



NATIONAL INFORMATION AND COMMUNICATION TECHNOLOGY POLICY

Ministry of Communications and Transport
P.O. Box 50065
Fairley Road
Lusaka

April, 2006

*Supported by United Nations Development Programme
National Information & Communication Technology Policy*

FOREWORD

The world has embraced Information and Communication Technology (ICT) as an enabler of social and economic development. The industry is growing very fast and making significant contribution to global trade and investment.

ICT is receiving focus at various fora as demonstrated by the United Nations Millennium Development Goals (MDGs) and the World Summit on the Information Society (WSIS). Both initiatives have resulted in the promotion of information and knowledge based society as the basis for creating wealth. An opportunity has arisen for Zambia to join the global village by connecting commerce and trade. This policy sets the framework for Zambia's participation in the global economy.

At the national level, the importance of ICT in national development is demonstrated by the approval of the ICT Policy and the inclusion of ICT as a priority sector in the Fifth National Development Plan 2006-2010. This Policy is designed on thirteen pillars namely as follows:-

- * Human Resource Development;
- * Agriculture;
- * Tourism, Environment & Natural Resources;
- * Education;
- * Health
- * E-Commerce
- * E-Government
- * Youth and Women
- * Legal & Regulatory Framework
- * Security in Information Society
- * Access, Media, Content and Culture
- * ICT Services

A challenge has now arisen for the country to implement this policy and I therefore call upon all stakeholders to rise to this challenge. This Policy shall be Government-led and it is the intention of Government to involve the private sector in its implementation through the Public-Private Partnerships. This partnership is especially important for mobilizing resources for infrastructure development.

At the operational level, it is expected that all ministries, institutions and

organizations shall take the National ICT Policy as a guiding document to assist in developing sector-specific ICT policies and plans that will allow the application of ICTs in their respective programmes and projects.

To demonstrate Government commitment in providing leadership, Cabinet approved the creation of the Department of Communications in the Ministry of Communications and Transport which will coordinate and oversee the implementation of this policy.

Now that the first milestone of developing the national ICT policy has been achieved, I wish to implore co-operating partners to consider ICT as a priority.

Hon. Abel M. Chambeshi, MP.
Minister
MINISTRY OF COMMUNICATIONS AND TRANSPORT

ACKNOWLEDGEMENT

My Ministry spearheaded the process of formulating the ICT Policy. To facilitate the process, a National Technical Committee comprising experts with varied experience in research and policy analysis, telecommunications, information technology, media as well as legal and regulatory issues was appointed. The team was assisted by an international Consultant who was hired on short term basis.

The policy development process started with the holding of a National ICT Policy Symposium on 25th August 2003 at Intercontinental hotel in Lusaka. The symposium attracted speakers from Ghana, Nigeria, South Africa and Botswana to share experiences on ICT Policy development.

The National Symposium was preceded by syndicate consultations with stakeholders which resulted in the production of the first draft ICT Policy document. The draft was launched on 23rd December 2003 and following the launch the document was subjected to further stakeholder meetings through provincial workshops. This process ended in August 2004.

Thereafter a second draft document was produced and subjected to public scrutiny through internet and print media. After this process a second national stakeholders' workshop a third and final draft document was developed reflecting the final views of stakeholders.

The final draft National ICT Policy document was submitted to the Ministry of Communications and Transport and subsequently to Cabinet Office for approval.

I wish to pay special tribute to institutions that accepted to provide experts to the national technical team, namely: Ministry of Information and Broadcasting Services; Ministry of Science, Technology & Vocational Training; Communications Authority Copperbelt University; University of Zambia; ZAMPOST; ZAMTEL; Bankers Association of Zambia; Computer Association of Zambia; CELTEL; and COMDEV(X) Ltd for website development hoisting and other specialised services offered to the Secretariat.

I also want to acknowledge the efforts of my predecessors for initiating the policy development process and co-operating partners in particular the Japanese Government for the pivotal role they played in financing the policy development process. Last but not least I would like to thank the UNDP for the financial and technical assistance for policy development through operational and project management support to the TICAD Secretariat in the Ministry of Communications and Transport. Tribute should also go to the World Bank and USAID who supported specific studies and capacity building to the Ministry respectively.

Finally, I want to thank all the staff in the Ministry who contributed in one way or the other to the successful development of this policy.

I look forward to more stakeholder support during the implementation process.

Brig. Gen. Peter Tembo (Rtd)
Permanent Secretary
MINISTRY OF COMMUNICATIONS AND TRANSPORT

TABLE OF CONTENTS

FOREWORD.....	ii
ACKNOWLEDGMENT.....	iv
WORKING DEFINITIONS.....	ix
LIST OF ACRONYMS.....	xi
PART ONE: POLICY BACKGROUND.....	X
CHAPTER 1 INTRODUCTION	1
CHAPTER 2 SITUATION ANALYSIS	3
CHAPTER 3 VISION	19
CHAPTER 4 RATIONALE	20
CHAPTER 5 GUIDING PRINCIPLES	22
PART TWO: DEFINING POLICY FOCUS AREAS - THE 13 PILLARS.....	24
CHAPTER 6 GOALS, OBJECTIVES & STRATEGIES).....	25
6.1 HUMAN RESOURCE.....	25
6.2 EDUCATION	27
6.3 ACCESS, MEDIA, CONTENT & CULTURE.....	29
6.4 ICT SECTOR	31
6.5 TELECOMMUNICATIONS INFRASTRUCTURE	33
6.6 E-GOVERNMENT	36
6.7 E-COMMERCE.....	38
6.8 AGRICULTURE.....	40
6.9 HEALTH.....	42
6.10 TOURISM, ENVIRONMENT & NATURAL RESOURCES	44
6.11 YOUTH & WOMEN.....	46
6.12 LEGAL & REGULATORY FRAMEWORK.....	48
6.13 SECURITY IN THE INFORMATION SOCIETY	51
PART THREE: INSTITUTIONAL FRAMEWORK & IMPLEMENTATION STRATEGY & MONITORING AND EVALUATION.....	53
CHAPTER 7. INSTITUTIONAL FRAMEWORK & IMPLEMENTATION STRATEGY.....	54
7.1 STAKEHOLDER ROLES	54
7.2 GOVERNMENT.....	55
7.3 PARLIAMENT	57
7.4 JUDICIARY	58
7.5 CO-OPERATING PARTNERS	58
7.6 REGULATOR	59
7.7 PRIVATE SECTOR.....	60
7.8 PROVINCIAL ADMINISTRATION & LOCAL AUTHORITIES.....	61
7.9 TERTIARY AND RESEARCH INSTITUTIONS	61
7.10 CIVIL SOCIETY	62
7.11 MEDIA.....	63
CHAPTER 8 IMPLEMENTATION STRATEGY & PLANS	64
CHAPTER 9 RESOURCE MOBILISATION	65
CHAPTER 10 MONITORING AND EVALUATION	65.

WORKING DEFINITION

<i>Broadcasting</i>	A term referring to the distribution of information using radio, television, internet, intranets, and other technologies used in mass communication
Convergence	The culmination of traditional services in telecommunications, online media, broadcasting and information technology into platforms and services making the ICT sector
Digital Divide	A term used to reflect the technological gap between people that have fully exploited ICT and those that have not. The digital divide is often associated with the resulting development gap in terms of social and economic performance.
E-Commerce	Refers to business activities involving consumers, manufacturers, suppliers, service providers and intermediaries using computer networks such as the Internet to conduct business.
E-Government	Refers to the delivery by Government of products, services, policies and the engagement of stakeholders in civic and government matters through the use of Information and Communication Technologies in order to achieve Government to Consumers, Government to Business and Government to Government interaction and transactions.
Information Based Economy	Refers to a country or region where ICT is used effectively to develop the economic foundation and market transactions.
Information Society	Refers to a country or region where information and communication technology has been fully exploited and is part of everyday life as an enabler of socio-economic development.
Information and Communication Technology	A generic term used to express the convergence of telecommunications, information, broadcasting and communications.
ICT4D	Promoting Information and Communication Technology as an

integral part of Development rather than technology focus alone.

ICT Parks	An high technology industrial area (park) specially designed to attract local and foreign direct investment in ICTs with many of the products produced designed for export market; usually this would also house incubator projects.
Incubator Projects	ICT projects designed for as start-up ventures with the hope of “growing” from a start-up to a self sustaining organizations after initial capital outlay and possible management consultancy
Information Technology	Embraces the use of computers, telecommunications and office Systems technologies for the collection, processing, storing, packaging and dissemination of information
Infrastructure	Refers to telecommunication backbone network over which communication services (Radio, TV, Internet, data delivery etc) Can be made; complimentary infrastructure includes roads, electricity, schools etc that help in spreading the development and use of ICTs.
Internet	A seamless and global network of individual, organisational And national computer systems <i>providing services such as internet browsing to users across the globe 24 hours a day</i>
Knowledge Based Economy	Refers to a country or region where ICT is extensively used to enhance the knowledge of society in general so that higher human capital brings improvement to the economy
Regulator	The authority on regulation of telecommunications broadcasting, information technology and postal services arising from the convergence of technologies and services.
Rural ICT Development Fund	Basket funding from licensed operators and other sources designed to “subsidies” the provision of ICT services in rural and underserved areas.
Online Publishing.	The provision of content using ICT tools such as the Internet; currently, the major daily newspapers are published on the internet and are accessed by anyone in the world.

LIST OF ACRONYMS

AISI	Africa Information Society Initiative
AU	African Union
B2B	Business-to-Business
B2C	Business-to-Consumer
B2G	Business-to-Government
CAZ	Communications Authority of Zambia
CBO	Community Based Organisation
CEC	Copperbelt Energy Corporation
COMESA	Common Market for Eastern and Southern Africa
DoC	Department of Communications
CTLD	Country Top Level Domain
FDI	Foreign Direct Investment
G2C	Government-to-Citizens
G2B	Government-to-Business
G2G	Government-to-Government
GDP	Gross Domestic Product
GIS	Geographic Information System
GRZ	Government of the Republic of Zambia
HIV/AIDS	Human Immuno Virus/Acquired Immuno Deficiency Syndrome
HIPC	Highly Indebted Poor Countries
HMIS	Health Management Information Systems
HRD	Human Resource Development
IBA	Independent Broadcasting Authority
ICT	Information and Communications Technology
ICT4D	ICT for Development
ITU	International Telecommunication Union
JICA	Japanese Agency for International Cooperation
M&E	Monitoring and Evaluation
MDGs	Millennium Development Goals
MIBS	Ministry of Information and Broadcasting Services
MCT	Ministry of Communications and Transport
MFNP	Ministry of Finance and National Planning
MSTVT	Ministry of Science, Technology and Vocational Training
NEPAD	New Partnership for African Development
NICI	National Information and Communications Infrastructure
NGO	Non-Governmental Organisation
PRSP	Poverty Reduction Strategy Paper
PPP	Public Private Partnership
R&D	Research and Development
TAZARA	Tanzania Zambia Railway Authority
TNDP	Transitional National Development Plan

TICAD/SU

Tokyo International Conference for African
Development/Special Unit

ixi

SADC

Southern Africa Development Community

SME

Small and Medium Enterprise

UN

United Nations

UNECA

United Nations Economic Commission for Africa

UNESCO

United Nation Education, Scientific and Cultural
Organisation

UNDP

United Nations Development Programme

USAID

United States Agency for International Development

WB

World Bank

WSIS

World Summit on the Information Society

WTO

World Trade Organisation

VSAT

Very Small Aperture Terminal

ZAMPOST

Zambia Postal Services Corporation

ZAMTEL

Zambia Telecommunications Limited

ZCCM

Zambia Consolidated Copper Mines

ZNBC

Zambia National Broadcasting Corporation

ZESCO

Zambia Electricity Supply Corporation

Part one: Policy background

CHAPTER 1 INTRODUCTION

The gap between the rich and poor nations and between certain groups within a country is a result of several factors. One such factor is inequitable access to resources among the citizenry and lack of technology to exploit the vast natural resources available in most countries. One fundamental difference between the developed and the developing countries is that the former are also rich in information and has a well informed citizenry which is able to adapt quickly to changing social and economic environments, hence utilizing opportunities to overcome development challenges such as poverty. In this regard, information is treated as a commodity which has potential to make significant changes in many aspects of our social and economic development.

ICTs can be used to bridge the digital divide within the context of globalization. The digital divide presents barriers by denying an opportunity for the people to take best practices and make them applicable in the possible ways.

Zambia has the opportunity to make a difference by adopting and using ICT as a tool available to reduce the development divide thereby increasing the chances of improving the quality of life of the citizens. ICT is an enabler to build an information centered society where everyone can create, access, utilize and share information and knowledge leading to greater productivity, greater competitiveness and sustainable economic growth, a precondition for poverty reduction. ICTs can also be used as an effective tool in enhancing good governance.

1.1 GLOBAL AND REGIONAL TRENDS AND COMMITMENTS

The developments in telecommunications and information technologies have improved and increased the connectivity between and within countries thereby removing barrier of time and spatial separation. This in turn has resulted in increased integration of markets, improved commerce and geo-political relations.

At global and regional level, a number of initiatives aimed at increasing the development and use of ICTs have been developed. The major drivers include the United Nations, the World Trade Organization, the International Telecommunications Union, the Universal Postal Union, the African Union and its specialized agencies such as the African Telecommunications Union, and the Pan African Postal Union, regional economic groupings such as the New Partnership for Africa's Development, Common Market for Eastern and Southern Africa and the Southern Africa Development Community.

Zambia has participated in a number of global and regional events that are focusing on ICTs as a tool for sustainable growth and development. Among the notable ones being the Declaration of Principles and Plan of Action from the World Summit on the Information Society and the NEPAD E-Africa Commission. Further the country is committed to the Millennium Development Goals and it is envisaged that ICTs can be harnessed to the achievement of these goals namely:-

- i) The eradication of extreme poverty and hunger;
- ii) Achievement of universal primary education;
- iii) Promotion of gender equality and empowerment of women;

- iv) Reduction of child mortality;
- v) Improvement of maternal health;
- vi) To combat HIV/AIDS, malaria and other diseases;
- vii) Ensuring environmental sustainability; and
- viii) Development of global partnership for the attainment of a more peaceful, just and Prosperous world.

At the sub-regional level Zambia has been an active player in ICT initiatives under COMESA and SADC. This policy therefore is influenced by the policy frameworks and principles recommended by the two bodies among them the following:-

- i) Increasing market size through integration and cross border trade with ICTs playing an integral part of the social and economic development of member states;
- ii) Competition among market players in the ICT sector in member states;
- iii) Conveying of regulatory authorities in telecommunications and broadcasting;
- iv) Implementing independent and technology -neutral legal and regulatory frameworks;
- v) Independence of market players especially the regulatory functions;
- vi) Private sector participation in the development of ICT products and services.

1.2 SOCIAL AND ECONOMIC IMPLICATIONS OF ICTs IN NATIONAL DEVELOPMENT

The Zambian economy has experienced decline since the 1980s due to several factors among them the low productivity in the mining, manufacturing and agricultural sectors. The net effect has been increased poverty levels now estimated at over 70 percent of the population living with less than US\$1 per day.

To address the economic quagmire Government liberalized the economy in 1991. This new economic path can be, in part made possible by advances in information and communications technology, which can reduce the cost of and increase the speed of communicating in the country hence abolishing barriers of time and space.

ICT has also made possible the integration of national systems of production and finance. Further ICTs are driving significant changes in both micro and national levels by; increasing effectiveness and reach of development interventions, by enhancing good governance and lowering the cost of the delivery of basic social services. In the sphere of education for example, ICTs have the potential to improve quality of education and training through e-learning and online learning.

CHAPTER 2 SITUATION ANALYSIS

The ICT sector in Zambia is categorized into four main sub-sectors, namely; Telecommunications, information technology, electronic media and postal communication system. In view of the above the sector needs to be addressed from a holistic point.

The Chapter discusses the current status of ICTs in Zambia and the challenges to be addressed by the policy.

2.1 HUMAN RESOURCE DEVELOPMENT

A number of institutions are involved in Education and Training of human resources in ICT programmes ranging from Certificate to Degree courses offering specialised subjects including Computer Science, Telecommunications/Electronics Engineering, Media training/information sciences, Vocational ICT programmes and skills development. Among the Institutions involved in human resource development in ICTs are the University of Zambia, Copperbelt University, ZAMCOM, ZAMTEL Staff Training College and Evelyn Hone College. A number of other public and private sector institutions offer various ICT related courses.

Other programmes include Industry Certified (Microsoft, CISCO etc) course and others based on foreign syllabi such as Institute for Management of Information Systems (IMIS) and City & Guilds of the UK. However, the compatibility of such programmes with the Zambian education curriculum and industry is very limited. Therefore, an assessment of the requirements and local institutional capabilities shall form the basis for a comprehensive human resource development programme in the country.

Despite the above scenario, Zambia is currently facing a shortfall in critical ICT skills required for developing its information and knowledge economy at managerial, professional and technician levels in order to facilitate the development, deployment and application of ICTs in both the private and the public sector.

Some of the challenges to be addressed include:-

- (a) Low ICT literacy in the country, which is a major obstacle to the development of Zambia's information society;
- (b) High cost of technology acquisition, thus making ICT technology and skill development programmes inaccessible to most Zambians;
- (c) The "Brain Drain" problem, which is resulting in considerable loss of the few skilled personnel from Zambia to other countries in search of better job opportunities;
- (d) Limited local ICT industry thus offering inadequate services and few job opportunities;
- (e) Lack of standardisation and certification programmes in the IT field resulting in external courses with little localisation to the Zambian education curriculum;

- (f) Inadequate institutional capacity among formal training providers to increase intake and output numbers of ICT graduates.

2.2 EDUCATION, RESEARCH & DEVELOPMENT

The Zambian education system especially in public schools is characterised by low ICT adoption rates. There are over 6,000 public schools out of which very few have ICT subjects as part of the curriculum. In 1998, the Ministry of Education started an initiative to introduce computer studies in selected secondary schools. The results have not been as expected; however, the initiative needs to be encouraged and scales up to all schools. On the other hand, private schools are promoting ICT literacy though only a small percentage of the pupils are ICT literate by the time they leave secondary school.

A number of research institutions have acquired human capacity to work with ICT tools such as computers. However, the level of use of ICTs and the outcome of such activities needs to improve. Holistic approaches to R&D with the support of ICTs need to be put in place. Again, R&D focused on developing products and services for the local ICT market need to be encouraged.

It is acknowledged that Zambia faces a number of challenges in the educational system. Some of these include:-

- (a) General financial and technological resource constraints that the Government faces in its effort to develop and improve the educational system including efforts directed at integrating ICTs in education;
- (b) Inadequate awareness on the benefits of integrating ICTs in the administration of the delivery chain in the education sector;
- (c) Lack of coordinated approach in the adoption and implementation of initiatives targeted at the deployment of ICTs within the educational system;
- (d) High opportunity cost of deploying ICTs in the educational system - it is difficult to justify spending scarce and limited resources on ICTs when many institutions are still lacking basic amenities and educational supplies; and
- (e) Shortage of teachers with ICT skills to meet the requirements of the schools, thus limiting ICT penetration within the education system.

2.3 PUBLIC ACCESS, MEDIA & CULTURAL HERITAGE

For the majority of Zambians, access to information is mainly by way of physical means such as libraries, postal communications and print media. However, radio and TV are some of the most popular means of access to information; though TV despite being the most attractive media has very limited coverage across the country. Equally important, access to information via networked systems such as the Internet and mobile phones is very limited mainly due to non-availability of telecommunications infrastructure and high access costs for many consumers.

Postal and Courier Services

Postal and Courier Services are mainly provided by ZAMPOST. The Corporation covers the country through a network of about 116 Post Offices, 64 Sub-Post Offices and 55 Postal Agencies.

A large percentage of the 72 districts have an operational post office. In addition, there are private courier services, which are concentrated along the Livingstone-Copperbelt corridor for delivery of parcels. However, some private courier operators now service provincial centres as well.

Telecentres

There are cafés and business bureaus offering telephone, Email/Internet access in major urban centres and a few in rural towns. Currently, there are about 300 licensed telecenters across the country by 2004 against 108 in the year 2000. However, a larger percentage is along the line of rail. This is mainly due to the relatively good telecommunication infrastructure, low capital and operation costs coupled with the high number of potential customers.

Library Services

The Ministry of Education operates the largest number of public libraries through the Zambia Library Service. Currently, there are 6 major public libraries across the country covering at least six of the nine provincial centres. The Copperbelt University, Mindolo Ecumenical Foundation and UNZA have adequate libraries facilities in comparison to other libraries across the country. Various other private libraries also exist in schools and colleges offering opportunities for access to information. Local authorities mainly run community libraries as part of the public service though most of them need urgent attention.

In general, public libraries are in a dilapidated state, normally equipped with outdated reading materials and are urban centred in most cases. Most of the materials are imported with little local content and knowledge resources.

The process of equipping public libraries managed by the Zambia Library Service with ICT tools including Internet connectivity has started. However, the installed capacity needs to be increased in terms of hardware and Internet bandwidth. The main library at UNZA has reached advanced levels in integrating ICTs as part of the services to the university community and the general public.

On the other hand, the national Archives is one source of political, social and economic information, particularly historical perspectives about Zambia which forms good background on the geo-political development agenda of the country. Access to such information by the public is very limited both in physical and electronic forms.

Electronic Media

Broadcasting in Zambia dates back to 1941 when the colonial government opened a radio station in Lusaka. Until after the re-introduction of multi-party politics in 1991, radio and TV broadcasting was a preserve of the state, either as a Government department or as a statutory body. However, the enactment of the following laws to facilitate the liberalisation of the media industry has opened new avenues for radio and TV services across the country:

- (a) Radio Communications Act of 1994
- (b) Independent Broadcasting Authority Act of 2002
- (c) ZNBC (Amendment) Act of 2002

The above legislation together with the Zambia National Broadcasting (ZNBC) Act of 1987 and the ZNBC Licensing Regulations (1993) provide for the legal and regulatory framework for the broadcasting sub-sector in Zambia. The Independent Broadcasting Act also establishes the Independent Broadcasting Authority as the regulator for the broadcasting sub-sector. However, the regulatory agency is not yet functional.

Since 1994, Zambia has made significant advances in liberalising the airwaves thus allowing private sector participation in the sub-sector. This has resulted in the opening of a number of commercial and community radio stations. There is at least one (1) community radio station and ZNBC FM Transmission in each province. Three TV broadcasting stations are operational, namely; ZNBC, Trinity Broadcasting and Muvi TV. On the other hand MultiChoice Zambia, part of the pan- African pay TV Company is providing subscription based Satellite TV services across the country while CASAT also provides pay cable TV services in Lusaka. On the other front, the convergence of technologies and markets has created opportunities such as Internet radio broadcasting, which is becoming popular among local commercial radio stations thus reaching the entire world with very minimum costs. While this situation expands opportunities in the ICT sector, the current regulatory framework in telecommunications and broadcasting sub-sectors are slowly becoming inadequate in addressing new challenges arising from convergence of services.

Some of the challenges include:

- (a) Non-availability of ICT tools and services especially in rural and underserved urban areas;
- (b) High cost of access to ICT tools and services whenever available;
- (c) Inadequate local content to support cultural promotion and traditional Knowledge development;
- (d) Limited coverage of electronic media across the country;
- (e) The role of ZNBC as the “national broadcaster” with respect to information delivery to the General public amidst liberalised airwaves needs clarity to ensure, responsibilities and equity;
- (f) The regulation of Internet Telephony (VoIP) and Broadcasting amidst the

proliferation of Multimedia technologies and Internet.

2.4 ICT SECTOR

The ICT sector is represented by a four-tier system, namely policymaking, legal and regulatory framework, operators and consumers (end users).

Policy Making

The Policy making machinery in the country is an important component shaping the ICT industry. Given the crosscutting nature of ICT, all line ministries, legislators, traditional leaders, co-operating partners, public sector, private sector, civil society and individuals are key stakeholders to the policy making process. However, with respect to the ICT Portfolio, the Ministry of Communications and Transport is charged with the responsibility of setting the policy direction for the industry and country at large taking into account stakeholder views. Therefore, a clear policy framework is the foundation for the development of ICTs in the country.

Legal and Regulatory Framework

The responsibility for development of the legal framework for the sector lies in the ministry in charge of the ICT portfolio supported by the ministry responsible for the Justice portfolio and the legislature (Parliament). However, another important component in the process is the regulatory function in the sector. Currently, the Communications Authority of Zambia and the Ministry of Information and Broadcasting Services carry the regulatory functions in Telecommunications and Broadcasting sub-sectors respectively. With the enactment of the IBA Act, an Independent Broadcasting Authority will assume the responsibility of regulating the broadcasting sub-sector.

Operators

At the operator level, the major players can be classified as follows;

(a) Telecommunications Services

The telecommunications sub-sector is composed of traditional fixed telephony and mobile communications based on the Global System for Mobile (GSM) communication standard. Another category in this area includes Internet Service Providers. Equipment installation and other services is a small component of the sub-sector.

(b) Information Technology

This category comprises businesses involved in office automation and networking solutions such as supply and installation of computers and networks, system vending, end user training and distributorship. Over the years, the number of projects in this category has increased. However, foreign companies carry much of the substantial works leaving local companies to provide very limited services to clients.

(c) Postal Services

ZAMPOST is the major player in this category. However, a number of private sector competitors have entered the market especially in the courier business. Due to the introduction of technologies such as Internet on the market, the letter-based system has registered a downward trend over time. However, given the potential of E-Commerce in the country due to increased Internet use; there is great potential for the postal system to contribute significantly to E-Commerce penetration in the country. Therefore, re- engineering of the sub-sector is required to fit the new business environment.

(d) Broadcasting Services

Radio and TV form the key components of the sub-sector. The traditional approach to broadcasting has changed significantly over the years. Satellite and Internet technologies have created new opportunities and challenges for policy makers, broadcasters and regulators. This requires a lot of ingenuity given the not-so-clear separation of Radio/TV and Telecommunications services in the current scenario where technology and market convergence are driving diverse industries to merge. Currently, electronic content can be carried irrespective of the technology whether it is radio/TV or telecommunications transmission networks. Therefore, this situation is changing the legal and regulatory framework required to administer the sub-sector.

Consumers

The consumers of products and services form an important component of the sector. These include end users, dealers in consumer electronics, consumer associations and corporate customers.

A number of factors have been identified as inhibiting the growth of the local ICT industry. Among the key factors affecting the growth of a vibrant private sector-driven ICT sector are:

- (a) Many industry players consider the current investment regime (incentives and taxes) to be unattractive for recapitalisation and new investments in telecommunications, broadcasting and Information Technology subs-sectors;
- (b) Lack of access to affordable capital among Zambian entrepreneurs in the ICT industry; especially start-up capital for SMEs in the sector;
- (c) High import tariffs and taxes imposed on ICT products and services are regarded as having a negative impact on the expansion of the ICT sector, this is despite the reduction of duty on computers from 15 to 5% in the 2004 budget;
- (d) Inadequate supporting infrastructure development such as roads, telecommunications, and electric power to increase the demand for ICT services;
- (e) Poor coordination of the ICT sector resulting in the inability to attract adequate domestic and foreign direct investment;
- (f) Lack of a coordinated industry voice on business matters affecting the sector; and
- (g) Limited regulatory powers amidst convergence of services. Information Technology is not regulated despite forming a key component of the ICT sector.

2.5 TELECOMMUNICATIONS & SUPPORTING INFRASTRUCTURE

The major telecommunications infrastructure carrier for the country is ZAMTEL, covering most parts of the country using various technologies. However, over time the infrastructure capacity has deteriorated due to technology changes and system inadequacies.

In 1994, Parliament enacted the Telecommunications Act, which resulted in the restructuring of the telecommunications sub-sector by separating the posts and telecommunications functions in the Posts and Telecommunications Corporation (PTC) into two commercial entities: ZAMTEL and ZAMPOST. In addition, this included the removal of regulatory functions from PTC; thus resulting in the establishment of an autonomous regulatory agency, the Communications Authority of Zambia (CAZ).

In addition, the Radio Communications Act of 1994 gives CAZ the responsibility of administering the utilisation of the Radio Frequency Spectrum, an important component in the effective performance of the telecommunications and broadcasting sub-sectors.

The liberalisation opened up the market to other competitors in almost all segments of the entire telecommunications industry apart from the Public Switched Telephone Network (PSTN) and the International Gateway. ZAMTEL maintains monopoly in the PSTN market while efforts have been made to liberalise the International Gateway component.

Public Switched Telephone Network

ZAMTEL, a 100% state-owned company is the only provider allowed to operate a public switched telephone network (PSTN) in Zambia. It provides a wide range of services including local, national, long distance, and international fixed telephone services, domestic satellite telephone (Domsat), mobile telephone, and leased line services. ZAMTEL Internet service was commissioned in May 1997.

The transmission network is predominantly analogue and is mainly based on microwave technology. A number of microwave trunk routes carry traffic to major provincial centres. However, a digital microwave network linking Lusaka to Copperbelt province, Eastern province and Siavonga has been commissioned. A digital backbone linking Lusaka and Livingstone is being installed as part of ZAMTEL's network upgrade. Traffic to medium sized towns and rural areas is carried via microwave links that also provide interconnection with neighbouring countries where applicable.

The installed capacity of fixed telephone lines is about 90,000 but the demand has over time exceeded the available capacity resulting in one of the lowest teledensity in Southern Africa of only 0.9 per 100 people (9 people per 1000 with telephone service) across the country.

Satellite Networks

ZAMTEL operates three earth stations forming the International Gateway for links to USA,

Europe and Asia; Mwembeshi I was installed in 1974, Mwembeshi II in 1987 while Mwembeshi III was completed in 2002. Apart from telephone services, all earth stations transmit and receive international television via INTELSAT satellite. In recent years, ZAMTEL has also commissioned a Domestic Satellite system to provide telephony services to remote rural areas. Unfortunately, this service has not been extended beyond Sesheke, Sinazongwe and Kaputa, which were commissioned in 1995.

Wireless Local Loop (WLL)

ZAMTEL has installed the WLL system to cater for peri-urban communities that are closer to the exchanges but cannot be serviced by wireline technology. However, deployment and coverage of the WLL system is very limited. ZAMTEL is currently conducting a gradual replacement of the analogue WLL system with digital technology, mainly in urban areas along the line of rail.

National Fibre Optic Backbone

Unlike neighbouring countries which have made substantial investments in telecommunications infrastructure, Zambia lacks a modern fibre optic backbone for national and regional interconnection, despite the fact that fibre is terminating at Zambia's borders: Zimbabwe at Kariba, Botswana at Kazungula and Namibia at Katima Mulilo. The Copperbelt Energy Company (CEC) has installed a 24-core 520km fibre optic backbone on the Copperbelt, whose excess capacity is available for resale to potential users. On the other hand, ZESCO has already installed a 45km fibre optic cable between Lusaka and Kafue. It is desirable that a national network covering the entire country will be developed taking advantage of existing infrastructure such as electricity powerlines as a means of quick rollout of the network (using powerline technology, about 3,500km of fibre optic cabling is needed to cover the country up to provincial level).

In order to leapfrog the existing capacity and technology requirements for overhauling the existing telecommunications infrastructure, thereby laying a solid foundation for delivering current and future services ranging from digital radio, TV, Internet, data and other multimedia services, Fibre based technology provides a comprehensive and reliable network for the country. The possibility of reducing telephone and Internet costs can be achieved by interconnecting the proposed national Fibre Optic network to the under-sea cable running along the African coast (west and east) connecting to Europe and Asia; some of the most active communication destinations for Zambia.

However, this requires implementation modalities in terms of network licensing, access conditions, management and operation of the backbone in the most optimal and beneficial manner to the entire country.

Mobile Phone Services

The CAZ has licensed three mobile cellular service providers by 2004 from one (01) in 1996, namely ZAMTEL operating as CELL "Z", TELECEL (now acquired by MTN group) and CELTEL (formerly ZAMCELL) and is considering the entrance of a fourth mobile

operator on the market.

One of the results of the liberalisation of the telecommunications sub-sector has been the accelerated development of mobile telephony. The most evident market difference between mobile and fixed line services is that, worldwide, mobile communications is growing much more rapidly in rollout and access. In 2002, few years after introduction of mobile communication in Zambia, the number of mobile subscribers surpassed the fixed-line (ZAMTEL) subscribers and is still growing for the following reasons:

- a) There is unfulfilled demand for service in both urban and rural areas;
- b) Mobile networks can be installed more rapidly than fixed lines;
- c) Pre-paid mobile cellular service allows users to obtain services where they may not normally qualify for a fixed or mobile post-paid service because of their low or irregular income and/or lack of fixed-abode;
- d) Users find the functionality of mobile phones extremely useful; compared to fixed Lines; and
- e) Mobile technology infrastructure is less susceptible to vandalism

The current combined subscriber base on the mobile networks stands at about 450,000 in just 5-8 years surpassing 90,000 fixed line subscribers that have been achieved over many years. However, the majority of the subscribers are along the line of rail. Currently all provincial centres are covered by at least one of the cellular network providers. On the other hand, fixed line growth is expected to slow down in the near future mainly due to the flexibility and convenience of mobile communication. However, the source of future growth for fixed lines will be due to the demand for faster and cheaper Internet access. Organisations and individuals may increasingly opt for mobile phones and retain fixed-line primarily for Internet access and other value-added services. This may only happen when mass-market broadband technologies take root in the country.

Internet Service Providers

Zambia is the pioneer of Internet in Sub-Sahara Africa outside South Africa in the early 90s. However, this advantage has not been exploited in that the country now lags behind many African countries that started Internet services just a few years ago.

However, the Internet sub-sector is fully liberalised and is one of the most competitive in the ICT services industry in Zambia. The CAZ has so far licensed a number of players out of which six (6) are operational by 2004 from two (02) in 1996.

The Internet market in Zambia is still developing with approximately 12,000 Internet subscribers and an additional 30,000 Internet users mainly patronising Internet cafes. However, the potential for rapid growth is undermined by inadequate telecommunication infrastructure development across the country, poor telephony accessibility and high access costs.

Though there are no market entry restrictions for new ISPs, the licensing fee has proven prohibitive to many Zambians. Secondly, the limit on foreign shareholding for ISPs

and other similar value-added licenses is inhibiting most Zambians to enter the market due to inadequate access to start-up capital (financing) for such ventures. This has negated the benefits of the shareholding requirement though well intended to ensure that as many Zambians as possible are empowered as entrepreneurs in the sector.

Private Data Networks

The provision of private data networks has been liberalised and is fully competitive. The financial sector leads the private data network segment. Most banks and other financial institutions involved in tax revenue collection and pension funds have set-up their own VSAT data network solutions linking branches across the country; this includes national and international links in the case of international banks. However, VSAT technology has proved much more expensive in the long term especially with respect to space segment costs paid to foreign operators/service providers. The introduction of these technologies in Zambia has tremendously improved the delivery of financial services, with cash withdrawal facilities including international credit/debit cards such as VISA offered on the market. On the other hand, Internet Banking has just been introduced as some of the innovative services on the market. Such services will require reliable and cost-effective transmission and access technologies thus helping spread banking services to rural areas. On the other hand, Virtual Private Network (VPN) licenses have increased from one (01) in 1996 to fifteen (15) in 2004.

Other Supporting Infrastructure

Telecommunication infrastructure alone cannot be cost-effective if it is delivered in isolation. Given the high cost of deploying telecommunications infrastructure such as Fibre Optic, there is need to have a holistic approach to social and economic infrastructure development strategy in the country.

The development of road networks and rural electrification schemes play a complimentary role in attracting telecommunication rollout. The existence of roads and electric power whether via grid or off-grid (using renewable/non-renewable) technology can increase the uptake of ICT tools such as computers, TV, radio etc. This strategy is imperative for schools and clinics which are major growth points” in urban and rural areas. Therefore, the delivery of integrated infrastructure (roads, electricity, telecommunications) should be adopted as a deliberate measure during design and construction of schools, clinics, farming blocks and resettlement schemes etc. This approach tends to lower the overall cost of delivering infrastructure especially in rural areas and in turn lowers the cost of services to the end user.

Therefore, some of the challenges in the deployment and delivery of telecommunications infrastructure across the country are;

- (a) High technology acquisition and deployment costs especially in the development of the national telecommunications backbone infrastructure;
- (b) Limited coverage and poor quality of existing telecommunications and Internet infrastructure in the country;

- (c) High cost and limited access to ICT infrastructure incurred by individuals and businesses;
- (d) Lack of special incentives for private sector participation in the development, management and operation of ICT and related infrastructure projects;
- (e) Monopolies in wholesale and retail markets of the telecommunication services sub-sector including infrastructure;
- (f) Duplication of communications infrastructure, especially in the public sector resulting under-utilisation of scarce resources;
- (g) Lack of universal access/service goals coupled with lack of a rural telecommunication infrastructure and service development strategy;
- (h) Inadequate licensing framework given the convergence in telecommunications and Broadcasting and the emergence of new services offered by new technologies;
- (i) Lack of a structured and streamlined Internet governance system in the country; and
- (j) Legalising and regulation of “outlawed” but cost-effective technologies such as Voice over Internet Protocol (VoIP)

2.6 E-GOVERNMENT

Electronic Government (E-Government) is the provision of Government products and services through electronic technologies such as Internet, E-mail, Electronic Document Management Systems, and electronic payment (Financial Management Systems)/service delivery.

Currently, a number of initiatives are being undertaken within the public sector. The number of ICT projects has increased over the years resulting in building blocks such as the Integrated Financial Management Information System (IFMIS) Project, Payroll Management and Establishment Control Project and building of Local Area Networks; these are central to the establishment of E-Government. However, such building blocks are being implemented in the public sector with very little coordination and integration with existing systems at operational level. In addition, over-duplication of telecommunications infrastructure has resulted in inefficient and ineffective projects with very little positive impact on the overall development agenda. Some of the challenges in E-Government development include;

- (a) Inadequate and fragmented ICT infrastructure and connectivity within the public sector;
- (b) Lack of supportive institutional framework to coordinate and promote E-Government development;
- (c) Inadequate manpower in the area of computing and information technology in the public sector;
- (d) Concerns about security of information as well as inadequate mechanisms for information flow within the public sector.

2.7 E-COMMERCE

Electronic payment systems are the cornerstone of E-Commerce development in the country by ensuring convenience and flexibility when undertaking commercial transactions and trade. Therefore, the banking sub-sector plays an important role in the development of E-Commerce solutions. With the adoption of Internet, some of the financial institutions are already offering Internet banking and international cash payment via electronic cards such as VISA to customers. Mobile commerce solutions via GSM phones are increasing on the market mainly due to the convenience, flexibility and increase in the use of mobile phones. However, the growth of E-Commerce depends on good telecommunications infrastructure, effective legal/regulatory framework, widespread use of E-Commerce related services, awareness creation and development of E-commerce solutions etc.

Some of the challenges in the development of E-Commerce include:

- (a) Lack of effective ICT infrastructure to support widespread use of E-Commerce solutions;
- (b) Inadequate laws and legal system to support E-Commerce;
- (c) Inadequate innovative solutions from the ICT industry that can promote the spread of E-Commerce;
- (d) Lack of supportive and integrated investments in ICT, energy and other social infrastructure projects to increase uptake, access and demand for E-Commerce.

2.8 AGRICULTURE

The National Agriculture Information Service (NAIS) is the major information and communication framework for farmers and other stakeholders in the agriculture sector. However, this channel is limited to radio programmes especially servicing the rural areas. Programmes on TV are proving to be more effective but the limited coverage of the TV network across the country has resulted in limited exploitation of the technology. Usage of effective voice communication systems among farmers such as “radio” phones as a community service has not been exploited. However, it is desirable that TV, Phones and Internet should make an impact as information/communication channels among stakeholders in the sector.

Some of the challenges in integrating ICTs in Agriculture include:

- (a) Inadequate channels for information delivery among framers, businesses and policy makers;
- (b) Poor quality of existing infrastructure and high cost of ICT infrastructure rollout thus limiting access to ICT products and services among stakeholders;
- (c) Limited coverage of effective media tools like radio and TV among rural farming communities coupled with high cost and limited energy (electric)

- supply to enhance uptake of ICTs;
- (d) Inadequate ICT literacy skills especially in rural areas; and
- (e) Lack of integrated approach in rollout of ICTs, energy and other social services infrastructure.

2.9 HEALTH

The potential of ICT in contributing to the efficient and effective performance of the health sector is very high especially in remote diagnosis and treatment. Timely collection, management and dissemination of critical information has significant bearing on the performance of the sector in general.

To this extent, the health sector has embarked on reforms that include development of Health Management Information Systems at various levels. Equally important is the Telemedicine programme being initiated as a deliberate effort to maximise the services provided by the few but highly experienced medical personnel whose services can only be extended through technologies such as Telemedicine. Therefore, connectivity of medical institutions to services such as telecommunication and Internet is an important milestone in the use of ICTs in the health sector.

Telemedicine also can be used to provide both basic and continuous skills transfer to health professionals. This will help mitigate isolation of health professionals in rural areas. The dissemination of medical information through ICTs will facilitate informed decision-making particularly in hard to reach areas.

Some of the challenges in integrating ICTs in the health sector include:

- (a) The need to improve ICT Infrastructure to support basic communication systems and specialised applications such as telemedicine;
- (b) Inadequate ICT awareness and skills among health professionals to effectively utilise the ICT tools and services;
- (c) Inadequate support services for installed ICT equipment especially in rural areas;
- (d) Incorporating and prioritising ICT in the core business of healthcare delivery.

2.10 TOURISM, ENVIRONMENT & NATURAL RESOURCES

The Zambian travel and tourism industry largely depends on the availability of efficient and effective infrastructure across the country. This infrastructure includes roads, power supply, lodges and airports. Above all, telecommunication plays a vital role in the development of such infrastructure and the overall performance of the sector at national, regional and international levels. Specific ICT services such as mobile communications, broadcasting networks, electronic facilities and services add immense value to the desired performance of the sector.

Zambia's most famous tourist destination, Livingstone, has seen an increase in communication facilities over the years including international "roaming" service on major

GSM networks thus increasing the flexibility and convenience especially for international tourists. Special attention is needed to rollout communication facilities in other important destinations especially in national parks as part of a comprehensive programme to upgrade facilities in various upmarket tourist destinations. This is so because Zambia will for a long time to come depend on wildlife based tourism. Therefore, ICTs can trigger enormous investments especially in wildlife based tourist destinations and contribute to general improvement of commerce, travel and tour operations.

However, the proliferation of ICT equipment such as computers and other accessories requires special effort to mitigate any negative impacts on the environment and natural resources. Therefore, environmental strategies need to be adopted at an early stage in the acquisition, manufacture and disposal of ICT products.

Notwithstanding the above situation, the industry faces a number of challenges that are constraining the development of the sector and limiting its contribution to national development. Some of these include:

- (a) Limited and inadequate ICT infrastructure, which presents significant barriers to the deployment of value-added ICT services and effective application of ICTs in the sector;
- (b) Lack of adequate, reliable, timely and relevant information on tourism products and services including lack of information on tourist destinations available in the country;
- (c) Lack of proper ICT hardware and accessory disposal mechanisms and/or recycling technologies.

2.11 YOUTH AND WOMEN

The value of ICTs is largely seen through increased productivity, more efficient operations, improved information access and dissemination; equitable participation in social, political, and economic spheres; access to education and health; and breaking barriers of isolation. Therefore, successful diffusion, application and use of ICTs in the development process will depend on the involvement of women who are marginalized in society and yet constitute over half (51%) of the Zambian population.

On the other hand, youths constitute a special group capable of using, deploying and taking ICTs into the future. This is even true given that, youths constitute about 60% of the population and are usually the early adopters of ICTs in any given society. It is widely accepted that any development activity that excludes youths and women will not achieve sustainable results.

Information access and dissemination are some of the key empowerment tools for youths

and women as special groups. Currently, the emergence of GSM (mobile) communications system has increased the level of mobile “teleshops” most of which are owned and operated by youths. Therefore, by increasing sustainable programmes targeted at youths and women as special groups, greater empowerment opportunities can be created.

A rapid survey conducted among the youths along the line of rail revealed the following;

- i) Using media channels for accessing information, 96% of the youths listen to the radio, 81% read newspapers, 60% read magazines, 51% access the Internet for purposes other than email; daily usage of the Internet stands at 13% with the majority being College/University students;
- ii) The purpose for which they access information is diverse; however, the survey reveals that 53% is for educational opportunities, 52% for sports and 48% for job opportunities;
- iii) About 44% of the youths own mobile phones which are used primarily for voice and “sms” communication;
- iv) Libraries on the other hand are sources of information for 59% of the youths mainly Associated with school/academic work.

Some of the challenges of ICTs among youths and women are:

- (a) Low ICT literacy and skills levels especially among women;
- (b) Low opportunities for access to ICT products and services; and
- (c) Entry barriers (financial, skills etc) for youths and women especially as entrepreneurs.

2.12 LEGAL & REGULATORY FRAMEWORK

In 1994, Parliament enacted the Telecommunications Act, which resulted in the restructuring of the telecommunications sub-sector; removing the posts and telecommunications functions in the Posts and Telecommunications Corporation (PTC) into two separate commercial entities: ZAMTEL and ZAMPOST. In addition, this included the removal of the regulatory functions from PTC through the establishment of an autonomous regulatory agency, the Communications Authority of Zambia (CAZ). On the other hand, the regulation of the postal sub-sector is still carried out by the Ministry of Communications and Transport through a Licensing Committee comprising various stakeholders.

Currently, the CAZ is responsible for regulating the provision of telecommunications products and services in the country. Its specific functions include issuing licences and promoting competition amongst providers of telecommunications services and products, promoting the interests of consumers and other users of ICT services/ products as well as ensuring that the benefits of the sector accrue to the nation at large. In addition, the Radio Communications Act of 1994 gives the CAZ responsibility for administering the utilisation of the Radio Frequency Spectrum as a scarce national resource.

This function has impact on the performance of radio and TV broadcasting in the country. However, the Ministry of Information and Broadcasting Services has been undertaking the regulatory function until recently. As part of the restructuring in the broadcasting sub-sector, the Independent Broadcasting Authority Act of 2002 provides for regulation of broadcasting outside the Ministry. Therefore, the functions of CAZ and IBA in the sector need to be harmonised taking into account the already converging telecommunications and broadcasting markets such as internet radio broadcasting and *online* content publishing.

Some of the challenges that need to be addressed include:

- (a) The regulation of converging technologies, markets and services within the context of compartmentalised regulatory frameworks for telecommunications, broadcasting and other sub-sectors;
- (b) Institutional capacity to support the regulation of dynamic and fast technology oriented market;
- (c) Definition of clear roles and responsibilities among key players including policy makers, regulators and operators;
- (d) Addressing Intellectual Property issues amidst inadequate legal framework on copyright, trademarks, patents etc;
- (e) Inadequate capacity to deal with complex matters such as security of information systems, cyber crime, misuse of ICTs etc.

2.13 SECURITY IN THE INFORMATION SOCIETY

In general, one of the greatest concerns in “connected” societies is security of information passing through networks and systems such as computers, financial transactions, health records etc. As Zambia embraces ICTs, more security concerns and abuse shall arise if no counter measures are put in place.

Already, Zambia has experienced cases of misuse of ICTs especially with respect to “corrupting” website content. The proliferation of Internet and other ICT applications will also create opportunities for misuse. However, with measures such as implementing security policies, laws and technology solutions aimed at securing information, networks and systems, the impact can be mitigated.

Therefore, every effort shall be made to ensure that as the country adopts, implements and uses ICTs in all spheres of life, security measures are put in place to minimise negative impacts on society at large. Specific challenges include:

- (a) Security of government, public and private networks and communications systems in general; and in particular those systems carrying sensitive and critical data/information of great value to Government, businesses and individuals;
- (b) Protection of networks and information systems to guard against various types of malicious crimes and unauthorised access; safeguarding against undermining consumer confidence in online services including those based on E-Commerce, E-Government and E-Health systems;
- (c) Privacy of individuals, businesses and Government arising from connectivity to local, national and global networks.

2.14 POLICY IMPLEMENTATION

Some of the issues that have contributed to the low ICT uptake and penetration in the country are lack of coordination and leadership in creating the vision for the sector. However, the initiative to develop this policy is the biggest step in creating a clear roadmap/vision for the sector.

Therefore, the success of all the commitments and provisions of this policy depend on how well the implementation will be coordinated. The requirements include sustainable and effective institutional framework, coordination and resource mobilisation. Other challenges include;

- (a) Leadership of the national ICT portfolio; and the visibility of the National “Champion” for ICTs among the public;
- (b) Capacity for Policy formulation/development at various levels of society;
- (c) Institutional framework and capacity for policy implementation at national, provincial and district levels;
- (d) Developing clear roles and responsibilities of various stakeholders;
- (e) Mainstreaming of ICTs by Cooperating Partners in country programmes; and reflection of ICT commitment in national budgets;
- (f) Inadequate and ineffective legal and regulatory framework;
- (g) Inadequate capacity to undertake ICT investment promotion/campaigns at national, regional and international levels.

CHAPTER 3 VISION

The national ICT Policy is aligned to the following vision statement.

A Zambia transformed into an information and knowledge-based society and economy supported by consistent development of, and pervasive access to ICTs by all citizens by 2030.

3.1 VISION ELEMENTS

In realising the above vision;

- (a) The Government recognises the strategic opportunities and benefits that Information and Communication Technology offers to accelerate social and economic development across the country;
- (b) The Government realises that access to information and knowledge are some of the pre-requisites for wealth creation and for effective participation of Zambia in the global economy currently dominated by information and knowledge-based societies;
- (c) The Government further recognises the critical role that a high capacity, reliable and geographically distributed telecommunications backbone infrastructure covering the entire country can offer in accelerating ICT penetration; providing access to information and knowledge resources, domestic and global markets as well as in creation of empowerment opportunities for all Zambians;
- (d) The Government acknowledges the need for integrated national planning in order to ensure that other sectors of the economy benefit from the deployment of ICTs as part of social and economic development;
- (e) The Government is aware that the transition from a natural resource to a knowledge-based economy will depend on visionary leadership as well as the availability of quality human resource needed to steer the nation into an information society;
- (f) The Government is cognisant of the global and regional trends of the convergence of technologies, services and products and the resulting impact. In managing the telecommunications, computing, broadcasting, media and postal services sub-sectors;
- (g) The Government is fully aware that ICTs alone cannot have an appreciable impact on Zambia's development prospects unless the use of ICTs in the society and economy is done within the context of poverty reduction

and other programmes addressing a number of critical success factors at central and local government;

CHAPTER 4 RATIONALE

In broad terms, the development of the National ICT Policy is designed to achieve the following:

- (a) Facilitating the implementation of constitutional provisions related to information and communication
The constitution recognises the “Right to Information” as implied in the freedom of expression. The implementation of the above commitment requires a policy framework that underpins access to information.
- (b) Creating leadership and vision in the ICT sector
The institutional framework in this policy creates the visibility that ICT deserves at the level of Government. This is in line with other countries that are reaping the benefits of adopting ICTs as part of the national development strategy; many countries on the African continent are recording success in general and ICTs in particular based on this approach.
- (c) Clear definition of roles and responsibilities among stakeholders
The National ICT Policy shall adequately address the roles and responsibilities of various parties such as the Ministry responsible for the ICT portfolio, the Regulator, Legislature, Judiciary, Operators/Service Providers, Public and Private sector as well as Civil Society, Consumers and Individuals.
- (d) Support the creation of adequate and effective sector legislation and regulatory framework
The current legal and regulatory framework governing the ICT sector is considered inadequate by industry players in addressing concerns mainly because it was drawn without a clear sector policy in place; thus creating room for speculation on key policy issues as well as lack of clear direction on roles and responsibilities. Therefore, the revised legislation will draw its powers from this Policy.
- (e) Creating investor confidence in the ICT sector
The National ICT Policy sets clear guidelines on the “Dos and Don’ts” to the local and foreign investors in the sector, especially the private investors thus creating certainty and long-term investor confidence.
- (f) Ensuring coordinated and effective use of ICTs as an instrument for accelerated social and economic development
The digital divide and hence the development divide existing between the developed and developing countries is largely due to economic differences

arising from technology utilisation including ICTs; while developing countries are still focused on resource based economies ICTs have become economic drivers in developed countries. Zambia can benefit from this lesson to break the chain of poverty.

- (g) Ensuring rational and harmonised application of ICTs and use of scarce resources
The National ICT Policy establishes the technical, legal and institutional framework that guarantees not only a rational and harmonised use of ICTs for sustainable development but also a more profitable participation of stakeholders in sector and country activities.
- (h) Enhancing Zambia's competitiveness in the global information society & economy
The relevance of any given country in the global economy that is heavily characterised by use of information as a commodity is determined by the effectiveness and efficiency of using ICTs as part of the national development framework. Indeed, information and communication technologies have become, in this information age, the great common denominator of development projects, ranging from agriculture, mineral prospecting, environmental management, education, health, culture, tourism etc.
- (i) Creating a positive sector benchmark for cooperating partners
Policy reforms in any sector are some of the benchmarks used to guarantee technical and financial assistance by many Cooperating Partners. Therefore, the existence of a sector policy creates not only confidence sector governance issues but also developmental aid flow a key element in resource mobilisation for implementing ICTs in the country.
- (j) Creating a framework for addressing and endorsing international commitments
Zambia has participated in various activities of the United Nations, AU (NEPAD) and regional bodies such as COMESA and SADC in the area of ICT. Endorsing and implementing the provisions of such declarations and protocols require adequate sector policy framework.

CHAPTER 5 GUIDING PRINCIPLES

The implementation of this Policy shall be guided, among other things by the right of access to information, transparency, fairness and accountability. The following shall also be taken into account as key guiding principles:

- (a) This policy is designed to guide and mainstream the use of ICTs in all sectors of the economy; hence the policy is an ICT for Development (ICT4D) policy designed to fit within the socio-economic development agenda of the country rather than a stand-alone technology framework;
- (b) In order for this policy to make appreciable impact on Zambia's social and economic development, the policy goals and objectives shall be integrated into the overall national developmental objectives, priorities and programmes such as the Poverty Reduction Strategy Programme and National Development Plans. Therefore, all sectors are expected to draw their ICT policies from this framework;
- (c) This Policy shall be Government-led and Private Sector-driven during implementation. Therefore, Public-Private Partnerships (PPP) shall form the basis for implementation especially in matters and projects of national character and importance;
- (d) Government shall take leadership mainly in facilitating the mobilisation of investment required for development of a national telecommunications infrastructure backbone as well as the implementation of this policy;
- (e) This policy shall be supported by appropriate legislation aimed at effective separation of roles and responsibilities for policy formulation/guidance, regulation and operation in order to ensure transparent and effective regulatory functions based on convergence principles and establish institutional mechanisms for policy implementation;
- (f) The upgrading of existing and development of new infrastructure such as roads and electric power shall also be taken into account as complimentary services to the successful rollout of the telecommunications infrastructure and ICT services in order to increase penetration and open new investment opportunities across the country;
- (g) Priority shall be given to the establishment of coordination mechanisms at different levels to allow for integration of ICTs in key functions of society in order to ensure sustainability of ICT programmes and projects;
- (h) A deliberate and accelerated ICT manpower development policy and implementation plan shall form the basis for human resource development at all

levels in the country

- (i) The implementation of this policy shall be supported by intensive and extensive public awareness activities at all levels of society. This is expected to create demand for ICTs in areas such as training, service provision etc;
- (j) Mainstreaming of cross cutting issues such as Gender, HIV/AIDS and Environment is important and shall apply during implementation, monitoring and review of this policy;
- (k) Empowering special groups in society such as children, youths, women and the physically challenged shall be considered by providing special incentives to enable them have appropriate access to ICT tools, opportunities and services;
- (l) The implementation of this policy shall take into account relevant regional and global policies and best practices in transforming the nation into an information society targeting the UN Millennium Development Goals (MDGs), WSIS, WTO, NEPAD, E-Schools and Infrastructure programmes, as well as COMESA and SADC initiatives.

Part two: Defining policy Focus Areas

CHAPTER 6 GOALS, OBJECTIVES AND STRATEGY

6.1 PROMOTING HUMAN RESOURCES DEVELOPMENT

Human and intellectual capital is the most important resource of any given country in the quest for sustainable social and economic development. It is recognized that the development of critical human resource is key to facilitating and accelerating the development of an information society. It is also acknowledged that the extent to which Zambia will benefit from the advances and the opportunities of the emerging information society will largely depend on the country's capacity to develop and harness the available human resource to support national development. Zambia, like most developing countries needs to develop and deploy the required human resources in key areas in order to transform the economy into a predominantly information and knowledge-based society.

6.1.1 POLICY GOAL

To attain sufficient and world-class human resource capacity in critical and relevant ICT skills required for developing and driving Zambia's information and knowledge-based society and economy.

6.1.2 COMMITMENTS

In order to achieve the above goal, Government shall:-

- (a) Facilitate the creation of Centres of Excellence for training/education in Electronic Engineering (Telecommunications), Computer Science/Information Technology, Media/Information Science etc;
- (b) Facilitate the implementation of a comprehensive human resource development programme targeting critical skill areas across key sectors of the economy in order to accelerate the development of Zambia's information society and economy;
- (c) Mainstream youth and gender issues in human resource development activities.

6.1.3 OBJECTIVES

- a) To increase the institutional capacity in terms of infrastructure and human resource in public and private colleges/ universities that offer ICT courses;
- b) To increase annual enrolment and output of students in key professional skills areas such as telecommunications/electronics engineering, computer science, media/information sciences etc;

- c) To address the human resource requirements in key sectors of the economy targeting critical managerial, technical and operator skills.

6.1.5 STRATEGIES

- a) Develop and implement short, medium and long-term ICT human resource development Plans;
- b) Create favourable conditions for public and private sector organisations, institutions and establishments to invest in education and human resource development programmes as well as in the training and up-dating of personnel skills;
- c) Encourage computer literacy as a basic requirement for employment and promotion in all sectors;
- d) Develop ICT awareness programmes among all citizens and promote ICT as an alternative career path for youths and women;
- e) Develop and promote community based ICT training programmes in conjunction with local authorities, private sector and civil society;
- f) Develop ICT re-training and skills update initiatives to cater for all sectors in response to rapid technological changes
- g) Facilitate and promote institutional linkages between educational/training establishments and industry;
- h) Provide adequate access to education and training resources for the physically challenged and vulnerable groups;
- i) Encourage and promote local and foreign direct investment in knowledge and expertise development to support the development of the nation's human resources requirements;
- j) Encourage and promote the participation of professional bodies in developing appropriate curriculum and ICT skills needed in industry.

6.2 PROMOTING ICT IN EDUCATION, RESEARCH & DEVELOPMENT

It is recognized that for developing countries like Zambia to make major progress in social and economic development, there is need to invest significant effort and resources in the education system. Zambia's education system is currently under-resourced; with a substantial section of the population without access to high school and tertiary level education as well as professional training. Therefore, a significant percentage of the population is without educational attainment required for meaningful contribution to national development.

6.2.1 POLICY GOAL

To integrate ICTs in the education system and develop the nation's Research and Development (R&D) capacity to support, facilitate and contribute to the development of key sectors of the economy including the development of appropriate local ICT products and services.

6.2.2 COMMITMENTS

In order to achieve the above goal, Government shall:

- (a) Facilitate the creation of Centres of Excellence for research in Electronics Engineering/Telecommunications, Computer Science/Information Technology, Media/Information Science etc;
- (b) Take appropriate policy measures to facilitate and promote the integration of ICTs within the entire Zambian educational system to support administration, teaching, learning and research;
- (c) Adopt and adapt NEPAD E-Schools and other initiatives to promote E-learning and E-Education as well as life-long learning within the population at large;
- (d) Strengthen science and technical education as the basis for laying the foundation for human resource and skills development in ICT; and
- (e) Adequately invest in R&D as a way of developing the nation's scientific and industrial research capacity in ICTs.

6.2.3 OBJECTIVES

- a) To deploy ICTs at all levels of the Zambian educational system in order to improve and expand access to education, training and research facilities;
- b) To modernise the educational delivery system with the aim of improving the quality of education and training at all levels;
- c) To strengthen the administration and decision-making capacity in the educational system through the deployment of Education Management Information Systems; &
- d) To promote collaboration of R&D systems within the local industrial set-up to facilitate product development, innovation and delivery of world-class

services that can compete on the global market.

6.2.4 STRATEGIES

- a) Promote and facilitate the integration of computer skills into the teaching and learning process at basic (primary), high school and tertiary levels;
- b) Introduce programmes on teacher education in ICTs at all training institutions in the country;
- c) Develop partnerships with private sector and other stakeholders in the quest for increased ICT literacy;
- d) Accelerate the extension of tertiary education programmes at the nation's colleges and universities to teacher training colleges through E-learning systems;
- e) Develop a national ICT curriculum and qualification system at basic, high school and tertiary levels;
- f) Promote the development, deployment and utilization of electronic-based distance education, training and learning systems in the Zambian educational system to complement and supplement residential education and training;
- g) Promote and facilitate the development and the adoption of Educational Management Information Systems within the public and private educational institutions to improve the quality of managing educational delivery activities, operations and monitoring;
- h) Protect and facilitate the participation of the private sector and other establishments including industries and businesses in industrial research as well as Cutting-edge R&D activities;
- i) Encourage and facilitate collaborative research; R&D projects and knowledge transfer partnerships between Zambian universities/ research institutions with counterpart institutions in other countries;
- j) Implement special schemes and policy measures and packages aimed at promoting affordable acquisition of computers and other ICT products by students, trainers and educational institutions;
- k) Promote and facilitate the adoption of educational technologies and Internet access within the public and private educational institutions targeting all levels of the educational system;
- l) Allocate a significant percentage of the national budget to integration and

deployment of ICTs in the education system.

6.3 PROMOTING PUBLIC ACCESS, CONTENT DEVELOPMENT AND CULTURAL HERITAGE

Access to information forms the basis for creating an information society. Therefore, the availability of public access points, ICT tools, content and services are as important as the information itself in the deployment and exploitation of ICTs to support rural development, community based initiatives and projects in Zambia's developmental effort.

The Government appreciates the development of the media and the promotion of local content development as well as enhancing, and safeguarding Zambia's cultural heritage through the use of ICTs. Therefore, efforts shall be directed at promoting the use of ICTs in rural, urban and underserved communities and ensuring that the net effect of the developmental gains resulting from ICTs does have a widespread impact at all levels in both rural and urban areas.

6.3.1 POLICY GOAL

To promote widespread public access to information through appropriate traditional and new technology solutions based on relevant local content while promoting cultural heritage.

6.3.2 COMMITMENTS

in order to reach out and benefit the majority of the Zambian population and improve the penetration of ICTs within society, the Government shall:

- (a) Develop universal access/service goals and strategies for rural telecommunications, radio and TV transmission infrastructure and service rollout;
- (b) Implement special incentives to facilitate the development and intensive use of traditional media such as the local newsprint, community radio and TV as part of the strategies to promote new technologies as well as information access/dissemination across the country;
- (c) Transform all Postal Offices, Public and Community libraries as public access points for E-Commerce, E-Government and Internet based services with the support of the private sector and civil society;
- (d) Require all telephone (fixed and wireless) service providers to charge any call destined to an Internet Service Provider (ISP) data device that acts as a Gateway to the Internet at a reduced flat rate or local call charge irrespective of the location and ISP used, whichever is the lowest, as a

- (e) deliberate measure to spread and increase public access to the Internet; Implement a deliberate and countrywide programme to attract community, civil society and private sector participation to install basic communication Services around community centres such as schools, clinics and traditional leaders palaces;
- (f) Make it mandatory for telephone (fixed and/or wireless) service providers to provide toll-free service to *not-for-profit* agencies supporting community initiatives in areas such as education, HIV/AIDS and counselling services across the country;
- (g) Create a regulatory and licensing framework that provides special incentives especially for youths and women in the establishment of ICT services in rural and underserved areas across the country

6.3.3 OBJECTIVES

- a) To promote cost-effective *last-mile* technologies for providing access to commercial and public information services by communities (including the disadvantaged and physically challenged) especially in rural and underserved areas;
- b) To create easily accessible, affordable and innovative ICT public access points;
- c) To support local and indigenous content development as well as applications targeting the capturing and dissemination of local and indigenous knowledge, content and information resources as well as the promotion of Zambian languages and cultural heritage;
- d) To facilitate the participation of youths and women in ICTs particularly in media and content development initiatives;
- e) To address gender-based inequalities and instituting gender-sensitive measures to encourage the active participation of women in national and community-based ICT initiatives; and
- f) To use proprietary, free and open source software in content development taking into account the appropriateness of the software category.

6.3.4 STRATEGIES

- a) Reduce tax and tariffs on end-user consumer ICT products (consumer electronics such as computers, radios, TV, phone handsets etc) and services;

- b) Provide special licensing obligations and incentives to providers of toll-free and other subsidised services;
- c) Use the Post Offices and public libraries as primary points for interaction In E- Government and E-Commerce applications across the country;
- d) Promote community-based ICT initiatives including telemedicine, multi purpose community mobile/stationery telecenters, tele-education and schoolnet Initiatives to accelerate the spread of ICTs within the communities using the PPP model;
- e) Develop special initiatives and incentives targeted at the growth of SME entrepreneurs especially youths and women to support the provision of value-added ICT services in all districts;
- f) Facilitate the planning, designing and development of a scalable and high quality digital transmission network in all districts to support fixed and mobile communications, internet and data services as well as radio and TV reception;
- g) Support the decentralization process by establishing multi-purpose community information centres in conjunction with the respective local authorities in each district;
- h) Intensify public awareness initiatives on the benefits of ICTs.

6.4 DEVELOPING THE ICT SECTOR

The Zambian ICT sector is small and under-developed, with the majority of the companies and businesses operating in the sector being small-to-medium scale enterprises, most of which lack the necessary capacity and resources to expand and compete effectively in the domestic, regional and international market. The Zambian ICT industry is hardly involved in the production and development of local ICT products resulting in service providers being involved mainly in retailing (supplying imported computer hardware and software as complete systems) of computer products as well as providing basic IT services.

On the other hand the privatisation of ZCCM and restructuring of Zambia Railways has resulted in high inactivity in software development centres operated under the above institutions before the privatisation process. This has affected the managerial and professional development capacity in IT services and software engineering in the country.

6.4.1 POLICY GOAL

To develop a competitive local ICT industry supported by a clear policy roadmap; fair and transparent regulatory framework and pro-investor market conditions resulting in the effective participation of the private sector in value-adding, export-oriented services; serving as the main engine for accelerating the development of the local economy.

6.4.2 COMMITMENTS

In order to achieve the above goal Government shall:

- (a) Create an open and transparent forum/environment for consultation/dialogue on matters of interest for policy makers, regulators, operators, consumers and other stakeholders in the ICT sector;
- (b) Create an *ICT Enterprise Development Fund* to support Zambians in Joint Venture Partnerships; Capital Market participation; and provide seed capital for Incubator projects targeting SMEs in the ICT sector;
- (c) Implement special initiatives and measures aimed at promoting local and Foreign Direct Investment (FDI) drive in ICTs including technology transfer programmes between local and foreign companies;
- (d) Provide special incentives to the local ICT industry to manufacture, assemble, maintain and repair ICT equipment; and the development of a globally competitive software industry based on proprietary, free and open source solutions to serve the domestic and export market;
- (e) Develop Human Resources Development strategies and combat HIV/AIDS in the workplace as part of the industry development process.

6.4.3 OBJECTIVES

- a) To create an innovative, market responsive, highly competitive, coordinated and well regulated ICT industry;
- b) To facilitate joint venture initiatives for local entrepreneurs with international private investors in the provision of public ICT goods and services;
- c) To develop ICT business incubators (start-up projects) and technology parks to accelerate the development of local consumer ICT products and services;
- d) To create a favourable business environment and promote Zambia as an

attractive destination for ICT-related investments within the region and on the international market targeting manufacturing and local product assembly, R&D and human resource development components;

- e) To restructure the ICT market and technological/production base with a view to making the ICT sector a significant contributor to the social and economic development of the country.

6.4.4 STRATEGIES

- a) Encourage the development of ICT Expos/conferences/roadshows; development of professional bodies and ICT industry focal point representation to ensure technology updates, awareness creation, advocacy, adherence to standards and coordination among players;
- b) Develop and implement special tax instruments and incentives to promote the development of the local ICT production and services industry;
- c) Promote, stimulate and support the development of innovative local content and applications to meet the requirements of the nation;
- d) Create Centres of Excellence for the research, manufacturing, and assembly of ICT products as well as training of ICT professionals;
- e) Develop ICT incubator projects and technology parks in the country especially in the Export Processing Zones;
- f) Promote the development, adoption and enforcement of international standards and best practices within the ICT industry to facilitate the development of world-class and globally competitive local ICT products and services;
- g) Develop an aggressive marketing strategy to promote Zambia as a competitive destination for ICT-related foreign direct investment;
- h) Promote and actively support the use of ICTs in the service delivery value chain in all sectors of the economy.

6.5 DEVELOPING TELECOMMUNICATIONS & SUPPORTING INFRASTRUCTURE

Broadly speaking ICT infrastructure encompasses telecommunications networks; radio and TV transmission systems; the Internet and other multimedia delivery platforms. It is generally acknowledged that transmission networks for radio, telephone, TV, Internet are the basis for mass-media development. This is further enhanced by associated physical infrastructure such as roads, electricity and general utilities. With

respect to ICTs, lack of a reliable, widely distributed and high capacity network for data, voice (sound) and video (pictures) has greatly contributed to the low availability and penetration of ICT services as well as costly deployment of basic services especially in rural areas.

This has resulted in inadequate telephone and Internet services; high start up costs for radio (especially community radio stations) and TV broadcasting. The net effect is low information access levels that are affecting citizen's participation in governance issues as well as the high cost of doing business across the country.

6.5.1 POLICY GOAL

To increase access and promote widespread deployment of ICT services through the expansion of the nation's telecommunications backbone infrastructure covering the whole country.

6.5.2 COMMITMENTS

In order to achieve the above goal, Government shall:

- (a) Endeavour to attain full liberalisation of all services in the ICT sector subject to regional and international protocols/agreements, best practices as well as market readiness;
- (b) Put equitable and cost-effective mechanisms to manage the country's strategic communication resources such as the frequency spectrum and Country Top Level Domain (CTLD (.ZM)) in order to allow for the development of modern, effective and efficient communication systems in the country;
- (c) Facilitate the development and deployment of a telecommunication infrastructure backbone with regional and international connectivity through Public-Private Partnerships to offer reliable, high capacity and nationwide service to data, voice and video service providers in the retail market;
- (d) Require all licensed service providers (telecommunications (voice, data, video), Internet Service Providers etc) operating a national/regional license to submit development/expansion/roll-out plans as part of the licensing framework;
- (e) Require the regulator to put in place market based guidelines for infrastructure sharing, network interconnection, tariff setting among other things as part of the licensing framework;
- (f) Develop clear policy guidelines for developing, sharing and

utilization of telecommunication infrastructure within the public sector as part of the E- Government strategy;

- (g) Facilitate the creation of the necessary legal, regulatory and institutional framework and incentives to support the development of the ICT infrastructure in the country;
- (h) Facilitate the establishment of a Rural ICT Development Fund to support the development of ICT infrastructure and service rollout especially in rural and underserved areas;
- (i) Require all public sector organizations to liaise, coordinate and harmonise with the agency responsible for the ICT portfolio before embarking on telecommunications/transmission infrastructure projects to avoid duplication;
- (j) Require network operators to optimise connectivity to the national ICT backbone and Internet Exchange Point to reduce interconnection costs and broaden network access;
- (k) Adopt and adapt NEPAD Infrastructure projects as the basis for implementing regional and international telecommunications connectivity;
- (l) Deliberately incorporate telecommunications infrastructure such as laying of fibre optic cables or such other technologies as part of in-built design costs of any public infrastructure investment especially when rehabilitating or building new trunk roads, electricity grids and railways.

6.5.3 OBJECTIVES

- (a) To implement a nationwide ICT infrastructure expansion programme and outline clear strategies and obligations for licensed ICT service providers with respect to universal access/service goals and Quality of Service (QoS); and ensure cost- effective connectivity to ICT services such as Radio, TV, telephone, Internet, E- Commerce and E-Government services;
- (b) To partner with the private sector in the rollout of the national telecommunications infrastructure backbone as a way to expand ICT services across the country;
- (c) To ensure an integrated approach to the development and deployment of ICTs including other supporting physical infrastructure such as electricity and transport infrastructure;
- (d) To minimise duplication and costs through infrastructure sharing among public

and private sector investment projects and to create an efficient and cost-effective Government-wide communications network infrastructure linking national, provincial and district administration;

- (e) To ensure that the nation's social and economic development process is not inhibited by the country's ICT infrastructure;
- (f) To facilitate regional economic integration by utilising regional and international telecommunications infrastructure projects such as the NEPAD Infrastructure, the COMESA COMTEL project and SADC ICT infrastructure initiatives.

6.5.4 STRATEGIES

- a) Develop special investment incentives to facilitate the expansion of the national ICT infrastructure backbone with emphasis on attracting local and foreign private sector participation;
- b) Develop alternative and affordable energy sources for ICT equipment including: solar, biomass, wind and other renewable energy sources to supplement the nation's conventional energy sources ;
- c) Promote the development of the necessary legal, institutional and regulatory framework and structures required for supporting the development of the nation's physical and communications infrastructure;
- d) Establish of a Government wide network with national, provincial and district coverage;
- e) Promote public and private sector demand for advanced and reliable broadband information and communication services to drive the development of the nation's ICT backbone infrastructure;
- f) Restructure the ICT market by separating the provision of wholesale, retail and value-added services.

6.6 PROMOTING ELECTRONIC GOVERNMENT

The Government machinery is normally viewed through institutions making up the public sector; and plays an important role in the nation's development process.

Broadly speaking E-Government involves the deployment and exploitation of ICTs to facilitate the process of bringing Government closer to the people through major improvements in the delivery of goods and services as well as information provision in ways that are most convenient to citizens and other stakeholders. The purpose of

transforming Government through ICTs is to realise efficiency gains, reduce operational and administrative costs as well as streamline government processes and procedures. The Government is aware that the potential benefits that shall be derived from the implementation of E-Government are enormous.

However, Government is also aware that mere deployment of ICTs in the public sector will not necessarily translate into improvements in service delivery unless appropriate institutional reforms to address the challenges that could hinder or undermine the process of effective implementation of ICTs are addressed.

6.6.1 POLICY GOAL

To improve public sector management as well as efficient and effective delivery of public goods and services through the implementation of E-Government systems.

6.6.2 COMMITMENTS

In order to achieve the above goal, Government shall: -

- (a) Develop an E-Government model to facilitate effective and efficient delivery of goods and services in the public sector;
- (b) Support the implementation of the decentralisation process by extensive integration and utilisation of ICTs at all levels;
- (c) Develop a Government-wide network and communication system utilising the same infrastructure backbone as the foundation for implementation of the E-Government strategy; and
- (d) Review and establish reforms aimed at legalising electronic procedures /processes and other forms of E-Services .

6.6.3 OBJECTIVES

- a) To transform Government service delivery and improve two-way communication in the management and operation of the public sector;
- b) To improve the operations of Government Ministries/Agencies within the wider scope of the public sector reform programme through the deployment of ICTs;
- c) To develop an institutional and coordination mechanism for information management in the public sector; and
- d) To safeguard public sector information and investment against negative

impacts of deploying and using ICTs.

6.6.4 STRATEGIES

- a) Develop and implement a comprehensive E-Government strategy targeting:
Government to Government (G2G), Government to Business (G2B) and Government to Citizens (G2C) and Government to Employee (G2E) services;
- b) Identify, develop and implement E-Services in the provision of government information, health, educational and other services through the use of ICTs;
- c) Undertake a comprehensive change management and human resource development Programme to support the adoption of ICTs as part of the service delivery model;
- d) Develop and promote standards, guidelines and procedures to facilitate the acquisition, installation and maintenance of ICT systems within public sector institutions;
- e) Develop Provincial and District Information Resource Centres and implement an integrated Geographic Information System to support development planning and decision-making at national, provincial and district levels;
- f) Partner with civil society and private sector to participate in civic initiatives and other information/service delivery solutions including development of public access centres for online services such as license acquisition, registrations of births, deaths, marriages as well as voter registration at national, provincial and district levels as part of E- Government implementation;
- g) Establish and develop an Integrated Land Information System at district and provincial levels to enhance land management, security of tenure, land utilisation; monitoring and evaluation;
- h) Implement mechanisms and processes that will facilitate sharing and exchange of information, good practices and organisational experiences within the public sector;
- i) Implement schemes and initiatives targeted at motivating public service employees to acquire ICT literacy/skills as part of improving productivity, efficiency and effectiveness;
- j) Establish legislative and other instruments aimed at enhancing access to information, as well as secure the privacy and security of information in public domain;
- k) Adopt an open policy for use of proprietary, free and/or open source software in developing E-Government solutions systems.

6.7 PROMOTING ELECTRONIC COMMERCE

E-commerce broadly involves the use of electronic and traditional delivery systems such as the postal network to facilitate the process of trading in goods and services using electronic payment systems and technologies such as the Internet.

Global communication networks such as the Internet, are rapidly removing the traditional barriers of *time* and *distance* key components influencing commerce and trade. Such technologies provide users, organisations and businesses in both the developed and developing countries with numerous opportunities including: setting up 'virtual' shops to market and advertise business activities to the rest of the world at a very minimal cost.

In Zambia, the scope for E-Commerce is growing largely due to increased use of electronic networks and payment systems. The role of the banking sub-sector and communication systems coupled with legal and regulatory framework is critical to the success of E-Commerce.

6.7.1 POLICY GOAL

To promote Zambia's full and effective participation in national, regional and global trade through E-Commerce services and facilities.

6.7.2 COMMITMENTS

In order to achieve the above goal, Government shall:-

- (a) Establish monetary and fiscal policy measures to ensure consumer confidence in E-Commerce;
- (b) Develop effective laws and regulations that shall govern E-Commerce at national level supported by regional and international systems;
- (c) Establish mechanisms to protect intellectual property rights related to E-Commerce.

6.7.3 OBJECTIVES

- a) To promote a stable, fair and competitive investment climate to facilitate the development of E-Commerce activities in the economy;
- b) To develop a highly competitive ICT industry capable of serving as the engine for driving Zambia's active participation in global trade;
- c) To facilitate the adoption of E-Commerce especially by SMEs in agriculture, tourism, small scale mining and manufacturing as well as non-traditional exports to ensure productivity and growth;
- d) To develop the services industry whose activities meet international standards in the production and delivery of globally competitive E-Commerce products and Services.

6.7.4 STRATEGIES

- a) Promote Zambia as a competitive Foreign Direct Investment (FDI) destination for E-Commerce as well as attract local private sector participation and investment in the development of E-Commerce solutions;
- b) Cultivate a culture of E-Commerce in the country, which supports electronic business transactions at national, regional and international levels;
- c) Develop action plans aimed at facilitating the involvement of Small and Medium Enterprises (SMEs) and disadvantaged groups to enhance their effective participation in E-Commerce activities;
- d) Domesticate, harmonise and enhance electronic commerce laws obtaining at SADC, COMESA, WTO and other international levels;
- e) Facilitate the establishment of E-Commerce services especially in Export Processing Zones to promote and support ICT-related businesses as well as attract business process outsourcing services to Zambia;
- f) Restructure and modernise the banking and payment system to respond to electronic banking and financial services in order to increase the development of E-Commerce and trade;
- g) Promote and facilitate the use of secure E-Business solutions, electronic signatures, electronic public procurement and electronic payment systems to support the development of E-Commerce in the country;
- h) Increase awareness on the benefits of E-Commerce among the general Public; and
- i) Undertake capacity building in local authorities in order to provide services that promote E-Commerce activities.

6.8 PROMOTING THE INTEGRATION OF ICT IN AGRICULTURE DEVELOPMENT

Agriculture is the economic backbone for many Zambians especially in rural areas; as such it plays an important role in the social and economic development of the country. This sector accounts for a high proportion of the GDP and acts as the main source of employment and income in peri-urban and rural areas where the majority of Zambians reside.

However, the sector has received top Government priority in the two main social and economic recovery initiatives namely; the Poverty Reduction Strategy Programme and the Transitional National Development Plan. Therefore, ICT shall be integrated in the agricultural sector reform process in order to contribute to the social and economic revival of the country.

6.8.1 POLICY GOAL

To improve productivity as well as competitiveness of the agricultural sector through the use of ICTs in the planning, implementation, monitoring and the information delivery process.

6.8.2 COMMITMENTS

In order to achieve the above goal, Government shall:

- (a) Facilitate private sector investment in the development and provision of ICT services including infrastructure in all Farming Blocks and Farm Resettlement Schemes as part of the integrated physical infrastructure (electricity, schools, clinics, water and roads) development projects targeted for those areas;
- (b) Institute necessary policy measures to deploy, exploit and integrate ICTs and other technologies into the operations and activities of the sector from production, through to processing, packaging, marketing and distribution;

6.8.3 OBJECTIVES

- a) To facilitate the development of a diversified and competitive agricultural sector that produces to meet the nation's food requirements while contributing to export earnings;
- b) To promote and support rural development in order to achieve long-term growth in the agricultural sector and the economy as a whole;
- c) To increase the competitiveness of farmers in production, processing and marketing of agricultural products and services through the utilisation of ICTs;
- d) To monitor the conservation and sustainable utilisation of natural resources in the agricultural production process;
- e) To promote the development of ICT entrepreneurs at SME level as part of the rural agro- business industry development and strengthen the development, application of ICTs in agriculture.

6.8.4 STRATEGIES

- a) Create an integrated agricultural information system on agro-technologies and techniques, pricing and market information for all agro products in order to provide strategic information for farmers, government authorities, and other stakeholders at national, provincial and district levels;
- b) Undertake intensive ICT awareness campaigns for all types of farmers in the use of traditional and new ICT tools at all levels;
- c) Intensify the use of Radio and TV programmes and integrate new technologies as a means to reach extension workers and farmers alike;
- d) Develop weather and agro-meteorology early warning systems to support agricultural production and predict as well as prevent disasters;
- e) Develop incentives for deployment of affordable ICT solutions to support rural connectivity of farmers especially those within the catchments of existing ICT infrastructure;
- f) Develop and promote ICT skills development among agricultural extension workers and farmers;
- g) Develop database systems and applications including Geographical Information Systems (GIS) to support agricultural input resource management as well as to support land and water resource management, environmental monitoring and impact assessment; crop yield assessment and livestock management among others;
- h) Increase HIV/AIDS awareness using ICT tools as one of the strategies to maintain the required manpower in the agricultural sector;
- i) Develop a monitoring and evaluation system for the conservation and sustainable utilisation of natural resources in the agricultural production process;
- j) Promote two-way information dissemination to support the physical and socio-economic planning processes in the agricultural system.

6.9 PROMOTING THE INTEGRATION OF ICT IN HEALTHCARE DELIVERY

The performance of the health delivery system has over the years been affected by communication problems mainly due to distances between health delivery points and administrative centres. This has affected delivery of drugs, messages and data collection/dissemination. Another dimension is the recent exodus of experienced and

qualified manpower in the sector: most specialist doctors and nurses are confined to the line of rail leaving rural areas to cope with inadequate staff levels.

Globally, ICT is playing a vital and effective role in the organisation and delivery of health services. Therefore, the deployment of ICTs is acknowledged to have the potential to facilitate the spread of health and medical services to rural and under-served areas; supporting public health education and information services, education and training of medical personnel among others; as well as for supporting decision making related to health service administration and management.

6.9.1 POLICY GOAL

To improve access to quality healthcare as close to the family as possible through the deployment and exploitation of ICTs and other modern technologies.

6.9.2 COMMITMENTS

In order to achieve the above goal, Government shall:

- (a) Invest in ICT-based healthcare systems to increase the opportunity for Zambians to have access to adequate and appropriate modern health services irrespective of time, distance and location;
- (b) Facilitate the development and implementation of a national telemedicine programme to efficiently and effectively utilise scarce human resources and to further improve human capacity in the healthcare delivery system;
- (c) Partner with private sector and civil society in the deployment and utilisation of ICTs in the health sector;
- (d) Develop a legal/regulatory and ethical framework for effective use of the Health Information and implement security measures to safeguard the privacy of patient information inherent in health care records;
- (f) Mainstream ICTs in the management and treatment of HIV/AIDS and other pandemics.

6.9.3 OBJECTIVES

- (a) To improve the health status of the population and reduce inequalities in the provision of health care services among the Zambian population;
- (b) To support, through the deployment and exploitation of ICTs, initiatives aimed at combating the spread of HIV/AIDS, malaria and other infectious diseases;

- (c) To provide information to people living with life-threatening diseases, Particularly HIV/AIDS;
- (d) To support research directed at addressing medical, social and economic aspects of the HIV/AIDS pandemic and other diseases;
- (e) To facilitate the development, deployment and implementation of health information, management and decision support systems and facilities aimed at improving the planning, management and administration functions as part of effective and efficient health service delivery.

6.9.4 STRATEGIES

- a) Develop an appropriate National Health Management Information System;
- b) Facilitate connectivity and access to communication services in health institutions to support healthcare delivery;
- c) Develop appropriate ICT infrastructure at all levels of the healthcare system to support the collection, use, management and dissemination of health care information;
- d) Promote and encourage ICT training and skills development among healthcare professionals;
- e) Deploy ICTs to support education and awareness initiatives aimed at combating major national health threats such as HIV/AIDS, malaria, and other infectious diseases.

6.10 PROMOTING THE INTEGRATION OF ICT IN TOURISM, ENVIRONMENT & NATURAL RESOURCES MANAGEMENT

Travel and tourism as a sector constitutes one of the economic pillars of global trade; this includes both wildlife and non-wildlife based tourism. Over the recent past, Zambia has positioned herself well in the global tourism market. By its very nature, the tourism sector is well suited for the integration and application of ICTs, which potentially can enhance marketing of tourism products and services; increase the efficiency and effectiveness of transactions and service delivery as well as providing Zambian enterprises with access to international tourism markets. However, large-scale ICT projects may impact negatively on the environment, natural resources and heritage. Therefore, protection and conservation measures need to be taken into account alongside the developments in ICT.

6.10.1 POLICY GOAL

To integrate ICTs in the development of the tourism industry and facilitate the conservation of Zambia's natural resources & heritage as well as to protect the environment.

6.10.2 COMMITMENTS

In order to achieve the above goal, Government shall:

- (a) Implement specific policy measures to ensure that all development of ICT infrastructure in the country as well as the manufacture and disposal of ICT products shall be done in conformity with existing and future policies and guidelines on heritage/natural resources conservation and environmental protection;
- (b) Partner with the private sector as agents for extending and expansion of the ICT infrastructure and services in all tourist centres and destinations designated as priority in the development of the national tourism potential;
- (c) Implement ICT applications and systems that will enhance the audit, management and monitoring of the efficient and effective utilisation of Zambia's natural resources and heritage;
- (d) Mainstream gender issues using ICTs in the management, development and use of natural resources.

6.10.3 OBJECTIVES

- a) To improve communication systems across the country especially in tourist centres to support tourism development;
- b) To use ICTs in the documentation, promotion and effective marketing of the full Potential of Zambia's world class and niche tourist destinations to the local, regional and international market;
- c) To ensure that all ICT related activities have very minimal negative environmental impact during construction, operation and disposal/de-commissioning;
- d) To conserve natural resources and safeguard our heritage using ICT tools.

6.10.4 STRATEGIES

- a) Develop information platforms (portals) for niche tourism products and destinations and create databases for collection of tourism information

to support planning, monitoring and evaluation;

- b) Establish the *National Spatial Data Infrastructure* as mechanism for cross-sectoral collaboration in sharing and exchange of natural resources information;
- c) Develop institutional mechanisms to establish an Integrated Geographic Information System to support heritage conservation, natural resources Management and early warning systems to predict natural disasters /phenomena that may affect natural resources management, environment protection and tourism performance;
- d) Develop an integrated travel and tourism information systems to support operators in the travel and tourism industry;
- e) Promote and integrate ICT skills in the provision of world class training programmes by hospitality training services providers; and
- f) Develop partnerships with the private sector to support the development of E-Commerce solutions in the tourism industry.

6.11 MAINSTREAMING YOUTH AND WOMEN ISSUES

The successful penetration of ICTs within the existing social and economic structures depends on its people. However, youths and women are heavily marginalised in most activities but constitute a very important segment of society. Therefore, there is need to address youths and women as special groups in society that can positively contribute to the growth of ICTs as well as the use of ICTs as empowerment tools in their daily activities.

6.11.1 POLICY GOAL

To use ICTs as an instrument to mainstream youth and women issues in all activities of the economy and society as well as empower youths and women through opportunities created by the implementation of ICT projects and programmes in the country.

6.11.2 COMMITMENTS

In order to achieve the above goal, Government shall:-

- (a) Implement actions that promote women and youth friendly initiatives; and promote fair access to ICTs by youths and women as well as the disadvantaged in society;
- (b) Make it mandatory for telephone (fixed or wireless) service providers to provide toll-free service to support special *not-for-profit* organisations targeting

their services at youths, women, vulnerable and the physically challenged groups;

- (c) Implement measures to counter gender imbalances affecting women's participation and benefiting from the information society at all levels;
- (d) Use ICTs to domesticate and harmonise youth and gender issues enshrined in regional and international protocols ratified by Zambia.

6.11.3 OBJECTIVES

- a) To increase empowerment opportunities through ICTs; and the participation of youths and women in national development;
- b) To promote ICT as an alternative career for youth and women in the informal and formal educational system;
- c) To encourage creativity and innovation around ICTs among youths and women leading to entrepreneurship development;
- d) To provide a forum for collaboration and exchange of ideas on matters affecting youths and women;
- e) To enable full and equal participation of women and youths in creating the Information society.

6.11.4 STRATEGIES

- a) Implement special ICT training programs for youths and women;
- b) Promote ICT awareness among youths and women and develop literacy programmes;
- c) Promote the use of ICTs as tools to eliminate all forms of inequalities between sexes;
- d) Encourage the participation and integration of youths and women in organs and processes of national policy formulation, planning and decision-making through information access mechanisms;
- e) Promote innovative and start-up (incubator) projects for youths and women as ICT entrepreneurs;
- f) Promote moral use of ICTs such as the Internet especially among youths;
- g) Facilitate and encourage the development of electronic networks

and systems for associations and organisations engaged in the advancement of youth and Women issues in the country;

- h) Implement ICT programmes/projects focussing on combating HIV/AIDS Among youths and women;
- i) Acknowledge, protect and defend women's rights in the information society; and
- j) Provide infrastructure and affordable access to ICT tools and services in rural and urban areas.

6.12 DEVELOPING THE LEGAL & REGULATORY FRAMEWORK

An appropriate and dynamic legal/regulatory framework is mandatory to act as the foundation for the development of the ICT sector. The rapid technological advances in telecommunications, information technology and broadcasting as well as the convergence of technologies, services and delivery platforms have made it necessary for countries in both the developed and developing countries to create and operate in an open, dynamic and responsive legal and regulatory framework to support the development of ICTs. Therefore, this scenario has created great challenges to regulators especially in telecommunications and broadcasting sub-sectors worldwide; however, reforms are now in place to support convergence with a view to streamlining regulatory frameworks.

The current legal and regulatory framework is perceived to be inadequate in addressing the current market challenges. Therefore, periodic review of the operations, provisions and directives making up the legal and regulatory system is key to achieving positive ICT sector reforms in order to accommodate changes including convergence in the industry.

6.12.1 POLICY GOAL

To develop appropriate institutional, legal and regulatory system in order to support the development of a competitive local ICT sector based on convergence principles; supported by fair, predictable, and transparent legal and regulatory framework.

6.12.2 COMMITMENTS

In order to achieve the above goal, Government shall:

- (a) Implement a legal and regulatory system with special focus on: sustained inflow of local and foreign investment, investor and consumer confidence; and fair competition among market players;

- (b) Implement a flexible and dynamic technology-neutral legal/regulatory and licensing framework that restricts regulation to the barest minimum; takes into account and reflects issues relating to convergence within the sector; reinforces innovation, competition and fair play in the industry as well as ensure that the basic rights, choices and preference of consumers are protected; and that the principle of equitable universal access and service are reinforced;
- (c) Put in place mechanisms for open and transparent dialogue/interaction among policy makers, the regulator and operators; as well as other stakeholders such as investors and consumers;
- (d) Put in place relevant and effective laws and regulations aimed at: promoting private sector confidence and participation; adherence to national, regional and international standards and best practices; promoting professionalism in the industry; protecting intellectual property rights in conformity with national, regional and international practices; creating specific laws to support E-Services and inhibit misuse of ICTs; enhance the performance of the justice system to mitigate crimes and offences arising from the misuse of ICTs;
- (e) Create an ICT tribunal designed to address only appeal cases arising from rulings or directives of the *Regulator* as the first line of dispute resolution among parties in the sector;
- (f) Promote the development of a licensing framework that takes into account the use of cost-effective technologies and systems that can assist in increasing access to ICTs especially in rural areas.

6.12.3 OBJECTIVES

- a) To facilitate the development of an effective, industry-responsive, timely legal and regulatory system capable of supporting the development and growth of the ICT sector;
- b) To establish a legal and regulatory framework that is harmonised with national legal and regulatory goals taking into account regional and international best practices, standards/protocols and Zambia's global commitments;
- c) To facilitate Zambia's full participation in the information society and economy, through the enactment of necessary laws and legislative provisions in area such as data/information protection and security, access to information; computer and cyber crimes; and other laws to facilitate electronic information- related activities in the country

including E-Government/E-Commerce.

6.12.4 STRATEGIES

- a) Develop harmonised laws and regulations for the ICT sector that incorporate international best practice and Zambia's obligations/commitments at SADC, COMESA, NEPAD and WSIS level;
- b) Create a clear framework/forum for dialogue/interaction with market players, stakeholders and consumers;
- c) Promote technology-neutral legal and regulatory framework that also accommodate issues pertaining to the convergence of technologies and services within the context of local and global communications industry;
- d) Put in place legal and regulatory provisions that ensure that consumer choice and affordability of services is paramount while ensuring that consumer interests and protection are adequately addressed;
- e) Promote and facilitate the creation of a sound investor friendly legal and regulatory environment to encourage local and foreign direct investment in the sector;
- f) Facilitate and promote universal service and access to information and communication services in under-served areas and communities by making access to Services affordable to a larger section of the population ;
- g) Build institutional capacity for ICT policy makers, regulator, operators and consumers alike to effectively manage the ICT industry.

6.13 PROMOTING SECURITY IN THE INFORMATION SOCIETY

The emerging trend for increased information access/exchange resulting from integrating ICTs within the social, cultural and economic sphere of the country also brings to the fore a number of security, privacy and consumer protection issues that need to be addressed as part of the efforts of developing an information society.

Zambia like most countries in the world is vulnerable to some of the negative implications that may hinder the mainstreaming of ICTs in society. Therefore, specific security measures and mechanisms to ensure the safety of citizens, communities, businesses and the nation at large are needed as part of implementing this policy.

6.13.1 POLICY GOAL

To safeguard national, institutional and individual security concerns to support the development, deployment and effective use of ICTs within the Zambian economy and society at large.

6.13.2 COMMITMENTS

In order to achieve the above goal, Government shall;

- (a) Establish a Computer Crimes Investigation Unit for cyber law enforcement and the National Electronic communication Security Centre within the internal organs of specialised security agencies to safeguard information and communication infrastructure, networks and systems as part of the reform process to: ensure the availability, authenticity, integrity and confidentiality of Government, public and private communication networks and systems; data and information content integrity; consumer privacy and protection as well as address security issues aimed at damaging or corrupting Zambia's cultural heritage, national image and identity;
- (b) Compel all organisations providing public information services such as telecommunication services, Internet, email to deliberately incorporate administrative, technological and other such practical measures to enable national security agencies to curb misuse and unsolicited content and/or information products to their customers and the general public.
- (c) Enact and enforce legislation that allows for effective investigation and prosecution of cyber related crimes;
- (d) Ensure that due regard, recognition and protection of intellectual property rights and protection of individual/personal information and privacy rights are adhered to in the pursuit of implementing security measures; therefore, Security Agencies shall not in any way interfere with the privacy; the right to communicate and freedom of expression by citizens without lawful

warrant.

6.13.3 OBJECTIVES

- a) To secure the nation's electronic communication system (individual, private and public) as part of creating the information society;
- b) To enhance user confidence and trust among the public as well as to both protect data and network integrity;
- c) To prevent, detect and respond to cyber-crime and misuse of ICT so as to contribute to the fight against national, regional and international crimes such as pornography, fraud, money laundering, drug trafficking and terrorism;
- d) To ensure cross-sectoral linkages and co-ordination among security agencies in order to adequately address ICT related security concerns.

6.13.4 STRATEGIES

- a) Develop security policies, standards and procedures to guide the implementation of ICTs in the country;
- b) Implement ICT Security awareness programmes amongst corporate and users as well as the general public;
- c) Implement systems that will help in the detection, prevention and timely response to threats relating to ICT crimes and misuse;
- d) Deploy ICTs to facilitate, support and enhance the management, operation and administration of security matters as well as the command and control structure of National Security Agencies;
- e) Implement ICT skills development within the Security Agencies to support effective deployment and application of ICTs in operations and service delivery.

Part three: Institutional Framework, Implementation

Strategy, Monitoring & Evaluation:

CHAPTER 7 INSTITUTIONAL FRAMEWORK AND IMPLEMENTATION STRATEGIES

The social and economic challenges facing Zambia and the opportunities that ICTs offer pose complex policy choices for the nation. The country has to address the implementation of this policy and mainstreaming of ICTs amid strong competition for limited financial resources from other sectors.

Therefore, the successful achievement of the “ICT for Development (ICT4D)” policy goals and objectives depend on an integrated and wholesome approach during implementation underpinned by developing strategic synergies and partnerships between the public and private sector as well as civil society. This implies that clear definition of the roles, responsibilities and functions of all the stakeholders must be made. Developing this mutual understanding requires a deliberate and open process of broad-based consultations and participation among all major stakeholders to define the role of ICTs in various sectors.

Apart from the Government having the responsibility to create the right policy environment to accelerate the nation’s development through ICTs, the private sector and other key stakeholders like parliament, civil society, academia, media and legal/regulatory agencies as well as the cooperating partners also have key roles to play in order to facilitate the successful implementation of the provisions of this “ICT4D” policy.

7.1 STAKEHOLDER ROLES

Within Government the following policy making institutions are important in creating a favourable institutional framework that will improve policy formulation, coordination and implementation. Currently, the mandate for ICT portfolio lies in the Ministry of Communications and Transport; however, in so doing the following portfolios are key in defining the required institutional framework.

Finance and National Planning

The Ministry of Finance and National Planning represents Government as the *Shareholder* in most Government owned business ventures such as parastatals. The coordination of planning activities as well as resource mobilisation and allocation in the country also falls under the same portfolio. Therefore, any efforts aimed at integrating ICT in national development requires the active participation of the Ministry of Finance and National Planning.

Telecommunications

The Ministry of Communications and Transport (MCT) is currently overseeing the activities of ZAMTEL, CAZ (the existing regulator) and ZAMPOST; other institutions with significant telecommunications/communications component include TAZARA, Zambia Railways, National Airports Corporation.

Electronic Media

The Ministry of Information and Broadcasting Services (MIBS) oversees the operations of ZNBC, Zambia Daily Mail and Times of Zambia. However, the Independent Broadcasting Authority is soon to operate as a *regulator* in this sub-sector.

Therefore, convergence principles adopted in this policy need to harmonise with proposed regulatory functions in the broadcasting sub-sector as a matter of priority.

Science & Technology

The Ministry of Science, Technology and Vocational Training (MSTVT) is currently overseeing the activities of vocational training in science and technology as well as overseeing certain research institutions in the country. TEVETA - the standards and training regulator, which is a body corporate under MSTVT, oversees the operations of organisations involved in human resource development including some institutions offering ICT training in the country. However, this does not include courses/training offered by Universities.

Education

The above institutions are critical in forming the core group for coordinating policy on ICTs. Therefore, the successful implementation of this policy requires active participation of all stakeholders. Specifically, the roles of the following stakeholders are recognised:

7.2 GOVERNMENT

The single most important role for Government is to provide political and economic will, vision and leadership to facilitate and drive the 'ICT for Development' process in order to speed up the development of Zambia's information society. In this way, Government shall set a positive national tone and sense of urgency in a way no other stakeholder can.

In view of the above, Government is duty-bound to provide an enabling political, investment, institutional and legal/regulatory environment to guide the effective participation of other stakeholders. Therefore, the political leadership in the country takes centre stage in implementing a coherent national strategy for utilising ICTs as a matter of top priority.

In this regard, Government shall:

- a) Provide visionary and catalysing leadership at the highest level of Government to Support the implementation of the National ICT Policy; the Ministry responsible for the ICT portfolio shall provide guidance in policy formulation, review and target setting in the area of ICT;
- b) Become the model user of ICTs as part of an ambitious program to drive E-Services development; and in particular the development of E-Government in Zambia'.

- c) Develop and implement rolling sector-based ICT4D Implementation/Action Plans to mainstream the provisions of the policy in National Development Plans and other strategic frameworks;
- d) Mainstream ICT programmes and projects in all sectors and ensure that this reflects in the national budget as means of commitment to Government; resource mobilisation, especially for programmes targeted at E- Government;
- e) Establish the Department of Communications (DoC) in the Ministry responsible for the ICT Portfolio to oversee policy development and coordinate the implementation of the policy.

The main function of the Department of Communications is to coordinate and support the development of the ICT sector through advocacy and mainstreaming of ICTs in the national planning system and development agenda; focusing on sectoral application of ICTs and increasing individual, community, business and national level benefits and opportunities arising from the implementation of the National ICT Policy. Specifically, the DoC shall perform the following functions.

- i. Ensure the achievement of the country's ICT vision by advising Government on ICT matters relating to overall sector performance, policy reforms as well as regional and international trends that have impact on Zambia;
- ii. Coordinate ICT activities involving Public sector, Private Sector, Civil Society and Cooperating Partners at all levels;
- iii. Coordinate the development of National ICT Implementation Plans and assist in resource mobilisation for implementing the National ICT Policy;
- iv. Promote and coordinate research into, and the development and use of, new information and communication technologies;
- v. Coordinate and support national, provincial and district administrative and planning institutions to develop/deploy ICTs as part of the development agenda;
- vi. Promote the development and expansion of the ICT industry in Zambia in conjunction with relevant bodies responsible for investment promotion, regulation, education & research, human resource development etc.
- vii. Undertake advocacy activities including ICT awareness at all levels through expos, forums, conferences and other forms of stakeholder consultations/networking etc.
- viii. Support networking activities involving ICT stakeholders in Zambia;
- ix. Collaborate with Government agencies and other public sector institutions to support E-Government development;
- x. Conduct countrywide regular ICT surveys to monitor and evaluate the performance of the sector;
- xi. Coordinate the development of national projects such as fibre optic telecommunications backbone infrastructure;

- xii. Adequately and effectively represent Zambia at regional and international level on all matters relating to ICTs.
- g) Position the Communications Authority of Zambia to regulate the ICT sector with clear specifications of responsibilities and powers, taking into account the relevance and functions of other existing regulatory agencies (where applicable) in sub-sectors including telecommunications, Information Technology, Broadcasting and Postal services to ensure a smooth transition to full convergence. However, care shall be taken to ensure minimal industry disruption and policy conflicts;
- h) Restructure and transform the Centralised Computer Services Department into a Centre of Excellence for E-Government implementation with appropriate institutional powers and linkages within the public sector;
- i) Mobilise and encourage Cooperating Partners to mainstream ICTs in all country programmes and projects as part of the crusade to accelerate the development and creation of an information society;

7.3 PARLIAMENT

The liberalisation of the telecommunications, postal and broadcasting sectors worldwide has opened new requirements for transparent and effective legal and regulatory instruments to govern the sub-sectors. Therefore, the role of Parliament in the effective implementation of this policy shall include among others:

- a) Enacting appropriate and effective legislations that will create a flexible, dynamic and responsive legal and regulatory system in the sector to support the development of an information society;
- b) Creation of legal framework to support the establishment of policy, coordinating and implementation institutions and the amendment of relevant legislative provisions to facilitate the creation of a dynamic regulatory agency with the capacity to respond to technological advances as well as changes in the global communications industry ;
- c) Facilitate the allocation and approval of financial resources for implementation of the ICT Policy in the public sector;
- d) Monitor the effective utilisation of financial resources allocated to public sector institutions for the implementation of the ICT Policy;
- e) Ensuring that good governance principles are applied and adhered to in the implementation of the National ICT Policy by public sector institutions.

7.4 JUDICIARY

The proliferation and penetration of ICTs across the country comes with potential misuse resulting in negative impacts to the nation, businesses and individuals. Therefore, the Judiciary is expected among other things to:

- (a) Assist in the delivery of justice to support the performance and growth of the ICT sector;
- (b) Implement ICT projects that can accelerate the delivery of justice to the benefit of all Zambians;
- (c) Build human resource capacity within the Judiciary system to support the growth of legal framework on ICTs;
- (d) Support the growth of regulatory processes especially in dispute resolution within the ICT sector.

7.5 CO-OPERATING PARTNERS

Zambia's cooperating partners fall in the category of either *multilateral* or *bilateral*. Therefore, their participation in the promotion, integration and deployment of ICTs in country programmes is very essential. Access to information and knowledge resources through ICTs is now widely recognised as a vital component in accelerating social and economic development, especially for developing countries like Zambia. Today, the concept of *ICT for Development* is a priority agenda item in country programmes of many international organizations and development agencies. Therefore, Government shall work closely with cooperating partners involved in sustainable development programmes to undertake the following initiatives:

- a) Mobilise technical and financial resources to support the implementation of this policy;
- b) Integrate ICTs in development cooperation (country support programmes) in Zambia;
- c) Mobilise the support of other partners in fundamental areas of education, infrastructure and universal access, health, governance, scientific research, commerce, etc to participate in implementing this policy;
- d) Facilitate the setting up of links and relationships between national academic and research institutions and similar institutions abroad;
- e) Support the effective participation of Zambia in international fora concerned with ICTs; and
- f) Promote and encourage investment in ICT through Foreign Direct Investment, ICT Expos etc.

7.6 REGULATOR

A key provision of this Policy is to transform the existing regulatory agencies in the communications sector into a converged regulatory agency whose roles and responsibilities recognise and takes into account the rapid changes and developments in the local, regional and global communications industry. However, the implementation process shall take due regard of specific sub-sector demands so as to minimise policy, legal and regulatory conflicts as well as industry disturbances. Therefore, a phased approach to this vision shall be implemented in order to secure a smooth transition to a converged regulator.

In implementing the above provision at the legal/regulatory level, the following laws among others may require repealing or amendment as the case may apply;

- a) Telecommunications Act of 1994 and its regulations
- b) Radio Communications Act of 1994 and its regulations
- c) Independent Broadcasting Act of 2002 and its regulations

In line with Government's commitment to developing and promoting the implementation of an open, fair and flexible regulatory system, the roles and responsibilities prescribed for National Communications Regulatory Authorities as defined in the SADC and COMESA ICT Policy Guidelines shall form the basis for operationalisation of the regulatory framework. Therefore, the broad responsibilities of the regulator shall be to:

- (a) Ensure universal access with regard to basic communication services and universal service with regard to basic and advanced information services;
- (b) Ensure the provision of affordable, adequate, high quality and cost-effective ICT services that meet the diverse needs of consumers in order to promote economic growth and social development;
- (c) Facilitate the development of a seamless national, regional and international ICT infrastructure connectivity; and
- (d) Manage the Internet Governance including CLTD (.ZM) as a national resource; undertake domain name registration and assign the frequency spectrum to operators/services providers in the ICT sector. However,

The role of allocating frequencies for specific uses by other stakeholders in the country including the ICT sector shall remain the duty of the Ministry responsible for the ICT portfolio. Specifically, the role of the Regulator shall include:

- a) Regulating services and activities of ICT operators and service providers in the public interest;
- b) Achieving progress towards the Vision of the National ICT policy including universal access and service goals;

- c) Ensuring the provision of a wide range of ICT services to stimulate and support sustainable social and economic development;
- d) Stimulating investment, innovation, and a “level playing field” where competitive entry is permitted in the ICT sector;
- e) Protecting the interests of ICT users and consumers;
- f) Effective management of common national scarce resources, such as the radio frequency spectrum, numbering plan and Internet Governance in Zambia;
- g) Actively participate in the management, and developments in national, regional and international standards; and
- h) Promoting public confidence in the ICT market by establishing transparent regulatory, licensing and operational policies and guidelines including tariffs, interconnection agreements, dispute resolution and consume rights/obligations.

7.7 PRIVATE SECTOR

The private sector as a key partner to Government is recognised as having a critical role in the process of developing Zambia's information society and economy. The private sector is expected among other things: to serve as the key driver for the development of the Zambian economy by providing domestic and foreign investments in ICT services and infrastructure development; and facilitate the mobilisation of funding/ investments to implement ICT initiatives outlined in this policy.

Other roles envisaged for the private sector include:

- a) Working closely with the Department of Communications to develop implementation plans and strategies for private sector and civil society participation in the policy implementation process;
- b) Supporting and participating in innovative and productive ways of establishing a competitive local ICT industry so as to guarantee Zambia's effective participation in the global economy;
- c) Taking advantage of business opportunities resulting from the implementation of information society initiatives at SADC, COMESA, NEPAD, and WSIS levels;
- d) Supporting the development of the nation's human resources including promoting private sector investment in education as well as in R&D;
- e) Developing local capability for manufacturing of ICT products; and creating innovative services for local and export markets;
- f) Investing in ICT projects for rural and underserved urban areas as well as traditionally disadvantaged areas;
- g) Active participation in policy formulation, implementation and review process on an on- going basis.

7.8 PROVINCIAL ADMINISTRATION & LOCAL AUTHORITIES

Information plays an important role in the governance (decentralisation of power) process of the country. In this regard, access to information, ICT tools and services form the backbone for governance and citizens' participation in national, regional and global affairs. Therefore, provincial and district administrations in collaboration with the Department of Communications shall work closely with Central Government, private sector, civil society and other partners to implement this policy. In this regard, provincial and district administration as well as local authorities are expected to:

- a) Deploy and use ICTs in improving citizens' participation in national planning and civic matters including Governance systems using ICTs;
- b) Implement information dissemination and development planning information systems
- c) Attract local initiatives aimed at promoting investments in Community Radio stations, Internet, Computerisation, ICT literacy training etc;
- d) Use ICTs to undertake investment promotion activities in various local authorities; and to jump-start the implementation of the *decentralisation* process through ICTs;
- e) Develop Public-Private Partnerships to implement ICT programmes;
- f) Mainstream and develop ICT Strategies and Implementation plans in liaison with the Department of Communications.

7.9 TERTIARY AND RESEARCH INSTITUTIONS

In close collaboration with private sector, civil society, Department of Communications and other partners; the nation's colleges, universities and research institutions shall play a significant role in implementing this policy by:

- a) Expanding and consolidating the use of ICTs in scientific research and development (R&D) initiatives;
- b) Developing the nation's critical human and technical expertise as well as its scientific and industrial research capacity;
- c) Active participation in fundamental, applied and cutting-edge ICT-related industrial and scientific research as well as applying the results to facilitate Zambia's development;
- d) Mainstreaming the teaching of ICTs in all aspects of the education and training curricula of universities and colleges;
- e) Deploying and exploiting ICTs to extend scientific and research facilities and increase access to higher education;
- f) Assuming leadership in testing new technologies and to recommend to Government, the private sector and society in general on the appropriate

- actions to be taken;
- g) Creating Centres of Excellence with specialised and multi-disciplinary research teams on ICTs;
- h) Publishing and disseminating the results of research and experimentation, both by traditional and new ICT tools, especially the Internet.

7.10 CIVIL SOCIETY

Government recognises the important role that civil society (represented by traditional leadership, non-governmental and professional organisations, unions, community-based organisations, individuals etc.) play in the social and economic development of the country. Civil Society is a fundamental element in the preservation of human development and consolidation of governance systems.

The challenges that face civil society in this area are related to: low literacy levels especially in the rural areas and the underserved poor urban communities; inadequate telecommunication facilities, electricity and road network infrastructure and the weak institutional coordination mechanisms.

Therefore, civil society is encouraged to undertake the following initiatives in coordination with the Department of Communications, private sector and other partners:

- a) Exploit the potential of ICTs in the development of society, dissemination of information and knowledge;
- b) Use ICTs as a vehicle for the transmission and dissemination of information in development programmes;
- c) Incorporate an ICT component in community development programmes, and in programmes supported by international organisations;
- d) Create institutional mechanisms (NGOs, CBOs etc) to spearhead ICT awareness including implementation of projects at national and community levels;
- e) Monitor and evaluate the performance of the ICT sector in achieving developmental goals especially in community based initiatives;
- f) Assist in capacity building of ICT awareness and literacy programmes in the Country.

7.11 MEDIA

The media (print and electronic) plays an important part in Zambia's social and economic development process, especially with respect to information dissemination. Therefore, it is desirable that media enterprises will employ ICTs in order to enhance their internal production capacities as well as to use ICTs as an efficient and effective tool for information dissemination. other roles include:-

- a) Ensuring that this policy translates into *"ICT for Development"*;
- b) Act as change agents for information dissemination on the role and benefits of ICTs in social and economic development especially in communities;
- c) Develop partnerships with implementing agencies in the dissemination of on the progress of implementation;
- d) Act as change agents in monitoring and evaluation of implementation processes by various stakeholders.

CHAPTER 8 IMPLEMENTATION STRATEGY AND PLANS

An integrated and cross-sectoral policy such as this one requires focused and coordinated implementation in order to achieve positive results. Therefore, an Implementation Strategy for all sectors with special focus on the 13 pillars of the policy shall be developed. All sectors shall draw their ICT policies and implementation plans from this policy under the coordination of the Department of Communications by ensuring synchronisation with national planning and budgeting cycles; and will be consolidated into “The National ICT Implementation Plan”, with sub-plans for implementation on a priority basis covering the short, medium and long-term periods.

In developing the Implementation Plans, various models shall be evaluated. However, the SUNRISE model shall guide the development and implementation of the national and sector plans. The SUNRISE model is expanded as follows;

- S Special ICT Programmes, Development of Incentives and Policy instruments
- U Universal Human Resource Development Programme
- N National ICT Applications such as E-Government, Telemedicine etc
- R Resource (Technical and Financial) Mobilisation and Deployment
- I Integrated ICT (Public Sector Computerisation) Programme
- S Standards, Practices and Guidelines for ICT deployment and exploitation
- E Enabling Legal/Regulatory and Institutional Framework

In order to facilitate ownership of the National ICT Policy implementation process, sector-specific ICT policies and implementation plans shall dovetail into the national policy framework and incorporate the following as a minimum;

- a) Vision statement for Ministry/Agency set within the context of the National ICT Policy
- b) Broad strategies to be pursued by the Ministry/Agency toward the realisation of the sector vision on ICTs;
- c) Specific sector goals, objectives and strategies including security measures aimed at facilitating the operations and activities of the sector/agencies;
- d) Clear statement of commitments of the sector/Ministry/Agency with respect to mainstreaming ICTs;
- e) Identify ICT activities based on the SUNRISE model that will contribute to improved service delivery in the sector;
- f) Indicate mechanisms or Monitoring and Evaluation based on sound sector Indicators.

CHAPTER 9 RESOURCE MOBILISATION

In order to successfully implement actions and plans arising from this policy, special attention shall be paid to internal and external resource mobilisation strategies; targeting the involvement of private sector through PPPs. The role of co-operating partners and other stakeholders is very important. The Department of Communications shall be responsible for coordinating resource mobilisation in conjunction with the Ministry of Finance and National Planning for implementing the National ICT Plan. This shall include coordinating investments, providing for equitable and transparent resource allocation as well as monitoring and evaluation.

In particular, financial resource mobilisation shall include;

- a) Contributions from the national budget reflected as percentage expenditure on ICTs in the sector budgets;
- b) Contributions/sponsorship from national stakeholders/local industries;
- c) Contributions from bilateral/multilateral cooperating partners;
- d) Contributions from the Rural ICT and Enterprise Development Funds.

CHAPTER 10 MONITORING AND EVALUATION

The development of the National ICT Implementation Plan shall form the basis for Monitoring and Evaluation (M&E) of the implementation of the provisions of this policy. Specifically, the Department of Communications in conjunction with private sector, academia, civil society and other stakeholders shall develop an M&E system based on agreed sector indicators as part of the development of an integrated National ICT Implementation Plan.

In view of the above, periodic consultative sector reviews shall be *in-built* in the implementation process at all levels. This will include overall review of the implementation strategy taking into account policy directives as well as other national priorities. The review process shall in turn feedback into the policy making cycle.