesh) and improving access to government services (India). ICTs were also used to empower local citizens' groups in Indonesia to enable them to monitor compliance with environmental standards. Estonia and South Africa also positioned ICT in pursuit of their development goals.

The second option is positioning ICTs as a tool for economic growth especially for export earning. Countries such as Cost Rica and Taiwan focused on developing ICT as an economic sector to boost export. Brazil, India and Korea are trying to build their domestic capacity. Others like Malaysia, Trinidad and Tobago, pursued strategies which seek to use ICT as enabler in the wider socio-economic development process generally, primarily focusing on repositioning the country's economy to secure competitive advantage in the global economy.

These different strategies indicate that developing countries like Eritrea need to focus on positioning ICTs to meet their development goals.

Fourthly, there is a need for development of building blocks for information society such as minimum basic infrastructure and adequate trained human resource. The DOI report notes that (DOI 2001: 25): the cost of access to ICTs is still very high in many developing countries

by international standards and many areas are with out access at all mainly due to lack of transparent regulatory regime which could facilitate the development of the telecommunication sector.

Fifth, as argued consistently above, the ICT policy process should be consultative. Potentially different priorities among stakeholders present a challenge. A multi-stakeholder task force is an important step in this regard, but consultations also need to be extended to the implementation stage to ensure that initiatives are demand-driven and sustainable.

Sixth, there must be commitment for action by government, private sector and the civil society. James, 2000 notes that developing countries would be in a stronger position to maximise the potential benefits of the new applications if they establish national ICT strategies. It is pointed out that such strategies must be underpinned by a commitment to action if they are to be effective.

#### **5.1.4 National Information and Communication Policy for Development**

Subordinating ICTs for development requires proper co-ordination of initiatives and the avoidance of duplication. Nowhere is this approach more likely to produce returns than in the information and communication field, since ICTs cut across so many different departmental responsibilities. The job of ICT for development cannot be done by government alone, nor can it be left to the market, because the market will be unable to guarantee that its investment in information for citizens will meet all of society's needs. Information and communication technology policies have bearing on:

- Food security;(agriculture)
- healthy living and the effectiveness of the National Health Service;
- employment and the creation of high value-added job opportunities;
- lifelong learning and the effectiveness of the education and training system;
- social inclusion and access to services and opportunities;
- industrial and commercial competitiveness(productivity in Agro-industry);
- the efficiency and effectiveness of public services;

This means ICT policies should not only cover commitment of government, civil society and the private sector, they should be used as coordinating tool of the works of these groups so as to maximize the benefits to all.

On the other hand the transition to information societies and knowledge-driven economies necessitates design of policies and implementation of programmes that stimulates the growth of the ICT industry. Many developing countries especially the newly industrialized countries like South Africa have created ICT policies to speedup the process of transition or are in the process of doing so. It is incumbent on Eritrea to develop a short, medium and long term ICT policy and strategy to advance its development pace and participate actively in the global information economy.

There are many other reasons for Eritrea to get involved in the ICT policy development and implementation process. Many of the Government's initiatives already have already significant information elements that need to be supported by concerted policies and e-government programmes. Failure to get the right information when needed will reduce the impact of individual initiatives. There is much to be gained from a co-ordinated approach to information across the board. A National Information Policy framework would contribute to:

- **Modernising government:** the agenda for a modern government requires that information flows are managed as effectively as possible within government and between government and citizens and businesses. A well defined policy could contribute to increasing the flow of information between government and citizens.
- **Building a knowledge-driven economy:** Eritrea's transformation of industry and commerce will place a premium on the effective use of information and knowledge.
- **Creation of a good environment for e-business:** better co-ordination is needed between Government and industry to gain maximum benefit from existing and proposed programmes. Small and medium enterprises could benefit from an ICT-driven business environment. Ambitious targets for electronic transactions with Government will need co-ordination across Departments and Agencies through an ICT policy.
- **Creating a healthier nation:** better flow of information in the health service, such as the telemedicine would be important to build a healthier nation. The pervasive nature of information in the health sector makes clear ICT policies paramount.
- **Improving educational effectiveness:** Eritrean children and young people should have access to the information to support their learning; lifelong learners will need co-ordinated guidance on all the opportunities open to them. This requires a national ICT policy that emphasizes e-learning.

- **Avoiding social exclusion:** unchecked, many current information developments could exacerbate social exclusion, further isolating the information have-nots from the rest of society. Policies are needed to ensure that no-one is excluded from the benefits of an inclusive information society
- **Building an informed democracy:** ICT policies have now become corner stones for popular discussions and engagements of civil society and the general public.
- **Strengthening cultural identity:** technological development offers opportunities to articulate and promote minority cultures. At the same time, the global nature of the cultural communication system puts national cultures under threat. A policy that maximizes opportunities and reduces threats is needed.
- **Maximising investment benefits:** a co-ordinated approach through ICT policies could help launching of large-scale programmes in health, education, agriculture, etc. and maximize return from this wide range of investments.

This chapter reviewed some of the critical ICT policy issues and why they are important to Eritrea. The following chapter presents lessons, best practices and strategies for the formulation and implementation of ICT policy and strategy in Eritrea, based on experiences around the world in general and South Africa in particular.

## **Chapter 6: Conclusions and Recommendations**

### **6.1 Introduction**

Drawing on the experience of South Africa and other developing countries, this chapter presents conclusions and recommendations for Eritrea in promoting a national information and communication policy agenda. Analysis suggests that Eritrea should develop an ICT policy and strategy that meets its social, political and economic aspiration, followed by launching action plans through public and private sector partnership.

### **6.2 Conclusion**

Sober assessment of ICTs and the analysis above, show that ICTs are not panacea for all development problems. However, detailed analysis of experience around the world reveals ample evidence that used in the right way and for the right purposes; ICT can have a dramatic impact on achieving specific social and economic development goals as well as play a key role in broader national development strategies. The real benefits lie not in the provision of technology per se, but rather in its application to create powerful social and economic networks by dramatically improving communication and the exchange of information.

ICT policies are the key tools for guiding judicious application of ICTs for social and economic problems. These policies should not only identify positive aspects but also manage threats posed by the new technology. Instead of reinventing the wheel, policy processes should be based on experiences of other countries. This study analysed the policy process of South Africa and some of the key lessons for countries like Eritrea that are striving to embark on the process.

Experience around the world shows that ICT policy process covers a complex set of issues like building human resources, infrastructure, entrepreneurship, applications of ICTs to key sectors like health, education and regulatory reform that are often challenging, unpalatable and difficult to implement. On one hand the benefits of effective policy action for national development, national cohesion and equality, more than justify these obstacles. On the other hand the experience of South Africa shows the policy can be broken down into various sections that create the whole. Instead of developing a grand policy, South Africa opted for creating the building blocks for an integrated policy.

Eritrea can benefit from these experiences. The right mix of sectoral and national policies and programmes can enable Eritrea to actively participate in the knowledge society.

### **6.3. Recommendation for Eritrea**

The review of key Initiatives and policy processes of the South African government in general and the Provincial government of Western Cape in particular shows that the above are achievable if a country takes concerted actions.

However, the rosy picture of ICT for development is far from over even in the most advanced countries. Far too often very real damage to human welfare could occur when ICTs are introduced. This is often attributable to the fact that these technologies are promoted as a panacea for social and economic development. ICT policies are often implemented haphazardly without taking realistic factors of local conditions and use into account. In some cases ICT strategies are often developed and publicised mainly to attract foreign investment to construct new infrastructure. Applications developed and designed for markets in the industrialised countries are transferred to the developing world with little concern about the need for technical modification or the importance of content, skills and training. They take too little account of the plight of the marginalised people and they fail to build upon existing strengths in the local environment. It is not a surprise that the majority of ICT projects in developing countries fail partially or completely.

Both donor demands for results and the political and economic priorities of key decision-makers often dictate immediate outcomes as compared to long term impacts on the society. Actions stemming from strategies oriented primarily to responding to the needs of decision makers and donors are likely to exacerbate the existing ways in which substantial segments of the population are marginalised. There is an urgent need to develop ICT strategies and actions which bring marginalised social and economic groups into reach. This requires greater clarity with respect to which users are targeted as a priority. It is not sufficient simply to ensure that strategies are oriented towards the user of information and communication technology networks and services. The users' context (social, cultural, economic and political) is crucial to whether he or she has the capacity to shape the virtual environment. Those people who do not have opportunities to acquire the skills necessary to conduct their lives in this kind of environment will be disadvantaged or excluded as ICTs become more pervasive. Different

users will have varying skills and capabilities and cultural understandings of the roles of ICT applications, economic resources and political power.

Ideally, ICT strategies should be designed to permit users to shape the design of ICT systems; in practice, especially in developing countries, this is rarely a realistic option. If policy makers can be persuaded to give much greater priority to investing in opportunities for building the required capabilities for reconfiguring and maintaining hardware and software and for local content production, even as they invest in hardware and in advanced network infrastructures, there is a greater chance that marginalized users will be able to accommodate the new technologies into their lives in productive ways. This requires substantially greater attention to education and training, knowledge transfer and sharing, policy coordination, and enabling local groups to determine the nature of their own communicative environments.

To accomplish this, major efforts are needed to devise innovative ways of tailoring ICT systems to the various needs of a broad cross-section of the population, particularly to the poor majority in developing countries. This requires attention to the assessment and selection of innovative ICT applications. It also entails increasing the priority given to social applications and those oriented toward strengthening the provision of public services and environmental protection. These application areas can make early and substantial contributions to the improvement of the social conditions of marginalised people and they can provide an improved infrastructure for stimulating economic activity. Financing of such initiatives is likely to be more difficult to justify than it is for ICT development oriented activities or for ICT applications that respond to the business needs of urban users. Despite some efforts in rolling out telecentres to rural areas in Africa there has been limited success in tailoring ICT applications to the poor and marginalized.

Research can play a vital role in critically assessing the factors that support innovative applications of ICTs that are responsive to the local needs of citizens and smaller businesses as well as to the skill requirements of industrial users of advanced ICTs systems. Comparative research continues to be needed on innovative financing arrangements and on measures that can be taken within the framework of ICT strategies that are sensitive to the needs of those who are excluded. Such research needs to be undertaken systematically and continuously so that a broader base of experience can be accumulated and exchanged among those who are in a position to develop. Ironically, the research capacities in countries like Eritrea is so limited that innovative applications that are oriented toward social, as well as economic, development

goals have difficulty in emerging on regular basis. If the outcomes of investment in ICTs for businesses and citizens in developing countries are to bring positive benefits for those who live in poverty, it is essential that ICT strategies give much higher priority to social issues, to training, building the capacities of universities to carry out research and development in ICT applications and to financing initiatives for those who are otherwise likely to be excluded.

The analysis above shows that ICTs should not only be seen from the social context of the target population, but also need to be viewed with some sober scepticism. The various conferences, array of experiments and initiatives in most developing countries shows that national policy-makers are often engaged in grand technological determinist vision and political statements. The implication of ICTs for development is rarely monitored and evaluated.

Eritrea, being at early stage of ICT policy development, can benefit both from the failure and success of other countries. So far, the preparation of Knowledge society vision statements has not been a costly proposition. However, the translation of vision to policies and strategies requires in-depth analysis of needs, aspiration and the capacities of people, government and other stakeholders in light of the claims of the vision statements. The transition from vision statement to policy and implementable ICT strategies is an important step in information society development. According to the DOT Force implementation team report: The DOT Force implementation team notes that;

1. ICTs have the potential to shift the development paradigm towards increased inclusion for all nations, offering unique opportunities for all;
2. The potential of ICTs to contribute to development depends largely upon the development of national and regional ICT strategies and policies;
3. Decisions and policies made in global venues increasingly determine the nature and scope of national ICT policy solutions for socio-economic development;
4. All stakeholders, including developed and developing governments, the private sector, and non profit organizations, should participate in global ICT policy making • Developing-nations' stakeholders often fail to engage adequately in ICT policymaking, for a variety of reasons;
5. An action plan is needed to develop sustainable ICT-related policy processes and outcomes that are more inclusive of developing-nations' stakeholders, comprising public, private and non-profit representatives.

Review of the South African and the PGWC process shows that policy process entails not only the transition from vision statement to policy and strategies but also requires the government undertake crucial steps in fostering the diffusion of ICTs. These building blocks for the policy include improving the use of ICTs within government, developing the necessary human resources, improving the telecommunications infrastructure, launching universal access schemes such as community centres, increasing the use of ICTs in education-health-and business sectors and promoting an enabling environment for increased public and private sector partnership for the delivery of ICT services.

#### **a. Enhancing ICT use for government service delivery**

Improved use of ICTs within government in Eritrea could contribute to the policy process and vice versa. This would include strengthening current use of ICTs, increasing management and flow of information between different ministries and public institutions and creating conditions for more citizens' access to information.

#### **b. Human resource development**

Human resource development should be a building block for the policy process and a cornerstone to the ICT strategy. Important elements of the HR strategy for the ICT would include

- training in high level policy development and policy management
- training in ICT production and management
- basic training in computer skills for all users:
- office automation skills for all users specially in civil service area
- research and development in computer systems, network and information systems

A menu of training exchange programs with countries with success stories and relevant challenges should be developed in addition to locally based training programs.

#### **c. Investments in education and health**

Experiences in South Africa and other countries have shown that investments in human capital – in particular investments in health and education – can be conducive to technological progress. There are synergies between technology and human capital; more educated workers make more productive firms. A high level of education is a necessary condition for the use,

imitation and innovation of new technologies. However there should be a balance between infrastructure development and human capital. Resources spent building hospitals and schools are resources not spent in communications infrastructure. Furthermore, someone must pay for higher investment in human capital, and to the extent that this spending is financed by taxation on the producers of wealth may lead to lower incentives to invest in technology. It is important to bear in mind that the balance between this trades-offs and synergies depend on the institutional environment within which the interaction between technological progress and human capital accumulation takes place. In principle, one can argue there are few trade-offs between ICT and other values because in the medium term ICT will be complementary to and accelerate other investments.

#### **d. Improving the national ICT infrastructure**

The Government of Eritrea must engage in more effective ICT infrastructure planning with the aim of having every government institution, school, clinic, and hospital linked to a network in the capital in the long term.

The government must work on national processes towards the development of the Nationwide Information and Communication infrastructure with multimedia capability. Innovative financing modes including public-private sector co-financing must be pursued for establishing the ICT infrastructure.

#### **e. Improving content**

Collecting and producing local content must be a high priority item on the agenda when it comes to providing information services to the citizens of the country. At the start it may begin with focusing on information products available through government and development organisations. On the long term, however, the government of Eritrea should have plans regarding the delivery of one-stop information and transaction services to the public.

#### **f. Developing a universal service strategy that facilitates access to information and knowledge**

Eritrea needs to consider the establishment of community centres as a strategy for increasing access to ICTs in rural areas. Combined with incentive for rural telecommunications operators and other resource centres like community libraries, Multi-Purpose Community Centres have

become important venues of community access to information resources and ICT applications. The experience of South Africa shows that:

- Communities need services from government and have started to make use of the services on offer in MPCCs in greater numbers
- It is very important that the community chooses the services they need as these will be the priority in an area
- It is difficult to sustain technology in rural areas as maintenance and rollout costs a great deal. Creative mechanisms need to be in place to provide communities with access to technology
- The three spheres of government should work together closely to make MPCCs a success
- Traditional Leaders have been key partners in setting up MPCCs up. They have been an asset to the process
- As communities have been involved in setting up MPCCs those running have shown how proud the communities are of their centres and ensure they are kept safe
- There is a need to see the MPCC launch event as one step in the life of the MPCC. More services and programmes need to be brought to those MPCCs already running to add value to them and make them more successful.

Through MPCCs, communities will have access to technology through Information Technology Centres (ITC) or Tele-centres. Online information can also be brought to communities through Public Information Terminals (PIT) based in MPCCs. Technology adds value to services that are offered at an MPCC.

MPCCs are a way of bringing government closer to the people. There are at least one MPCC in each of the District and Metropolitan Councils in the country, and they are helping in the following way:

- government services like pension, health education, passports, IDs, library, use of computers and many others will be found in one place
- people from the community will be able to get information they need from their MPCC
- people will not have to travel long distances to get government help
- there will be better communication between the government and the people

- communities will always be informed about what the government is doing

MPCCs will be the place where community events will happen. In South Africa, Multipurpose Community Centres have been identified as the primary vehicle for the implementation of development communication and information programmes as they can serve as a base from which a wide range of services and products can reach communities. The aim is for communities to access such services and engage in government programmes for their own empowerment. Appendix I describes the South African experience in establishing and maintaining a Multi Purpose Community Centre.

#### **g. Launching a policy process that results in implementable Action plans**

The vision statement has already created an incentive for embarking on the policy process in Eritrea. Lessons from South African government initiatives show that the process should begin by setting up working groups to ensure that strategic and operational priorities of the government are supported by appropriate information practices and that various policy issues are digested and debated before being made public. This is often followed by the issuing of green and white papers on various aspects of policy which are then ratified by parliament. The process culminates with the definition of action plans that translate policy objectives to ICT programmes and projects to be implemented through public and private sector partnership. Eritrea needs to engage in these processes in order to become an active participant in the information society.

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## **Annex I – Steps for Implementing a Multi-Purpose Community Centre (MPCC)**

South African experience indicates that the following steps are necessary for establishment of a community centre.

### **Community awareness (Communities participate in the MPCC)**

The process of establishing an MPCC rests on a rigorous community participation process. Communities are involved in all stages of the MPCC establishment process. Various methods are used to build community participation and involvement including community meetings, radio (especially community radio programmes and announcements), newspapers, pamphlets, village level announcements etc. This publicity and awareness programme is driven by a local committee based at the MPCC, the Local Inter sectoral Steering Committee (LISSC). This LISSC is made up of community groups and organisations, Traditional Leadership structures, parastatals from that local level and government officials from local and regional offices.

### **Site identification**

The LISSC in partnership with stakeholders from local and provincial government identifies a place in the community from which the whole District Council can be served. This usually has some infrastructure in the form of under-utilised buildings and can also be where the development plans of provincial governments have identified potential growth points. Some other factors determining where the MPCC is located include:

- accessibility and centrality
- availability of other infrastructure likes electricity, telecommunication, water, roads (although this is not a key determinant).
- rural setting

### **Research into community information needs**

Research needs be done continuously, before, during and after the establishment of an MPCC; as well as during the launch event. Issues to be researched and evaluated are:

- Community needs
- Prioritisation of service needs

- Community profile detailing the population and structures in the community
- Social dynamics of the community
- MPCC concept has been understood at grassroots level
- Community expectations are realistic

### **Setting up of the Management Committee for the MPCC**

The role of the management committee will include:

- Support in updating the profile of the community serviced by the MPCC
- Assisting in identifying/upgrading service and information needs
- Manage the process of accommodating new service providers through fund raising, resource allocation and lobbying
- Monitor the running of the MPCC by review of reports from the Centre Manager and service providers
- Meeting quarterly to review and assess the quality of service provision through the MPCC
- Support the Centre Manager in the effective management of the MPCC through budgeting, monitoring, staffing and administrative support
- Actively advocate for and participate in all special events or projects at the MPCC, e.g. youth programmes, training, workshops etc
- Assist the centre manager in lobbying for the extension of the centre to accommodate more services
- Intervene where issues of administration, discipline or arbitration arise in the life of the centre

### **Financial Resources for the centre**

Funding, along with proper management of the facilities, is central to the sustainability and survival of an MPCC. It is therefore important to have funding and financial management guidelines available to guide those responsible for the maintenance of viable centres.

## Resource planning by individual service providers

A number of service providers from the public, private and community sectors, will operate from the MPCC usually from their own office or cubicle. Each service provider is responsible for the resources of their office. These include:

- Business plan of the services they will provide
- Budgets for their services and programmes
- Staffing of their offices (job descriptions, appropriately trained personnel, appropriate training programme, etc.)
- Ensuring that appropriate office equipment and furniture are available
- Ensuring that all necessary infrastructure like telephones are in place (application for their own phone when this is not provided as a general service by the centre management)
- Development of their own departmental programme
- Setting-up of their own office and service provision from this point on the specified time periods (if this is not full-time)
- Administration and filling in of all questionnaires and templates distributed by the management committee
- Compilation of monthly reports and collation of all statistics from various templates including visitor profiles, Frequently Asked Questions (FAQs), timeline for handling queries etc.
- Submission of monthly reports to the management committee as well as own departments/ principals at either national or provincial levels
- Attend the monthly meetings of the centre management
- Payment of the services which they make use of to the management of the centre, including water, electricity and rental.

## Branding

Branding of MPCCs is very important and this must include the ***Batho Pele (People First)*** principle underlying service delivery by public institutions. The overarching role, which the new Coat of Arms plays, is reflecting a corporate image of government. There are various levels at which branding could take place in the Corporate Identity project, and how corporate

material could appear at different levels e.g. stationery for the MPCCs may have a special colour or have the embossed Coat of Arms logo.

### **Training**

To ensure effective and efficient service delivery, all staff from various service providers should have appropriate skills to provide quality services. Once this is in place, all staff needs to be exposed to appropriate training programmes and details of this should be included in the MPCC Business Plan.

### **Marketing and promotion**

Some of the major objectives of marketing and promotion are:

- To inform stakeholders and the public about the initiative and forthcoming launches
- To identify the value that will be added to existing centres through the provision of more services especially by government departments.
- To inform the media of the process, the launch and the value of the initiative to government and the public
- To encourage communities to use the services to better their lives
- To encourage stakeholder buy-in through informing them of the value of being at an MPCC and the value it would provide to the communities.
- To create a supportive marketing environment so that service providers, stakeholders, and the public understand the MPCC initiative.

### **Media promotion**

A media plan will ensure that communities have access to information about government and how the MPCC initiative aims to improve the quality of people's lives. To make this a success there is a need to ensure a free flow of information from government to representatives of the media for reporting to the public as print or broadcast material. In this regard, the media is a valuable asset to assist government to reach and talk to communities about the services offered at the MPCC's in their area. All forms of media, especially the ones that reach the majority of communities (radio, loud hailer, workshops, road shows, etc.), are to be utilised. People need communication in their own languages.

## **Distribution plan**

It is essential to develop a well co-ordinated distribution plan to ensure cost effective and timeous delivery of products and material to MPCCs. Each MPCC also serves as the central point for an extensive network of ward based distribution outlets. These take the form of points right across the District Council where people congregate for various purposes. This can be community organisations, premises of a Tribal Authority, Regional Courts, clinics, crèches, Spaza-shops, community libraries etc. At each point, the Government Communication Officer based in the MPCC has established a working partnership with a community 'distribution champion' who assists in the distribution of material in communities and also solicits information and service needs. The Communication Officer refers the query to the relevant government department for attention and on a later visit follows-up whether the feedback has been provided or not.

## **Monitoring and evaluation techniques and plans**

In order to sustain quality according to set service delivery standards, but also to ensure that information responses are in keeping with information requests, an important element in sustaining an MPCC is the management of monitoring and evaluation techniques. Monitoring and evaluation are similarly important to keep track of operational and management issues in running an MPCC.

## Annex II - Information Policy Assessment Questionnaire

An assessment on the Provincial Administration of Western cape (PAWC), in relation with national and international standards on related policy formulation.

The purpose of this survey is to get relevant, complete, verified and reliable information on the PAWC information policy.

1. Is there any existing information policy for the Province, (Western Cape), in the administration? [Yes] or [No] - put an X in the relevant box.

If yes, when was formulated, adopted and launched?

.....  
.....

If no, are there any current plans to formulate an integrated information policy framework for the entire province?

.....  
.....

2. What is the current related information policy for the use and regulation of ICT?

.....  
.....

3. Is there information policy applicable, relevant and consistently reinforced to all the Departments in the province?

.....  
.....

4. In your own Knowledge, are there any information policies that have been adopted by other Provinces? [Yes] or [No], if yes please give details:

.....  
.....

5. How do deal with investing in people and skills to promote a culture of life long learning while realizing the potential of ICTs to deliver new learning solutions?

.....  
.....

6. What is your comment about the existing PAWC ICT policy in terms of the following?

- Benchmarking<sup>1</sup>:

.....  
.....

- Underlying principles<sup>2</sup> for information policy:

.....  
.....

- Inclusivity<sup>3</sup>:

.....  
.....

- Info-structure<sup>4</sup>:

.....  
.....

- Policy instruments:

.....  
.....

7. What the approach of the PAWC with ICT using for development?

.....  
.....

8. What are/were the most impeding factors in the information policy for the province?

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<sup>1</sup> A standard by which something can be measured or judged, to measure something according to a specific standards in order to compare it with and improve one's own thing [www.dictionary.com](http://www.dictionary.com)

<sup>2</sup> South African Green Paper on e-commerce ascribes principles governing an information society policy.

<sup>3</sup> Inclusively as ascribed in the South African National Information Technology Framework- in accordance to serve the needs of nation and to reflect the broad range of stakeholders' views.

<sup>4</sup> Info-structure refers to the content of the information in the web, system architecture, computing and communication technology, and information resources and support services.

**Annex III-MPPC Assessment Questionnaire****Multi-Purpose Community Centre (MPPC), in Pinel (Dwars river valley).**

Please complete the questionnaire and hand it back to the person doing the interview.

QUESTIONNAIRE: MPPC opinion			
Date	Town		Centre
	Yes	No	Explain
1. Do you understand what is meant by “Multi Purpose Community Centre (MPPC) and what it contains?			
2. Do you think there is a need for information and communication Technology (ICT) in an MPPC			
3. Would you like to suggest what the MPPC should do?			
4. Can the MPPC have positive impact on your life?			
5. Would you make use of the services of a MPPC?			
6. Do you think that the MPPC can provide in your information needs?			
7. General opinion according to your experience with the MPPC?			

#### **Annex IV- List of Persons Interviewed**

1. Dr. Harold Wesso. Head of the Innovation Centre in PGWC. Cape Town.
2. Prof. Abraham Asmerom. Ministry of National Development. Asmara.
3. Mr. Berhane Abrehe. Minister of Finance. Former Director General for the Eritrean Macro-policy Department. Asmara
4. Mr. Mekonen Fishatsion. Director of Policy, Tariff, Regulation and Network Development in the Ministry of Transport and Communication. Asmara.