



ZIMBABWE NATIONAL POLICY FOR

INFORMATION AND COMMUNICATIONS

TECHNOLOGY (ICT)

2016

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FOREWORD

The uptake and use of ICTs has greatly increased in recent years with the high uptake seeing the “digital divide” between rural and urban areas being reduced dramatically. This is evidenced by the high growth registered by Zimbabwe’s ICT indicators with active mobile penetration reaching 95.4% and Internet penetration surpassing 45% as at 31 December 2015. Rapid and robust infrastructural development and rejuvenation has enabled the development and availability of a plethora of e-services, which consumers have embraced as easier means to communicate and transact between person to person, person to business and business to business. There has been adoption of mobile money transfer, and various broadband applications such as WhatsApp, Facebook, Twitter, YouTube and Skype.

Government is also making great strides in the use of ICTs by introducing various e-Government services to the citizenry. Effort and investment have been made in the fields of ICT backbone infrastructure development, ICTs in education, research and development, the creation of Community Information Centres, ICT governance and the training of legislators and government officials in ICT usage. Zimbabwe is now connected to the undersea fibre optic network through SEACOM, WACS and EASSy.

While there is marked progress in the areas mentioned above, further efforts are needed so that the vision for ICT development in Zimbabwe is realised. ICTs should be developed into one of the major pillars of our socio-economic development and growth. The Zimbabwe Agenda for Sustainable Socio-Economic Transformation (Zim-ASSET) clearly spells out ICTs as one of the pillars for national socio-economic development. ICTs are given a key role as enablers for all other sectors to leapfrog in their development. In organizing these developments the Policy proposes various goals and statements.

It is therefore my sincere hope that all sectors of the society and economy will continue to harness the power of ICTs for the development of our nation. On behalf of the Government of Zimbabwe I extend my humble gratitude to line Ministries, Government Departments, all Stakeholders around the country and our different financial sponsors, who made the review process a success.

Honourable S. C. Mandiwanzira, MP

**MINISTER OF INFORMATION COMMUNICATION TECHNOLOGY, POSTAL AND
COURIER SERVICES**

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ABBREVIATIONS AND ACRONYMS

3G	3 rd Generation Technology
4G	4 th Generation Technology
AU	African Union
BAZ	Broadcasting Authority of Zimbabwe
CCTLD	Country Code Top Level Domain
DNS	Domain Name System
DNSSEC	Domain Name System Security Extension
DSTV	Digital Satellite Television
EDI	Electronic Data Interchange
G2C	Government to Citizen
G2G	Government to Government
G2P	Government to Private Sector
GDP	Gross Domestic Product
GIS	Geographical Information System
GSMA	Global System for Mobile Communication
IAP	Internet Access Provider
ICT	Information and Communications Technology
IDI	ICT Development Index
IGF	Internet Government Forum
IRP	Intellectual Property Right
ISP	Internet Service Provider
ITU	International Telecommunications Union
IXP	Internet Exchange Point
LTE	Long-Term Evolution
Ministry of ICTPCS	Ministry of Information Communication Technology, Postal and Courier Services
MVNO	Mobile Virtual Network Operators

NECF	National Economic Consultative Forum
NEPAD	New Partnership for Africa's Development
NGO	Non-Governmental Organisation
OAU	Organisation of African Unity
OGDI	Open Government Data Initiative
OVC	Orphans and Vulnerable Children
PFMS	Public Finance Management System
PLWDs	People Living with Disabilities
POTRAZ	Postal and Telecommunications Regulatory Authority of Zimbabwe
PPP	Public Private Partnership
PTC	Posts and Telecommunications Corporation
RCZ	Research Council of Zimbabwe
RIMDP	Regional Infrastructure Development Master Plan
RI	Research Institutions
RISDP	Regional Indicative Strategic Development Plan
SADC	Southern African Development Community
SEPs	State Enterprises and Parastatals
SIRDC	Scientific and Industrial Research and Development Centre
SMEs	Small and Medium Enterprises
SSB	Salary Services Bureau
STM-1	Synchronous Transport Module level-1 (155.52 Mbps)
STAP	Short Term Action Plan for Infrastructure
UNECA	United Nations Economic Commission for Africa
USF	Universal Service Fund
VoIP	Voice over Internet Protocol
VSAT	Very Small Aperture Terminal
WIOCC	West Indian Ocean Cable Company
Zim-ASSET	Zimbabwe Agenda for Sustainable Socio-Economic Transformation

INTRODUCTION

The development and application of Information and Communication Technologies (ICTs) since Independence in 1980 to date has seen unprecedented changes due to fast technological developments. This growth has been achieved through the realisation of the indispensable nature of ICTs by the Government of Zimbabwe, which initiated the development of the first National ICT Policy, finalised in 2005.

This second policy takes cognisance of the dynamism in the ICT sector, which renders it imperative that requisite policies are reviewed at certain intervals so that the country does not lag behind. The Government, through the Ministry of Information Communication Technology, Postal and Courier Services (Ministry of ICTPCS) and with financial and technical support from the United Nations Economic Commission for Africa (UNECA) and the National Economic Consultative Forum (NECF) held consultative workshops to review the first ICT Policy July to mid-September 2012.

The policy examines the Ministerial Vision as it cascades from the National Vision. Due to their importance, the Ministerial Vision and Mission are included in this Policy so that they set a clear foundation upon which this policy is anchored.

The consultative process noted the tremendous telecommunications sector developments and also the impediments to further growth of the ICT sector. Inadequate ICT infrastructure and skills coupled with unsatisfactory institutional arrangements, among other issues, as being major impediments to ICT sector growth.

The overall objectives of the policy framework are:

- A. **Transformation** - Facilitate delivery of Zim-ASSET and other National Developmental goals
- B. **Growth** – Enable and foster access to and increased use of telecommunications/ICT in all spheres of life (such as e-Government, e-Commerce, e-Employment, ICT in education, ICT in health, ICT in science and ICT in agriculture),
- C. **Inclusiveness** –Bridge the digital divide and provide broadband for all
- D. **Sustainability** – Manage challenges resulting from the telecommunication/ICT development
- E. **Innovation and partnership** – Lead, improve and adapt to the changing telecommunication/ICT environment

The following have been incorporated in this policy to achieve the above objectives:

- Institutional Framework
- Legal and Regulatory framework
- Universal access and service to ICTs
- National Broadband Plan
- Management of National Resources (i.e., Spectrum, Satellite Orbits, Numbering and Naming)
- Broad-based entrepreneurship and innovation (local content development)
- Empowerment and indigenisation for service providers and vendors
- Incentives to attract foreign investors

- ICT Sector competitiveness and viability
- Infrastructure sharing
- Human resource skills, capacity building and research

Key implementation programs on specific projects, which are critical in achieving the desired results, are provided.

The policy examines issues relating to capacity building and content development, research and development, gender and other marginalised groups. Financial and material resource issues are also brought to the fore with the realisation that these areas need to be addressed by Government together with the concerted efforts of other players. Participation by players from all sectors of the economy is encouraged in the implementation of this policy framework.

The status of the existing regulatory framework coupled with the institutional mechanisms is also herein reviewed. Various players are identified and their respective roles proffered and it is hoped that if these roles are executed conscientiously, Zimbabwe will achieve its enunciated vision of emerging as a united, strong, democratic, prosperous and egalitarian nation with a **high quality of life for all** by the year 2020.

Section I

BACKGROUND

1 Background

By definition information and communications technology (ICT) is the general term that describes information technology (IT) which stresses the role of unified communications and the integration of telecommunications (telephone lines and wireless signals), computers as well as necessary enterprise software, middleware, storage, and audio-visual systems, which enable users to access, store, transmit, and manipulate information. The term ICT is also used to refer to the convergence of audio-visual and telephone networks with computer networks through a single cabling or link system.

This second Information and Communication Technology Policy is a culmination of a review process that considered the first Zimbabwe National ICT Policy (hereinafter referred to as the 2005 National ICT Policy) through a consultative process that involved stakeholders from around all the provinces of the country. The consultative process, undertaken in all the ten provinces of Zimbabwe, entailed provincial workshops where stakeholders examined the 2005 National Policy and proffered their proposals.

Apart from the provincial workshops, information was conveyed to other stakeholders through the Ministry website and also through targeted survey tools to specific entities in a bid to adhere to the consultative nature of the process. This approach was adopted in order to not only enhance the quality of the final product, but to also ensure that the same product was a people driven output with which people would claim ownership.

The coordination of the whole process was undertaken by the Ministry of ICTPCS through a taskforce that comprised members of the NECF. A consultant was engaged by the Ministry, with the assistance of the UNECA. The consultant was tasked with the facilitation of the nationwide workshops, undertaking a desk study on the national, regional and international context on ICTs and the drafting of the current National ICT Policy.

In the consultations that ensued, the various policy documents whose principles underpinned the 2005 National ICTs Policy and the attendant policy framework process were all taken into consideration. The underlying principles of the second ICTs policy derive from the Ministry's vision and mission which are outlined below.

1.1 **Vision**

A knowledge-based society with ubiquitous connectivity by 2020.

1.2 **Mission**

Exploit the potential of ICTs for sustainable socio-economic development in Zimbabwe.

Section II

MAIN SOCIO-ECONOMIC DEVELOPMENT INDICATORS AND ICT STATUS IN ZIMBABWE

2 Key Demographic and Socio Economic Indicators

Zimbabwe is a land locked country with a land area of three hundred and ninety thousand eight hundred (390 800) sq. km and bordered on the South by the Republic of South Africa; on the east by Mozambique; on the north by Zambia and on the west by Botswana. The capital and largest city is Harare.

The population growth rate for Zimbabwe is currently estimated at 1.1 %. Zimbabwe has an estimated population of 13 million and a relatively youthful population with close to 40.6% of the population under the age of 15 years and only 3.8% of the population over 65 years old. (Census 2012 National Report). The national policy will therefore address this, as the youthfulness of the population has social and economic implications. Whilst this presents a human resource-base to be tapped from to facilitate socio-economic development efforts, this could also present a strain on the resources in terms of providing for education, health, social services and other amenities.

The negative impact of HIV/AIDS continues to pose a serious threat to the labour market due to the prevalence in the most productive age groups of 14 to 49 years. This has affected labour intensive industry productivity especially in the agricultural sector, the main source of economic and social activity.

Table 1: Basic Demographic Indicators

Indicator	Measurement
Total population (millions)	13 061 239
Growth rate (annual %)	1.1 %
Sex Ratio (Males/ 100 Females)	93
Male population	6 280 539
Female population	6 780 700
Age Distribution of Population	
Under 15 years (%)	41 %
15 to 64 years (%)	55 %
65 years and over (%)	4 %
Literacy % (as at 2011)	97 %
Life expectancy at birth (years)	38

Source: Census 2012 National Report

3 Previous ICT Policy Outcomes¹

Before the liberalisation of the telecommunications sector, there was a monopoly in the telecommunications sector vested with the Postal and Telecommunications Corporations (PTC). The Postal and Telecommunications Act [*Chapter 12:05*], Act No. 4 of 2000, which came into operation in 2000, unbundled the PTC and enabled the creation of three different entities to operate as successor companies with postal, telecommunication and cellular telecommunication licenses respectively.

3.1 Mobile cellular and fixed telephone subscribers

Phenomenal growth has been realised by the two private mobile cellular companies while the two public entities (one mobile and the other fixed) have experienced stunted growth. This suggests that there are some pertinent issues to be addressed in the public sector entities, such as levels of funding, adherence to corporate governance principles, as well as the need to commercialise in practical terms. Mobile penetration stood at 95.4% as of 31 December 2015 whilst fixed line teledensity currently stands at 2.6%.

3.2 Internet Subscribers

Another development that was attributed to liberalisation of the sector was the introduction and growth of internet users in the country. Active internet subscriptions reached 6,575,591 with mobile internet making up 95.6% of total internet subscriptions as of 31 December 2015.

3.3 Mobile Internet subscribers

Large increases have been seen in the mobile cellular sector with the introduction of mobile internet subscription, a phenomenon that commenced in 2009 in Zimbabwe. Econet initially provided this service and its subscribers currently account for more than three quarters of mobile data usage. Telecel introduced mobile internet services in 2010 and NetOne in 2011. There has been an average overall growth of 6.7% per annum in mobile internet subscribers as of 31 December 2015.

3.4 Incoming and Outgoing International Internet Bandwidth

The total equipped incoming internet bandwidth increased by 26.9% from 15,655 in 2014 to reach 19,864 Mbps in 2015. Outgoing equipped internet bandwidth also increased by 26.9% to reach 19,864 Mbps in 2015 from 15,655 in 2014. This is attributed to the commissioning of more STM1s by Liquid and TelOne as demand for internet increased.

¹ POTRAZ, Operator returns 2015

3.5 Postal and Courier Traffic

The total number of post offices stood at 226 as at 31 December 2015. 70 out of the offices had internet connectivity. International incoming postal and courier items stood at 471,206. However local postal and courier as well as international outgoing postal and courier items have steadily registered declines over the past decade.

3.6 Licensed Communications Providers

According to POTRAZ's register, as of December 2015, there were eleven (11) up-to-date Internet Access Providers (IAPs); two (2) Public Data Service Providers; one (1) Postal Service General Operator; four (4) Mobile Cellular Communications Operators; one (1) Fixed Telephony Operator; and forty (40) Private Network License holders. There is a single national television broadcaster and five (5) national radio broadcasters - one (1) privately owned – since 2012, with twenty eight (28) unlicensed community radio initiatives since 2011.

4 ICT Sector Challenges in Zimbabwe

Despite the developments that are outlined in 3 above the ICT sector has been faced with a number of challenges. Some of these include:-

a) Inadequate communications infrastructure:-

Whilst there has been significant roll out of communications infrastructure with 2G exceeding 75% population coverage (as at 31 December 2015), high speed broadband coverage is still patchy with most rural and remote areas remaining uncovered due to a non-holistic approach to universal service. Broadband coverage in rural and remote areas remains low. Coverage is mainly concentrated in affluent urban areas. This is widening the urban-rural digital divide against the principle of equitable access.

b) Inadequate Commercial Electricity:-

The national power grid does not cover the whole country which leaves a significant population dependent on alternative power sources which tend to be more expensive. Even those who are on the national grid experience erratic supply. This shortage has had adverse effects on the development and use of ICTs.

c) Inadequate ICT skills:-

There is a shortage of ICT skilled manpower to roll out ICT programmes. This shortage has a knock-on digital literacy which drives uptake and usage of ICT services. There is need to integrate ICTs in the education curricula commencing from early childhood education level as well as promote ICTs uptake within communities.

d) Fragmented institutional arrangements:-

The convergence of technology platforms has resulted in multiple services which used to be offered over Separate platforms being availed on a single platform/network. This has rendered it unnecessary to have multiple institutions overseeing the development of electronic communications in any given country.

e) Inadequate investment capital:-

- The high perceived country risk has resulted in higher lending rates for foreign borrowings.
- The liquidity crunch currently bedevilling the country has made it almost impossible to secure long term domestic funding for ICT projects. Where available the interest rates charged are exorbitant.

This has adversely affected infrastructure development and growth of the ICT sector in Zimbabwe.

f) Absence of Cybersecurity Framework:-

There is no Cybersecurity framework in place. Cybersecurity is the collection of tools, policies, security concepts, security safeguards, guidelines, risk management approaches, actions, training, best practices, assurance and technologies that can be used to protect the cyber environment and related assets. Such assets include connected computing devices, personnel, infrastructure, applications, services, telecommunications systems, and the totality of transmitted and/or stored information in the cyber environment. Cybersecurity strives to ensure the attainment and maintenance of the security properties of the country's assets against relevant security risks in the cyber environment. The overall security objective is to ensure the availability, integrity and confidentiality of data in cyberspace.

g) Low digital literacy level:-

The education curriculum does not include ICT, therefore the level of digital literacy at grassroots level is very low to stimulate service uptake and usage, especially in rural areas.

h) An outdated, service specific, licensing regime which is not in line with technological developments:-

The existing, service specific, licencing framework is restrictive in nature as it does not allow operators to take full advantage of the possible economies of scope and scale that are exploitable under a converged licencing framework that may enhance the Information Society.

i) Limited local ICT innovation, research and development (R&D) and entrepreneurship:-

There is no framework for R&D to stimulate innovation and harness the potential of ICTs in promoting entrepreneurship.

j) Absence of an internet governance framework to deal with the management of national and international internet traffic:-

Although the current Domain Name System (DNS) structure has served Zimbabwe well, in as far as ensuring the availability and reliability of service, it has some weaknesses that need to be addressed. Chief among these weaknesses is the fragmented manner in which the DNS has been implemented, which presents a lot of security loopholes in the system. Implementing security measures like Domain Name System Security Extensions (DNSSEC) is a challenge.

Another challenge is the absence of properly constituted Internet Exchange Points (IXPs) in the country, which results in externalisation of local traffic thereby compromising quality of service, affordability and security.

In order to overcome the various challenges in the ICT sector there is need on the part of all stakeholders to devise a well-focused approach in addressing the challenges at a broader level so that enabling policy, legal and regulatory frameworks are defined aiming at providing a conducive environment for Private Sector participation and investment. As a result, this policy places emphasis on:-

- a) Universal access and service;
- b) Infrastructure development and management;
- c) Research, innovation and industry development;
- d) Policy streamlining, regulatory framework and institutional mechanisms;
- e) Capacity building and content development; and
- f) National ICTs and the impact on regional integration.

5 Status of ICTs in Zimbabwe

The degree to which all sectors can integrate ICTs in their operations is determined by the capacity of the ICT sector to provide desired services in a cost effective and sustainable manner. There are large economic incentives (huge cost savings due to elimination of the telephone network) to merge the telephone network with the computer network system using a single unified system of cabling, signal distribution and management. A vibrant ICT sector would be expected to provide adequate and efficient telecommunication, postal and courier, broadcasting and internet services countrywide. The ICT sector in Zimbabwe is characterised by a multiplicity of players that in one way or the other provide most of these services. A number of developments have undoubtedly contributed to the growth of ICTs to the level at which the sector is at the moment. These include:-

- (a) Liberalisation of the telecommunications, postal and courier services sector.
- (b) Establishment of regulatory bodies in the ICT sector, i.e.
 - Postal and Telecommunications Authority of Zimbabwe (POTRAZ)
 - Zimbabwe Media Commission (ZMC)
 - Broadcasting Authority of Zimbabwe (BAZ)
- (c) Establishment of the Cabinet Committee on Scientific Research, Technology Development and Applications;
- (d) Computerisation of government ministries in the main centres of the country;
- (e) Creation of the Ministry responsible for ICT;

- (f) Increase in the internet penetration rate; and
- (g) Enactment of the Criminal Law Amendment (Protection of Power, Communications and Water Infrastructure) Act, No. 1 of 2011 to deal with the problem of vandalism of existing power, communications and water infrastructure; and
- (h) The past temporal removal of duty on ICT hardware and software.

While these initiatives clearly denote some effort in the development of the ICT sector, more effort still needs to be exerted in the process towards the attainment of an inclusive, competitive and viable ICT sector in Zimbabwe.

The Policy's Desired Outcomes Are as Follows:-

- Work with relevant institutions and Government departments to develop programs that increase ICT human resource capacity and skills.
- Facilitate the deployment and exploitation of ICTs in the educational system from primary school upwards. Work with the relevant Ministries to include ICT training and education in schools, colleges and universities.
- Provide equitable access to ICT enabled education and training in all parts of the country, including disadvantaged communities.
- Promote e-learning and use of e-learning materials throughout Zimbabwe.
- Encourage, promote and apply research and development in ICTs in society.
- Cultivation of an e-commerce culture, which fosters competitiveness and cost-effectiveness especially among SMEs in national, regional and international transactions.
- Market integrity and transparency: In order to flourish, e-commerce requires an accessible, predictable, safe and transparent trading environment, which operates across territorial borders and jurisdictions.
- Business innovation: Products should meet user demand and service excellence.
- Empowerment of consumers: The obligations of on-line suppliers, such as type of information which shall be made available to persons or parties on the information system where such goods or services are offered.
- Create attractive investment policies in the ICT sector, including facilitation of Public Private Partnerships (PPPs), especially in infrastructure development.
- Regulatory and institutional efficiency: Well-resourced effective and efficient regulatory institutions and regulatory tools in order to guarantee a level playing field for transacting businesses.

Section III

THE POLICY

An analysis of the ICT Policy of 2005 and its outcomes has resulted in the following policy interventions that shall seek to build on the former Policy's successes and address the subsequent challenges that have ensued.

6 **Key Policy Objectives**

The policy provides strategic direction on how ICT development and application enables national socio-economic transformation. The policy aims to leverage the strengths and opportunities available for the country. The ICT policy goals are to realise:

- A. **Transformation** - Facilitate delivery of Zim-ASSET and other National Developmental goals
- B. **Growth** – Enable and foster access to and increased use of telecommunications/ICT in all spheres of life (such as e-Government, e-Commerce, e-Employment, ICT in education, ICT in health, ICT in science and ICT in agriculture)
- C. **Leadership** - Achieve ICT leadership in Africa
- D. **Inclusiveness** –Bridge the digital divide and provide broadband for all
- E. **Sustainability** – Manage challenges resulting from the telecommunication/ICT development
- F. **Innovation and partnership** – Lead, improve and adapt to the changing telecommunication/ICT environment

6.1 **Transformation - Facilitate delivery of Zim-ASSET and other National Developmental goals**

The policy objective is to use ICT as an enabler to achieve the objectives of the four Zim-ASSET Clusters. This is a medium to long term strategy with cross-cutting benefits on the entire socio-economic transformation agenda. To achieve this goal, ICT is not delivered as a standalone sector, but it is embedded in all national development strategies and is a tool to enable all economic sectors.

As an example, one of the Zim-ASSET Clusters is Social Services and Poverty Reduction. There are many causes of poverty which are mutually reinforcing and the absence of ICT makes it worse, for instance situations where poor citizens require access to basic information and knowledge on health, education, prices and public welfare services. Inadequate ICT access results in service delivery inefficiencies which then also increases the transaction costs.

The enabling Zim-ASSET policy targets are developed, measured and monitored through specific projects and implementation plans rolled out together with other Government departments.

6.2 Growth – Enable and foster access to and increased use of telecommunications/ICT

The policy objective is to achieve a year on year ICT sector growth rate that is twice as high as the Zimbabwe national Gross Domestic Product (GDP).

The rationale behind this policy objective is to use ICT sector growth to directly contribute towards the overall national socio-economic agenda. According to the World Bank, a 10% increase in broadband penetration causes a 1,38% in GDP contribution. In 2013 ICT contributed 15,2% to Zimbabwe's GDP. According to the 2015 National Budget, the forecast ICT growth is 6.4%. In developing economies like Zimbabwe, it is a lot easier to drive and achieve ICT sector standalone goals because the other sectors of the economy such as mining or agriculture, as examples, may not be ready to embrace ICT on a significant scale.

The Policy objective also aims to minimise the impact of natural disasters and climate change on the general populace. Effective disaster response demands rapid access to reliable and accurate data and the capacity to assess, analyse and integrate information from varied sources. If effectively deployed, ICTs can help in reducing the impact of natural disasters and acute climate-related events.

A key component in enabling the growth and access to telecommunications is the efficient management and utilisation of radio frequency spectrum. In this regard, the Policy objective is to achieve, inter alia:

- a) Efficient utilisation of radio frequency spectrum for sustainable national socio-economic development
- b) Enhanced national security and defence;
- c) Enhanced emergency preparedness against disasters;
- d) Efficiency in the dissemination of educational information and entertainment;
- e) Efficient and affordable telecommunication services;
- f) Research and Development; and
- g) Enhancement of social and economic progress.

6.3 Achieve ICT Leadership in Africa

The policy objective is for Zimbabwe's ICT to be ranked in the top 3 in Africa using the ICT Development Index (IDI) by 2018 and number 1 in 5 years' time. The policy objective aims to put Zimbabwe on the ICT global stage and a hub for Africa in terms innovation,

entrepreneurship, skills, products and services. ICT is global in nature and Zimbabwe can only maximize the benefits if it holds a significant position and status on the international stage.

The benefits include attraction of investment and the stimulation of the domestic and export market for the country. The positive performance of both public and private sectors is required to achieve this objective. The policy leverages the fact that Zimbabwe has the highest literacy rate in Africa.

6.4 Inclusiveness –Bridge the digital divide and provide broadband for all

The Policy objective is to attain universal access to ICT services in the country by 2018 that translates to a 100% Internet penetration, 80% Internet geographical coverage and affordable services relative to the country's economy and SADC benchmarks. Universal access will drive the domestic market for ICT products and services. In addition, it is a foundation for national innovation and entrepreneurship.

6.5 Sustainability – Manage challenges resulting from telecommunication/ICT development

The Policy objective is to improve Cybersecurity readiness for the country so as to build confidence and trust in ICTs and their use. The Policy also aims at ensuring that Zimbabwe does not become a haven for cyber-crime.

With regards to the environment the Policy aims to reduce environmental degradation and reduce human and animal exposure to harmful emissions emanating from telecommunication systems and devices.

6.6 Innovation and Partnership – Lead, improve and adapt to the changing telecommunications/ICT environment

The Policy objective is to build a conducive environment for innovation, entrepreneurship, investment and partnership in the development of the local ICT software and application development sector.

The attendant objectives to herald the above are as follows:-

- a) Develop a legal framework that addresses issues related to cyber security, revenue leakages, protection of data, child online protection, intellectual property rights (IPRs), broadband, e-transactions and ethical and moral rights;
- b) Facilitate and support the provision and maintenance of infrastructural facilities necessary for ICT development, such as reliable supply of energy, communications and transport;
- c) Put in place mechanisms to ensure that existing infrastructure is effectively utilised through, among other modalities, sharing to avoid duplication;
- d) Manage internet traffic at national level as well as on the Gateways;

- e) Systematically promote and support the relevant and sustainable development of ICTs;
- f) Embark on extensive capacity building and training programmes to provide adequate supply of qualified ICTs personnel and knowledge workers in all sectors;
- g) Advocate for the establishment of ICT structures for effective implementation of ICT strategies;
- h) Promote the research and development of local ICT products locally, regionally and internationally;
- i) Promote Universal development in indigenous languages;
- j) Establish institutional mechanisms and procedures for determining sectoral application priorities;
- k) Promote, support and enhance the development and use of ICTs and ensure equitable access to attendant benefits across gender, youths, children, people living with disabilities and the elderly;
- l) Capacitate the ministry responsible for ICT to enable it to assist in the formulation of sector specific ICT policies;
- m) Improve the quality of ICT services and products;
- n) Protect consumers during the dispensation of the rapid adoption and diffusion of ICTs i.e. 3G, 4G (LTE);
- o) Undertake adequate and regular policy reviews in consultation with stakeholders; and
- p) Restructure the local DNS and IXP with a view to co-locating the management of the country's DNS and IXP at the same location and under one entity.

Key Pillars in ICTs Development Are As Follows:-

7 ICT Infrastructure

ICT Infrastructure is a primary focus area because it is underlying platform for the connectivity, provision and access of ICT services. It refers to the physical structures, hardware and software that enable connectivity and usage. For instance, backbone infrastructure is the artery upon which all information is communicated and last mile infrastructure is the access network required for customers' access to information. For ICT to have a positive impact on development there must be extensive, affordable and equitable access to infrastructure. Spectrum, which is a finite resource must be equitably and efficiently allocated and managed.

High-bandwidth backbone networks are a key part of the investment needed for broadband. These networks connect towns and cities within countries and across borders. They also link to the international submarine fibre-optic cable networks that convey communications traffic between continents.

Currently, ICT providers share infrastructure on purely contractual basis with the regulator playing a limited oversight role in enforcing sharing. This has resulted in unnecessary

duplication of infrastructure and wastage. Ideally, ICT operators should compete on the basis of services provided as opposed to infrastructure.

As a starting point, all the ICT infrastructure required to build the backbone which is currently deployed in government departments and SEPs will be pooled together to form the seed infrastructure. This approach significantly reduces the initial setup funding requirements, provides quicker implementation and eliminates duplication and wastage regarding infrastructure in the country.

7.1 Policy Statements: The Development of National ICT Backbone

- a) The Ministry will facilitate the setting up of a national ICT backbone for broadband services, information and applications to avoid the duplication of investment by service providers in the country.
- b) The Institutional and regulatory framework will be implemented for the ICT backbone to be owned by a single entity where Government, SEPs and the private sector can be shareholders. Government will retain control to ensure that a national mandate for universal and affordable access is achieved.
- c) Establish high speed and high capacity links to enable Zimbabwe's integration towards global interconnectivity. The ICT backbone will form the connectivity backbone across all provinces and cascade down to district levels.

7.2 Policy Statements: Infrastructure Sharing

Over and above its regulatory mandate, the Government of Zimbabwe has embarked on a deliberate policy to encourage commercial infrastructure sharing. Commercial infrastructure sharing will result in the efficient use of national resources and avoids duplication of infrastructure. Impeccable global research has proven that telecommunications companies save up to 40% of capital costs by adopting infrastructure sharing. Infrastructure sharing also removes the biggest barrier to ICTs investment, which is huge infrastructure costs. The national ICT policy therefore seeks to:

- a) Develop and implement the regulatory and legal framework to enable and enforce infrastructure sharing by ICT service providers to minimise costs to consumers and improve efficiency.
- b) Facilitate investment and encourage companies that focus on deployment and operating infrastructure entities.
- c) Facilitate the creation of a platform where service providers can share and exchange information on infrastructure sharing and agree pricing models.
- d) Adopt a dig once policy to facilitate infrastructure sharing across all utility providers in the country. This should be co-ordinated through a one stop shop infrastructure sharing facility.
- e) Facilitate the establishment of a national fibre backbone with open access by the State.

7.3 **Policy Statements: National Data Centre**

The Government of Zimbabwe will establish a national data centre, which allows Zimbabwe to centralize her information storage, management and protection, as well as take advantage of cloud computing opportunities. In addition the government will establish a National Internet Exchange (NIE) to ensure localised internet exchange. The Government will therefore:

- a) Facilitate the development of a single national data centre and internet exchange strategy and blueprint for the design and implementation of national data centre infrastructure and services.
- b) Establish a Data Centre where Government, SEPs and the private sector can be shareholders and an agency or SEPs can be appointed to operate the Data Centre.
- c) Align the National Data Centre with other programs such as e-Government, national backbone infrastructure and affordable internet service provision.
- d) Lead in the coordination and establishment of a national data centre.

8 **e-Government**

E-government includes all electronic information movement, interactions and transactions that facilitate service delivery among Government ministries, institutions, departments and agencies (G2G); between Government and the private sector (G2P) and between Government and the citizenry (G2C). e-Government relies entirely on ICTs to provide services such as:

- Convenient access to interactive information and services;
- Timely delivery of public services; and
- Efficient and effective methods of conducting business transactions.

8.1 **Policy Statements: e-Government**

- a) Facilitate the development of a single national strategy and blueprint for the planning, design and implementation of e-Government infrastructure and services. This will avoid fragmentation, duplication and focus the country on areas of achieving maximum results.
- b) E-Government will be deployed to reduce government institutions operational costs and to bring Government closer to the people.
- c) The e-Government Strategy will maximise and leverage on national ICT infrastructure to optimise capital and operational expenditure requirements.
- d) Avail e-government services to all citizens in a language that they understand.

9 Content

The Government of Zimbabwe intends to increase innovation through promoting local content and application development. This policy is aimed at complimenting private sector efforts to bridge the digital divide and empower young Zimbabwean entrepreneurs to participate in the creation of locally relevant content and applications that will increase Zimbabwe's web presence and build a software industry. The Government will bolster this policy by ensuring that a minimum of 30% of the ICT software and applications used by Government institutions is developed locally, in all the national languages. One of the strengths of ICTs is the way they can assist unlock distant expertise, knowledge and markets. However, this access has its limitations. Easier access to global knowledge exposes consumers in developing countries to foreign content that may undermine or overwhelm local cultural heritage and socio-economic livelihoods. Therefore there is need to support the development of local content and leverage on ICTs as conveyors of locally relevant messages and information, providing opportunities for local people to interact and communicate with each other, expressing their own ideas, knowledge, heritage and culture in their own languages. Local content should also be perceived as a driver for local job and wealth creation. It is also a potential foreign currency earning industry through the export of locally developed software and applications.

9.1 Policy Statement: Content Development

- a) Create a framework for cloud computing and big data.
- b) Facilitate and encourage the development of content that is culturally, socially, economically and religiously acceptable and pertinent.
- c) Promote local production of ICT products and services to ensure relevance of content in local languages and the use of appropriate technologies that meet international standards.
- d) Ensure that ICT training is decentralised to the lowest possible level, i.e. to farming, rural, and high density areas.
- e) Encourage public and private investment in ICT e-services applications development.
- f) Offer incentives for local software, applications development by creating a market and appropriate promotion.
- g) Develop a strong policy and support for patent and copyright protection.

10 ICT Sector Growth

ICT Sector growth is dependent on continuously reviewing and enhancing an enabling legal, regulatory, and institutional environment to encourage sustainable competition, increase investment, innovation, stimulate service usage and affordable choice of services for consumers. A number of policies are stated below to this effect.

10.1 Policy Statement: Mobile Number Portability

- a) Facilitate the development of the legal, institutional and regulatory framework for mobile number portability to be implemented by telecommunications service providers.
- b) Encourage service providers to promote the use of mobile number portability as a means to reduce barriers to competition, increase consumer choice by reducing switching costs and as a means for business growth.

10.2 Policy Statement: Converged Licencing Framework

- a) Adopt a converged licencing framework to align with technological and service convergence as well as to open up the sector for fresh investment in various market segments.
- b) Merge regulatory institutions overseeing the electronic communications sector in order to address redundancies and inefficiencies.
- c) Facilitate enhanced competition by adopting converged licencing which is a horizontally integrated licencing framework that is technology and service neutral. This will enable the licencing of Infrastructure Service Providers (tower companies etc.), Network Service Providers (public network operators etc.) and Application Providers (MVNOs, content integrators, etc.)
- d) Foster efficient utilisation of network resources as well as scarce network resources that include radio frequency spectrum, numbering, and rights of way.
- e) Foster efficient utilisation of regulatory resources in the form of manpower, spectrum management resources and other regulatory logistics.
- f) Use licencing as a vehicle to foster ICT development in marginalised areas.

10.3 Policy Statement: Entrepreneurship

- a) Promote and provide government support to position ICTs as a vehicle for innovation, entrepreneurship and wealth creation.
- b) Enable broad-based partnerships to expand access to credit for young ICT entrepreneurs.
- c) Work with relevant Ministries to ensure that Government funded initiatives for youth and SMEs include ICT projects.
- d) Private and public sector to be encouraged to provide mentorship opportunities to new entrepreneurs.
- e) Facilitate the implementation of a broad-based entrepreneurship policy which enables national participation.
- f) Provide a platform for regional and global entrepreneurship participation and networking.
- g) Create an ICT Growth Opportunities Fund to facilitate entrepreneurs in the ICT Sector.
- h) Support the creation and growth of ICT innovation hubs.

10.4 Policy Statement: ICT SEPs Transformation

- a) Position the ICT SEPs as equal and competitive partners to private sector companies in driving growth and policy implementation.
- b) Enable ICT SEPs alignment and rationalisation of governance structures, investments, assets and operations to enable Government to effectively influence market developments and consumer services. In addition, optimise the funding requirements by the SEPs through alignment of strategies.
- c) Enable the exploration and implementation of opportunities for consolidation, integration and mergers among the SEPs to maximise on synergies and economies of scale.
- d) Oversee the ICT SEPs strategies and business plans to achieve competitiveness, rapid growth and profitability and to pay dividends to the shareholder.
- e) Implore the ICT SEPs to actively translate opportunities created by ICT policy into sustainable business strategies.
- f) Fit ICT policy programs with SEPs business plans so that funding and implementation of policy is executed through the normal course of business. This reduces the separate and additional funding requirement from government to implement some of the policies.

10.5 Policy Statement: Innovation

A culture of innovation is a critical success factor in ICT development. The national ICT Policy will promote and incentivise investment in high-tech and high value-added manufacturing and business ICT services; through the establishment of Technology-Park with Special Economic Zone status. This policy shift intends to attract world-class investments in high-tech manufacturing of mobile device manufacturing, chips, processors and related accessories; to make Zimbabwe the regional hub for knowledge intensive ICT manufacturing and service activities. The Government has promoted innovation and capacity building measures through various initiatives, which include the establishment of:

- The Innovation and Commercialisation Fund administered by the Ministry of Higher and Tertiary Education, Science and Technology Development;
- The ICT Achievers' Awards administered by the Ministry of ICTPCS; and
- An RCZ Fund database of research priorities that also includes ICTs.

The Government shall:

- a) Create the enabling environment for the country to become an ICT innovation hub for Africa;
- b) Work with private sector to set up the infrastructure and funding for ICT innovation;
- c) Facilitate a broad-based innovation policy which enables national participation;
- d) Incentives and guidelines to attract international talent to assist in driving innovation;

- e) Encourage the development, exploitation and protection of intellectual property rights (IPRs) in the ICT sector;
- f) Facilitate R&D in ICTs through appropriate funding schemes; and
- g) Grant Special Economic Zone status to Technology Parks.

10.6 Policy Statement: ICT Private Sector Participation

The ubiquitous presence of science and technology across advanced societies has been transforming the nature of work and life in dramatic ways. The Government of Zimbabwe intends to create an enabling environment for the organised export of home-grown intellectual talent resources through the provision of ICT productivity service centres through automation and integration systems. In addition to being a high-value commodity in media and education, knowledge now permeates modes of production for extraction and accumulation of value through the following:

- a) Support private sector growth and investment in ICT skills training.
- b) Continuously promote active participation of private sector in ICT policy implementation.
- c) Fit of ICT policy programs with private sector business plans so that funding and implementation of policy is executed through the normal course of business. This will reduce separate and additional funding from Government to implement some of the policies.

10.7 Policy Statement: Radio Frequency Spectrum Management

Radio frequency spectrum is a scarce public resource that goes to waste if not used optimally. The frequency spectrum will, therefore, be managed in line with public policy objectives, with a view to making it available to all users under specific and clear conditions. This process will maintain a balance between the public and private interest. In the event of conflict, public interest shall prevail.

The following Policy Statements address the nation's objectives on radio frequency spectrum management.

a) Radio Frequency Spectrum Planning, Allocation and Assignment:-

The radio frequency spectrum will be planned, allocated and assigned in an optimal manner. Measures will be put in place to ensure that the radio systems are implemented within a reasonable period and radio frequencies are efficiently utilised. The allocation of frequencies to radio services will be done by POTRAZ.

b) Radio Frequency Spectrum Sharing:-

Radio frequency spectrum sharing among various services and users will be encouraged in order to satisfy the growing needs for spectrum resources. Where safety of life, service levels or the public interest may be compromised, the requirement to share spectrum will not apply.

c) Non-Radio Frequency Spectrum Based Alternatives:-

Where appropriate, the availability of non-spectrum based alternatives to spectrum-based services will be assessed, and the use of alternative non-spectrum technologies will be encouraged.

d) Market Principles:-

With the increasing and competing demands for spectrum, market principles may, in appropriate cases, be applied to promote effective use of the radio frequency spectrum, however the Government will ensure that spectrum fees does not become a burden to operators.

e) Radio Communications Standards:-

Radio communication standards will be developed by POTRAZ in consultation with relevant stakeholders, in conformity with the applicable international standards developed by the International Telecommunication Union (ITU). Users of the spectrum will be required to implement the technical and operational standards in order to mitigate harmful interferences and as a measure for ensuring that access and utilisation of the spectrum is maximised.

f) Migration of Services:-

Radio frequency spectrum assignment/allocation neither confers ownership nor a continued right to a particular radio frequency. POTRAZ will notify users of any conditions or circumstances, which could result in migration of services to other radio frequencies.

g) Public Consultation:-

Appropriate mechanisms will be put in place to allow stakeholders to provide inputs to ensure that the radio frequency spectrum management process is more responsive to technological advances and user demands.

h) Promotion of Efficient Technologies:-

Use of spectrum efficient technologies and techniques will be required. The national frequency spectrum policy and management will be reviewed as required from time to time.

i) Exemption from Licensing:-

Government security agencies and other institutions that use spectrum to provide strategic public services may be exempt from paying frequency fees; and/or license fees.

10.8 Policy Statement: e-Waste Management

The Government of Zimbabwe has identified electrical and electronic equipment waste as an area of increasing concern in the country. The rapid acquisition of mobile devices experienced across Zimbabwe; and added to this phenomenon, the relentless advances in upgrades have resulted in the generation of e-waste. E-waste poses a threat to the environment if not properly collected, segregated and treated. The volume of e-waste grows rapidly every year and is also

believed to be one of the most critical waste disposal issues of the twenty-first century. Insufficient legislation and recycling collection systems in Zimbabwe, mean that safe management of e-waste is seldom practiced, when seen on a global scale. The Government shall develop a framework for e-waste management to incorporate the establishment of recycling facilities; and awareness campaign on safe and timely disposal of obsolete electrical and electronic equipment.

10.9 Policy Statement: Use of ICTs for Disaster and Climate Change Management

The World Telecommunications Development Conference which was held in Hyderabad, India in 2010 (WTDC-2010), identified natural disasters as a major threat to socio-economic development and adopted emergency telecommunications as one of the regional initiatives for almost all regions. A multi-stakeholder forum on the role of ICTs in Disaster Management and Climate Change should provide an opportunity for policy makers and other participants to debate and adopt concrete strategies on how information and communication technologies can help implement the Sendai Declaration and Framework for Disaster Risk Reduction 2015-2030, achieve the 2030 Agenda for Sustainable Development and mitigate the effects of climate change in line with the Paris Agreement, adopted by the climate change conference in December 2015.

The ICT sector shall endeavour to provide disaster-affected communities, first responders, and entities involved in disaster management with appropriate, timely and reliable telecommunications/ICTs by allocating appropriate resources on trends and emerging technological innovations, financing mechanisms, case studies, climate change issues and the role of the private sector and other non-state stakeholders to address challenges in deploying telecommunications/ICT resources for disaster response.

11 Local ICT Industry Development and Empowerment

Zimbabwe requires a vibrant and high growth local ICT industry to make the policy objectives sustainable in the long run.

11.1 Policy Statement: Development of Local ICT Industry

- a) Promote the production, manufacturing, development, delivery, and distribution of ICT products and services by local industry.
- b) Develop special ICT policy instruments and incentive programmes to stimulate local manufacturing industry.
- c) Promote development of software for the domestic and export market as ways to quickly set up a vibrant ICT industry in support of other sectors of the economy.
- d) Promote the development and implementation of ICT applications across all sectors which could be executed as projects targeted at relevant national ICT initiatives in sectors, for example, such as health, education, youth and commerce. Such applications should provide real and basic solutions which are relevant to the people on the ground.

- e) Promote local development and manufacture or assembly of ICT software and hardware to ensure their availability at affordable cost.

11.2 Policy Statement: Empowerment and Indigenisation

- a) Define the ICT sector empowerment objectives and targets for equipment suppliers.
- a) Promote the use of MVNO as a vehicle to implement empowerment in Telecommunications.
- b) Facilitate the Public-Private Partnerships as an approach to enable empowerment.
- c) Enable local authorities to partner ICT service providers to empower communities.

11.3 Policy Statement: ICT Tax and Duties

- b) Work with other Ministries to limit tax on ICT equipment, accessories and products for a stipulated period.
- c) Provide tax incentives to companies that invest in ICT

12 Affordable Broadband for All – The Universal Services Fund

Through the Universal Service Fund, the Government of Zimbabwe recognises the importance of ensuring universal availability and use of modern communications services across the country. The USF is therefore positioned as a vehicle to ensure accelerated access for marginalised areas of Zimbabwe, while in effect reducing the cost of ICTs to the majority of Zimbabwe's population. The aim is to ensure broadband connectivity throughout the country by leveraging the Funds' financial strength to build infrastructure; and to manage the Fund in a manner that ensures that it is self-financing in order to deliver on its mandate.

12.1 Policy Statement: Broadband Data Price and Last Mile Deployments

- a) Define and implement the regulatory framework and processes to rationalize data tariffs to make broadband services more affordable and to increase usage.
- b) Facilitate negotiations with upstream internet bandwidth suppliers to encourage continuous supply side internet price reduction.
- c) Leverage the national ICT backbone, SEPs and the WIOCC shareholding, among other options, to achieve supply side internet price reductions.
- d) Facilitate the deployment of last-mile technologies to reduce prices.
- e) Facilitate competition in ISPs as a mechanism to reduce prices to consumers.
- f) Pursue opportunities to grow the country's shareholding interest in undersea cables.

13 Human Resources Skills and Capacity

Education is key to social, scientific and technological development. Zimbabwe's education policy resulted in a literacy rate of 97 percent (as at 2011, ZIMSTAT), the highest in Africa. This high literacy rate indicates that Zimbabwe has a high potential to be a knowledge society as the majority of its people can read and write. The number of personnel with ICT qualifications is not adequate for the country and there is no standardised national ICT training certification. There is the need to widely expose the employed as well as the youth and children to ICTs.

13.1 Policy Statements: ICT Skills Development

The Government of Zimbabwe intends to increase ICT usage in primary and secondary schools through enhanced teaching and learning through ICTs. Most schools do not have reliable connectivity due to electricity problems and high Internet costs. This policy aims to provide connectivity in all schools further bridging the urban-rural digital divide, and enhancing teaching and learning through the use of technology tools and promoting universal computer literacy in Zimbabwe's schools. Therefore, it is necessary for Zimbabwe to adopt strategies that ensure resources are maximized in order to realize ICT policy goals as follows:

- a) Work with relevant institutions and Government departments to develop programs that increase ICT human resource capacity and skills.
- b) Facilitate the deployment and exploitation of ICTs in the educational system from primary school upwards. Work with the relevant Ministries to include ICT training and education in schools, colleges and universities.
- c) Provide equitable access to ICT enabled education and training in all parts of the country, including disadvantaged communities.
- d) Promote e-learning and use of e-learning materials throughout Zimbabwe.
- e) Make use of the USF to boost connectivity for remotely located schools, in order to facilitate the e-Learning Programme.
- f) Encourage, promote and apply research and development in ICTs in society.

14 Regional and Global Positioning

14.1 Policy Statement: Participation and Leveraging Regional and Global Platforms

- a) Promote and participate in global partnerships, workshops and conferences to strengthen the country's ICT capacity and competitiveness.
- b) Participate in regional and international initiatives in order to tap into resources that are available under such initiatives.
- c) Facilitate the integration of regulatory frameworks and policy with regional institutions.
- d) Engage in participation at management levels at ITU and other ICT related organisations.

15 Universal ICT Access

15.1 Policy Statement: Universal Access to ICT Services

- a) Drive the goal to achieve universal access to ICT services by all citizens.
- b) Increase ICT access in rural and disadvantaged sections of the population.
- c) Review the current USF mandate and application framework to align the entire process with the Ministry of ICTPCS Policy goals. For instance, the fund and programs should cover applications and content development.
- d) The USF and programs should prioritise the technologies, infrastructure and systems to provide the cheapest means of communication to communities and cater for disaster management
- e) The USF programs should be aligned with the policy implementation plans.
- f) The Universal Services Fund must be a stand-alone entity to ensure its mandate is not clouded with that of regulation.

16 Investments and Funding

16.1 Policy Statement: Attract Investment and Funding into the ICT Sector

- a) Collaborate with relevant ministries and agencies to create policies and incentives for foreign direct investment (FDI) and domestic investment in ICT.
- b) Create attractive investment policies in the ICT sector, including facilitation of Public Private Partnerships (PPPs), especially in infrastructure development.
- c) Develop policies and programs that enable foreigners that bring specified amounts of ICT investment to be provided citizenship.

17 Convergence

The e-SADC framework (Luanda, 2010) addresses convergence issues and harmonization of ICT infrastructure, services and indicators, promotes ICT usage for regional economic integration, enhancement of connectivity and access to ICT services.

Evidence abounds that convergence is occurring at the technological, applications and services level. The current Zimbabwean legal and regulatory framework, places a lot of emphasis on technology in relation to the licensing of operators, is lagging behind technological developments thereby rendering it extremely difficult for telecommunications operators to seamlessly undertake their business. There is *de facto* as opposed to *de jure* convergence.

Zimbabwe is a member State of SADC, the AU and ITU and fully participates in all their activities. It is therefore important that Zimbabwe should not lag behind when it comes to

addressing issues of convergence and harmonisation of ICT infrastructure, regulatory framework and services. The licensing regime should provide for network neutrality so as to enable licensees to seamlessly provide the necessary services required by their customers.

17.1 Policy Statements: Establish an Institutional Framework for Convergence

- a) Streamline functions of existing regulatory and administrative institutions by establishing institutional mechanisms to co-ordinate inter-organisational planning, policymaking and implementation of strategies to develop ICTs, taking into account the convergence of audio-visual services, broadcasting, telecommunications, postal and courier services and on-line computer services.
- b) Take legislative measures to ensure that there is an integrated and autonomous regulatory body in the ICT sector as a way of dealing with issues of convergence.
- c) Enact legislation dealing specifically with digital data protection matters and cyber security.

18 Marginalised Persons

The interest of men and women, youths, children, disabled people, the elderly, Orphans and Vulnerable Children (OVC) feature in all the sectors of the economy and the social and political life of the nation. Gender mainstreaming is a strategy to ensure that concerns and experiences of both men and women are integrated into the design and implementation of ICT programmes so that all benefit equally. Youths and children constitute a high proportion of ICT users and opportunities should be created to ensure their full participation. Studies indicate that the elderly respond slowly to change and shun the use of new technologies. ICTs should be developed in such a way as to accommodate this demography with emphasis on accessibility.

18.1 Policy Statements: Develop ICT Policy to Cater for Marginalised People

- a) Ensure gender equality and equity in access to and use of ICTs.
- b) Bridge the digital divide in relation to men and women, the youths, elderly, disabled people and OVC by promoting sector specific policies that promote the effective use of ICTs.
- c) Create opportunities for youths and children in the development and use of ICTs, particularly in content development, education, employment and income generation.
- d) Create opportunities to involve the participation of youths, children and OVC in the design, implementation and use of ICT programmes.
- e) Ensure affordable access to ICTs by people living with disabilities and people with special needs.

19 e-Commerce

e-Commerce is the buying and selling of products or services over electronic systems such as the Internet and other computer networks. Electronic commerce draws on such technologies as electronic funds transfer, supply chain management, Internet marketing, online transaction

processing, Electronic Data Interchange (EDI), and automated data collection systems. Modern electronic commerce typically uses the World Wide Web at least at one point in the transaction's life-cycle, although it may encompass a wider range of technologies such as e-mail, mobile devices and telephones.

19.1 Policy Statements: e-Commerce Development and Implementation

- a) Create and expand a conducive and enabling environment for e-commerce.
- b) Cultivate an e-commerce culture, which fosters competitiveness and cost-effectiveness especially among SMEs in national, regional and international transactions.
- c) Promote local and international smart partnerships in e-commerce.
- d) Develop, implement and promote appropriate security and legal systems for e-commerce including issues related to cyber security, data protection and e-transactions.
- e) Introduce a policy on ICT consumer protection.
- f) Enable the development of legislation, regulations and policies and programs for the following:
e-Health, e-Agriculture, e-Manufacturing, e-Transport, e-Tourism and e-Mining.

20 Social Networks

A number of social networks have emerged in the recent past and these have had great impact on the way information is relayed in the global village. There are advantages and disadvantages of social networks. The advantages relate to maintaining communication and the possibility to reunite friends and relatives whose contacts may have been long lost.

20.1 Policy Statements: Leverage Social Networks as an ICT Platform

- a) Promote and encourage public education on the effect of responsible and irresponsible use of social networks and other applications for socio-economic and political purposes.
- b) Encourage the development of local social network platforms.
- c) Ensure availability of local capacity to snuff out undesirable social content.

21 ICT Research and Development

Current research endeavours are characterised by attachment of students from universities to the Research Council of Zimbabwe (RCZ) and the Scientific and Industrial Research and Development Corporation (SIRDC). The Harare Institute of Technology has some of its students attached to the Republic of Korea whilst private companies operate in isolation for direct clients. There are no concerted efforts to link institutional research with industry. Zimbabwe is lagging behind in technology research and development.

21.1 Policy Statements

- a) Promote legislative measures for a procurement quota system on locally developed solutions.
- b) Promote collaboration at national and regional levels among research institutions.
- c) Facilitate the establishment of ICT incubator facilities.
- d) Provide tax incentives for innovative ICT companies and those that take students on industrial attachment that is connected with research and innovation.
- e) A percentage of ICT products and services sales revenue should be channelled towards research.
- f) The Universal Services Fund must offer research grants to high school, college and University students.

22 Cyber Security and Other ICT Legislative Initiatives

22.1 Policy Statement: Implement Cyber laws and ICT Legislative Provisions

Policy on the enactment of the necessary cyber laws and legislative provisions:

- a) Develop the information economy and society that will be facilitated by necessary legal and legislative provisions.
- b) Administer the enactment of the necessary cyber laws and legislative provisions to govern and regulate cyber-related activities in the country.
- c) Put in place the necessary legislation to facilitate electronic commerce.
- d) Facilitate the enactment of laws relating to intellectual property rights, data protection and security, freedom of access to information, computer related and cybercrime laws, i.e.
 - Adopt data protection and privacy
 - Intellectual property protection and copyright
 - Consumer protection
 - Child online protection.

20.2 Policy Statement: Postal and Courier services

To cover future plans related to Zimbabwe's postal and courier services, market structure and competition, National Address System, Zimbabwe Post Office infrastructure, Universal service and access and postal services generally there is need to develop and periodically review its Postal Sector Policy.

23 Institutional Arrangements

23.1 SEPs Transformation

The ICT SEPs require transformation to increase growth, profitability and to pay dividends to the shareholder. Currently the SEPs are getting less than 30% of the total revenue in the market and are performing at levels substantially below the privately owned competitors. The SEPs are a critical success factor in policy implementation.

Scope of Works

The following guidelines will be used in developing the scope of work:

- a) Explore and execute opportunities to optimise the operating models to increase and create market critical mass and economies of scale;
- b) Explore capital expenditure optimisation and infrastructure sharing opportunities;
- c) Implement transformation projects to create performance driven culture, accountability for results, business efficiencies; and
- d) Facilitate exemptions from specific public sector policies to enable SEPs to compete with private sector.

23.2 e-Government Rollout for Health, Education, Home Affairs and PFMS

The overall objective is to prepare a strategy, and to coordinate all projects managed by the different entities involved in the overall national e-governance programme.

Scope of Works

- a) Preparation and sign-off of the national strategy and implementation Blueprint; and
- b) Implementation of e-Government in selected sectors or departments. The Health, Home Affairs, Education and PFMS are the most feasible to start with.

23.3 The National Backbone Company

Currently there are several ICT SEPs providing Internet backbone services which leads to duplication of investment, sub-optimal coordination and ultimately higher prices to end users. The Ministry of ICTPCS will seek to consolidate all Internet backbone assets in a single company. The starting point will be to transfer all relevant existing assets into a single company with a shareholding proportional to the assets contribution by the entities involved.

The Government has long stated its policy for a single gateway operator. In order to coordinate the proliferation of international gateways and stem revenue losses, there shall be one Super Gateway which shall be the entry and exit point for all international traffic.

23.4 Innovation and Entrepreneurship Hubs

The key driver for ICT is innovation to transform lives and grow economies. The ultimate objective is to develop Zimbabwe into a regional ICT innovation hub modelled around the acclaimed success models from India, Russia, Malaysia and other technologically advanced friendly states.

Scope of Works

- a) Setting up the institutional framework for a national program to successfully implement innovation and entrepreneurship programs;
- b) Defining a comprehensive blueprint for the program;
- c) Securing the seed infrastructure, tools and facilities required to kick-start the program; and
- d) Coordinating and facilitating the initial launch.
- e) Offering citizenship to investors who make defined and significant investments into Zimbabwe's ICT industry. This strategy is meant to position Zimbabwe as a regional information and communications technology (ICT) hub as part of its overall strategy to develop as a knowledge-based economy in the 21st century.
- f) The ICT services industry, including software, content, and ICT services, comprises so-called 'weightless' economic items that involve little or no trade cost. The ICT services industry will feature prominently in Zimbabwe's future economic development, and this policy statement seeks to recognise this growing importance.
- g) "Today, to Out-Compute is to Out-Compete". The Government of Zimbabwe therefore intends to promote the use of High-Performance Computing (HPC). HPC is without doubt a key enabling technology for many technologically advanced nations in the 21st century. Many countries world-wide are investing in HPC and this policy will promote investments in related infrastructure.

Implementation strategies

A broad-based program that includes all citizens will be started. The ICT SEPs will play a critical role in providing commercial services and infrastructure for Innovation. The ICT SEPs will use some of the outputs for Innovation as services. The strategies include:

- Partnerships with leading ICT countries.
- Partnerships with organisations such as ITU, Silicon Valley, Global System for Mobile Communication (GSMA), India, China, Russia, Malaysia and other ICT advanced countries.
- Partnerships with Foundations and Non-Governmental Organisations (NGOs) which actively promote and fund ICT.
- Attracting Skills – Offer Citizenships to ICT experts, market at Universities, offer PhD research benefits, for example a fund to start business upon graduation.
- Launch regional ICT innovation and entrepreneurship projects which, are done by teams or partnerships across borders to create critical mass, share ideas and increase the degree of innovation. SADC and AU based projects may be a starting point.

- Acquire buildings that will be set as hub centres.
- Use the broadband connectivity programs to provide access to all stakeholders.
- Work with the Ministry of education to ensure there is ICT subjects and courses offered

23.5 National Data Centre

The National Data Centre is a critical common infrastructure that should be provided by the government. It can be designed to support both public and high security services and information.

Scope of Work

The scope of work of work includes:

- a) Setting up the legal and regulatory framework for the National Data Centre
- b) Developing the business and technical blueprint
- c) Implementation of the basic system
- d) Rollout of services

23.6 Global and Regional Partnerships

The project aims at ensuring the country achieves active participation and leadership in the ICT industry regional and international institutional bodies, conferences and workshops. Zimbabwe should be at the forefront of ICT activities to ensure that the national agenda leverages the global capacity, resources, networks and developments.

Implementation strategies

Ultimately Zimbabwe will plan and host strategic conferences that should be ground breaking and there should be actionable outcomes that will propel the country to new heights. The ICT policy implementation should significantly leverage these regional and global platforms. It is recommended that a partner that has the capacity and skills to manage such programs be appointed.

23.7 Policies and Regulatory Frameworks for ICT Growth

There are quite a few policy imperatives that require the legal and regulatory provisions to be in place so that stakeholders can function.

Scope of Work

- a) Funding and investment - work with Home Affairs to create a provision to give citizenships to foreigners who bring investment into ICT;
- b) Infrastructure sharing – Government to draft the legal and regulatory framework;
- c) MVNO – Government to draft the legal and regulatory framework; and
- d) Mobile Number Portability - Government to draft the legal and regulatory framework.

24 Policy Implementation / Governance

The policy planning shall incorporate monitoring and evaluation mechanisms that allow for appropriate intervention procedures and actions with clear guidelines on how and when these can be activated, and by which agency or authority.

24.1 Stakeholder Engagement and Communications Plan

There is a fundamental need to mobilize key national stakeholders and the public to be part of the exercise to formulating and implementing policies, strategies and plans. The governments cannot go it alone in carrying out this national exercise. Other stakeholders need to be part of the process to build consensus and encourage national mobilization and participation. Apart from the private sector, other key stakeholders, including the media, NGOs, labour unions, academics and other sections in the civil society need to contribute to the process.

The Ministry will set up the following to enable stakeholder engagement:

- a) National advisory committees
- b) Publicity platform and resources
- c) Information sharing platforms
- d) Platform to allow interested people to engage on the Policy

The National Advisory Committee is a team of dedicated policy decision makers and professionals, cutting across the public and private sector.

25 Specific Institutions with Roles in Implementing ICT Development Strategy

25.1 The Executive

The various Government structures; legislature, judiciary; the business community, civic organisations and research and academic institutions have critical roles to play in the implementation of the ICT policy whilst some of the roles will be coordinated through respective Government ministries.

As the driver of this policy, the Government facilitate the participation of sector specific institutions by ensuring that capacity building measures in those institutions are put in place.

25.2 Parliament

Parliament needs to:-

- a) Advocate for the allocation and timely availing of financial resources to sustain implementation of the ICT policy;
- b) Promote and monitor effective utilisation of resources in implementing the ICT policy;
- c) Ensure good governance principles are applied in implementing the ICT policy;
- d) Enact and periodically review legislation governing ICTs in line with current trends; and

- e) Assume a leadership role in the usage of new technologies.

25.3 **The Judiciary**

The judiciary needs to interpret the laws that govern the use of ICTs and to effectively achieve this, there is need for them to not only embrace the knowledge but make use of ICTs in their daily affairs. With the continuous growth of the ICT sector, it is expected that disputes and conflicts will arise. Judges and Magistrates need to be ably capacitated to deal with issues relating to jurisdiction with respect to broadband disputes. Cybercrime and other technologically enhanced crimes are some of the topics judges need to be ready to handle in court.

It is, therefore, recommended that the judiciary and other law enforcement agencies, with the assistance of the ministries responsible for ICTs and education, embark on a process that capacitates and educates the incumbents in ICTs.

25.4 **Regulators**

It is incumbent on the converged ICT regulator to play the leading role in the management of ICT resources. There are other players in the ICT field and as such there are regulatory areas that involve more than a single regulatory body. It is the responsibility of regulators of competent jurisdiction in each sector to ensure that the ICT development and management guidelines of this Policy are followed. In order to achieve these policy objectives the converged ICT regulator should play the leading role in information sharing on ICT legislation, regulation and policy.

25.5 **Research Institutions**

Research Institutions should:-

- a) Expand and consolidate research and development in the use of ICTs;
- b) Use ICTs to extend scientific and research facilities taking advantage of the Internet;
- c) Assume leadership in development and testing of new technologies;
- d) Create networked and multidisciplinary research teams on ICTs; and
- e) Initiate and support ICT innovation and incubation, technology transfer and adaptation.

25.6 **Civic Society**

The role of the civic society is to:-

- a) Provide advocacy and funding for the use of ICTs by vulnerable groups and those in marginalised communities such as the rural areas;
- b) Complement Government efforts to develop and use ICTs in all sectors of society; and
- c) Advocate for equitable distribution of ICT resources to allow public access and use
Organise awareness campaigns on the use of ICTs.

26 Conclusion

This policy recognises that ICTs contribute significantly to the reduction of social, political and economic inequalities, increase national productivity, and enhance wealth creation and entrepreneurship and increase efficiency in public administration. ICTs also strengthen democratic values and promote gender equality and the interest of marginalised groups.

The policy further recognises that in order for ICTs to act as an effective catalyst for national development, upgrading and substantial investment in high broadband ICT infrastructure and capacity buildings as well as enabling institutional arrangements are a prerequisite.

The ICT policy also seeks to ensure that private sector interests and expertise create investment in which the ICT sector generates jobs, increases national productivity and empowers citizens through the amplification of choices brought by unfettered connectivity.

Existing and new public and private sector institutions across all sectors of the economy are expected to formulate sector based strategies/programmes to implement ICT flagship projects. Such projects would, inter alia, promote awareness of the benefits of ICTs, develop human skills in ICTs, enhance research and training capability, demonstrate the benefits of public sector leadership and encourage public-private partnerships.

Result

Actions

Outcomes

A Strong Foundation for ICT Development	Review Institutional Framework. Promote Stakeholder participation. Build Human Capacity. Enhance Infrastructure. Ensure Security and Resilience of Infrastructure. Consumer Education and Protection to Enhance and Maintain Trust in use of ICTs. Define and Implement Innovative Financing Mechanisms, including ICT Industry Stimuli. Monitoring and Evaluation.	<ul style="list-style-type: none">• Ubiquitous Coverage with National Backbone.• Converged Institutions in Place. • An ICT literate workforce• ICT Integrated in National Curriculum• Secure, Reliable and Resilient Infrastructure and Mechanisms and Processes with National Capacity to Respond to Cyber Security Threats• Mechanisms in Place for Education and Protection of Consumers of ICT Services • Monitoring and Evaluation in Place and used to Track and Measure the Progress of Implementation.
An Enabling Environment for ICT Growth	Holistic Approach and Vision towards Legal and Regulatory Framework. Efficiency in Coordination, Planning, Investment, Implementation and Utilization of ICT Infrastructure and Services. Innovation and Partnerships	<ul style="list-style-type: none">• ICT Integrated in National Development Plan cross the Sectors. • Accessibility and Affordability of ICT Devices and Services.• Inclusive Consultation and Participation of Interested Stakeholders in Process• Growth in Government Services Online. • Increase in Sustainable ICT projects.

	<p>Sustainability.</p> <p>Promote and Attract Investment.</p> <p>Training, Especially for Youth.</p> <p>Entrepreneurship in ICT.</p>	<ul style="list-style-type: none"> • ICT SME and Incubator Growth • Increased Investment in ICT Infrastructure and Services • Development of ICT Enabled Services among Citizens Promoted
ICTs as an Engine for Economic and Social Growth	<p>Inclusiveness.</p> <p>Zim-ASSET.</p> <p>Promoting e-Services to Achieve Growth.</p> <p>Local Content Promotion.</p> <p>Community participation and outreach.</p>	<ul style="list-style-type: none"> • Digital Literacy of Population. • e-Accessibility as Part of National Vision. • Effective Government and e-applications. • Locally Grown Solutions in Languages. • ICT Devices & Services are Available and Affordable to Majority of Population.
Leadership and Innovation	<p>ICT Industry Awareness and Promotion in Target Markets.</p> <p>Promoting Innovation through ICTs.</p>	<ul style="list-style-type: none"> • Growth in ICT Products. • Research and Development Programmes Launched.

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