



Republic of Botswana

MINISTRY OF COMMUNICATION, SCIENCE AND TECHNOLOGY

**DRAFT
NATIONAL INFORMATION AND COMMUNICATIONS
TECHNOLOGY POLICY**

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FOREWORD

- i. The National Information and Communications Technology Policy provides Botswana with a clear and compelling roadmap that will drive social, economic, cultural and political transformation through the effective use of Information and Communications Technology (ICT) in the years ahead. The Policy complements and builds upon Vision 2016 and provides many of the key strategies essential for achieving Botswana's national development targets.
- ii. The National ICT Policy has been designed to provide *all* Botswana with new and exciting opportunities in the era of global connectivity. There are roles and benefits for everyone.
- iii. Over the coming years, Botswana must become a nation that maximises the power, reach, versatility and innovation of ICT. This will enable the country to secure a key position in the emerging global information society, and flourish economically throughout the new millennium. As a result, a primary focus of the Policy is the development of ICT-related skills in children and young adults. It will be this segment of society that benefits most from increased levels of connectivity, and it will be their ICT skills and expertise that chart a new and exciting course for our country.
- iv. National connectivity will help draw communities closer together and facilitate economic growth and development in all regions of the country. All Botswana will be provided with access to information that will assist them in their everyday lives. On-line information on employment, community development, healthcare, education and government services all feature prominently in the Policy's recommendations. Increased levels of e-Commerce will enable local companies to compete equally in the global marketplace, and the development of a vibrant and entrepreneurial ICT sector will create further employment, greater economic diversification and boost investor confidence.
- v. The National ICT Policy provides Botswana with limitless possibilities – and few boundaries. All segments of society – the public sector, industry, and civil society – must now work together to seize the unprecedented opportunity that lies in front of us.
- vi. The National ICT Policy has been completed with the assistance of approximately one thousand people from all segments of society and all parts of the country. It truly is a national undertaking. Special acknowledgement should be given to the seven Task Force committees, who gave up their valuable time to create the various key programmes and recommendations that facilitated the development of this Policy document.
- vii. An ICT Legislative Framework has been produced. It presents a review of legislation in Botswana and identifies actions to be taken to amend laws and introduce structures that will enable a secure and trusted legal environment which adequately supports and protects increased levels of electronic interaction.
- viii. The National ICT Policy should be read in conjunction with other current policies of the Government of Botswana, such as the National Settlement Policy.

1 BACKGROUND

1.1 The Government of Botswana is committed to developing a National Information and Communications Technology (ICT) Policy that will be a vehicle for change and assist in achieving Vision 2016 and other national development targets. It is envisioned that the Policy will position Botswana for sustained growth in the digital age by serving as a key catalyst in achieving social, economic, political and cultural transformation within the country.

1.2 The development of the National ICT Policy actively involved a wide range of participants from the public and private sectors, and civil society. A National Steering Committee and seven Task Forces, comprising of experts from around the country, were established to assist with this important effort. The Task Forces were tasked with examining effective application of ICT in the following areas:

- Community Access & Development
- Government
- Learning
- Health
- Economic Development & Growth of the ICT Sector
- Infrastructure & Security
- Legislation & Policy

2 NATIONAL ICT VISION GOALS AND OBJECTIVES

2.1 Listed below are the National ICT Vision, Goals and Objectives that were developed by the Steering Committee, seven Task Forces and key stakeholders to guide the National ICT Policy development process.

2.2 National ICT Vision

“Botswana will be a globally competitive, knowledge and information society where lasting improvement in social, economic and cultural development is achieved through effective use of ICT”.

2.3 National ICT Goals

2.3.1 Creation of an enabling environment for the growth of an ICT industry in the country;

2.3.2 Provision of universal service and access to information and communication facilities in the country; and

2.3.3 Making Botswana a Regional ICT Hub so as to empower Botswana and to make the country’s service sector globally competitive.

2.4 National ICT Objectives

2.4.1 A culture of lifelong learning that maximises the potential within all citizens and accelerates innovation to develop knowledge based system;

2.4.2 Government services available electronically;

2.4.3 Increased economic diversification and foreign investment, including ICT enabled services based in Botswana;

2.4.4 Access to relevant, localised and understandable information for all citizens;

2.4.5 An ICT access point in every village;

2.4.6 Enhanced disease control and health care programmes;

2.4.7 An efficient and cost-effective ICT infrastructure in place; and

2.4.8 A clear ICT legal framework in place.

3 BENCHMARKING AND E-READINESS ASSESSMENTS

- 3.1 Formal ICT Benchmarking and e-Readiness Assessments were conducted in June of 2004. These studies were invaluable in helping to determine the current state of ICT diffusion in Botswana and thereby clearly identifying the level of effort required to achieve the National ICT Vision, Goals and Objectives.
- 3.2 The results of the Benchmarking and e-Readiness Assessments indicate that Botswana has good levels of technical infrastructure and supporting legislation in place, providing the country with a solid foundation for accelerating an integrated National ICT agenda. As Botswana is currently in the early stages of its national ICT programme, levels of ICT's in homes, communities and businesses are modest, and ICT's in healthcare, education and government remain in their formative stages.
- 3.3 A survey of the ICT market was finalised in November 2004, to support the e-Readiness Assessment. The survey indicated that annual ICT expenditure in Botswana is approaching 1 Billion Pula. About 250 Million Pula per annum coming from government sector and about 750 Million Pula per annum coming from other sectors. This is very encouraging and demonstrates significant domestic demand for ICT products and services. Based on this impressive internal demand for ICT products and services, the National ICT Policy stresses the urgency for increased domestic development of specialised ICT skills, and the need for on-the-job training to build human resource capacity and ensure that young graduates have a career path in Botswana's emerging ICT sector. The national drive for increased citizen empowerment and employment is very important in this regard and must be factored into the implementation strategy of the Policy to guarantee that significant revenues remain within the country.

4 ICT LEGAL FRAMEWORK

An ICT Legal Framework has been produced. The Framework provides a review of current legislation in Botswana and identifies appropriate policy actions that need to be taken to establish a trusted and secure e-Commerce, e-health, e-learning (Thuto Net) and e-Government environment.

5 DEVELOPING BOTSWANA'S NATIONAL ICT POLICY

- 5.1 Botswana's National ICT Policy was developed in 2005. The rapid progress and level of inclusiveness reflect the importance of this national endeavour and Government's commitment to utilising ICT as a vehicle for achieving Vision 2016 and national development targets.
- 5.2 The Policy has been developed after an extensive consultation with the people of Botswana, identifying their information needs and priorities and listening carefully to their concerns and aspirations. To date, over twelve hundred people representing a cross section of our society have been engaged in the development of this Policy. It is truly a national effort.
- 5.3 Each of the seven ICT Task Forces developed key programmes that lay out a series of far-reaching initiatives which provide the foundation for this Policy. These key programmes are all inter-related and inter-dependent, together they form a comprehensive and bold plan that positions Botswana for great success in the digital age.
- 5.4 This Policy is an ambitious plan that attempts to coordinate and integrate all ICT initiatives into a common direction. As with all such plans there are many opportunities – accompanied by many challenges. The ICT recommendations laid out within this Policy are specific, measurable, achievable and realistic. All of the recommended programmes and projects are based on successful ICT initiatives found in other parts of the world. The Policy is very thorough, however there will undoubtedly be some areas that require further research and refinement as the various initiatives are designed and implemented.

6 POLICY RECOMMENDATIONS

6.1 The following pages provide principles and examples that will support the proposed key programmes and projects within Botswana's National ICT Policy.

6.2 Connecting Communities Programme

6.2.1 A key goal of the *Connecting Communities Programme* is to provide residents of rural, remote and urban communities with affordable access to computers and the Internet – especially those people who might not have computers or Internet access in their homes or workplaces.

6.2.2 The *Connecting Communities Programme* will establish *Community Access Centres* (CAC's) in every part of the country. These Centres will provide everyone in the community with an on-ramp to the Internet and access to a broad range of information and services. Situated wherever possible in schools and libraries to reduce cost and leverage investment, CAC's will help everyone, wherever they live, take advantage of emerging opportunities in the new global knowledge-based economy. Each CAC will be designed around the specific needs of the community and provide modern computers, each with high-speed Internet connectivity. The Centres will be designed to provide "universal access" – catering for all members of society, including those with physical, mobility and learning disabilities.

6.2.3 All CAC users will be provided with access to a wide variety of on-line information sources including:

- Local and community information and services;
- Information regarding jobs, health, education, livelihoods etc.;

- Government information and services such as school registration, benefits, birth certificates, passport applications, livestock tracking etc.;
- On-line learning;
- Business information and services – especially for start-up and small businesses;
- Information specifically tailored to the needs of children, senior citizens and young mothers; and
- Simplified links to communicate with family and friends abroad.

6.2.4 CAC users will be assisted by young adults from the *Student Connection* and *Net Corps* initiatives as outlined in the ICT and Economic Diversification key programmes. These specially trained young adults will provide high quality services and advice in a number of areas such as computer training, Internet training, e-Commerce training, technical assistance for small businesses, website design, troubleshooting etc. The *Student Connection* and *Net Corps* initiatives will not only help build new skills in the local population and workforce but they will also create entry-level employment opportunities that can translate into sustaining employment in the ICT sector – a key element of the National ICT Policy.

6.2.5 To help stimulate ICT take-up and adoption, Government will carry out a thorough review of various fiscal incentives in an effort to make ICT's both attractive and affordable. These incentives will look to reduce the overall cost of purchasing ICT's and provide tax benefits for companies in the ICT field – particularly new businesses or SME's. In addition, a high quality promotion and awareness campaign will be created to encourage all citizens to embrace ICT and “get-on-line”. Separate campaigns for each segment of society (youth, young parents, consumers, businesses, senior citizens etc.) will be designed to ensure maximum effect.

6.3 Government-On-Line

- 6.3.1 The Government of Botswana is transforming itself for the digital age and will introduce a major *Service Delivery Reform Programme* aimed at improving service quality, reducing red-tape and realising greater efficiencies in the public service. A major e-Government initiative will also be established, which will serve as a catalyst to the transformation.
- 6.3.2 Government will simplify access and service delivery by developing a world-class *e-Government Portal*. The Portal will be designed around the needs of client groups, making the organisational structure of government more transparent to citizens and business. The portal will incorporate a number of client-specific gateways – for citizens, businesses, public servants and visitors. e - Government represents a radically new way for Government to interact with its constituents, clients and partners. It extends the “reach” of Government and provides everyone with access to information and services, from virtually any location, and at any time. As well as enabling users to access services from their homes or offices via the Internet, Government services will also be available on-line from Community Access Centres, kiosks placed in shopping centres and strategically placed terminals located in Government offices. In addition, a major feasibility review of telephone-based Government services will be carried out.
- 6.3.3 Over time, all appropriate Government information will be made available on-line – placing particular prominence on topics such as jobs, education, health and advice for small business. On-line information will be made available in both English and Setswana.
- 6.3.4 In addition, all Government services, that are appropriate for on-line delivery, will be available over the Internet. For citizens, early on-line services will include

license applications, on-line payments, school registration, OMANG and passport applications etc. Early candidates for electronic service delivery to businesses are company registration, tax submissions, micro-credit applications and export advice. Visitors to Botswana will use the e-Government portal to access information and services on matters such as tourism and investment opportunities.

6.3.5 As Government moves more of its service offerings on-line it will also look towards improving service quality and internal efficiencies by reengineering and standardising its business processes, rationalising organisational structures and introducing enterprise-wide technologies such as finance, document management and customer relationship management solutions. These initiatives will be coordinated in the context of a *Federated Architecture Model* for Government. This initiative will provide a common Information Management/Information Technology (IM/IT) blueprint for Government promoting interoperability, reducing unnecessary costs and allowing for the sharing and reuse of information. The *Federated Architecture Model* will also provide for greater efficiencies within Government, providing the standards, guidelines and policies needed for full and secure information exchange between and among ministries and agencies.

6.3.6 A major *Human Resource Development* initiative to train government employees for increased levels of electronic service will be introduced. In addition to teaching technical skills in support of e-Government, this initiative will also look at enhancing customer service qualities in staff. This will be particularly important as more transactions become automated and Government staff move towards consultative and decision-making roles rather than transactional and administrative duties. All Government employees are to receive formal e-Government and Customer Service Training within one year of joining the public service.

6.4 *Thuto Net*

6.4.1 The importance of *Thuto Net* cannot be overemphasised. Many of the other ICT programmes will provide significant benefits; however sustainable ICT-driven transformation and national growth will only be achieved through the development of local skills and expertise – with a particular emphasis on the development of ICT skills in children and young adults. In order for Botswana to achieve the goal of a “knowledge-based society” as outlined in Vision 2016, Government will expose children to highly effective education in ICT – and other subjects required for success in the digital age – such as science and engineering.

6.4.2 An efficient infrastructure connecting all schools and learning centres must be accessible, affordable, and fast and offer reliable network services in order to successfully implement the recommended *Thuto Net* programmes. This analysis will be undertaken as part of the *School Connectivity Initiative*. It must be clearly understood that achieving universal school connectivity will be a long, difficult and expensive task in a country where many services are not readily available. At the most fundamental level, the essential ICT infrastructure components are electricity, computers and network services, telecommunication services, Internet connectivity and technical support. All of these components will be provided to all schools as part of the *Thuto Net* programme.

6.4.3 Effective ICT driven innovation in the classroom requires a basic minimum transmission speed of about 128 kbps per networked computer. This means that schools with about 80 students and up require network access at broadband levels, while schools with smaller populations can rely more on narrowband delivery. These sophisticated levels of school connectivity will be provided through a central educational network, which builds upon the Government Data Network (GDN) that is currently in place. This infrastructure will support the Education Information System (EIS) functions currently being implemented. Wherever

practical, dark fibre networks will be used in support of school connectivity. They offer enormous bandwidth that is able to accommodate all present and foreseeable needs for educational ICT use.

6.4.4 In addition to school connectivity, all public libraries will be provided with modern computers and high speed Internet connection.

6.4.5 Providing students with greater access to schoolroom computers will facilitate skills development and help prepare them for life and work in the digital economy. A study will be undertaken to determine the most appropriate computer to student ratio for adoption at all levels of the educational system.

6.4.6 The *Computers for Schools (CFS) Programme* will also examine the feasibility of Government and private sector organisations “donating” surplus computers for use in schools and communities. The use of recycled computers also provides an opportunity for on-the-job experience for recent IT graduates working in specialised refurbishing/training centres. School-based computer repair workshops can also be incorporated into the general curriculum providing real-world skills and entry-level employment opportunities for students.

6.4.7 Another critical component of ICT-enhanced education will be the professional training and support of school heads, school IT managers and teachers so that they have a greater understanding of ICT and how it can be use both as a classroom tool and as educational content. The first phase of the *Professional Development Programme* will be the training of a group of teachers and school administrators who will serve as ICT managers/coaches in their respective schools. An intensive training programme, focused on basic computer use and maintenance, the use of the Internet and school network, and basic ICT education will then follow. Later phases of the *Professional Development Programme* will seek to broaden the

number of teachers and administrators who have basic ICT skills and to integrate ICT's into all aspects of the curriculum and educational management system.

6.4.8 *Thuto Net* recommends that ICT be introduced to school children at the earliest possible age and formalised into the general curriculum so that children acquire ICT skills throughout their academic development. The planned development of a second university in Botswana comes at a most opportune time. It is recommended that the focus of this university be centred on the development of ICT-related skills and expertise. It is strongly proposed that world-leading programmes in science, technology, engineering and business be at the core of the university's subject offerings.

6.4.9 Generating new and additional ICT skills in the adult population is also an important component of the *Thuto Net* programme. There will be a range of initiatives aimed at training and job creation for those outside of the formal educational system – with a focus on the development of skills in adults. For example, *Job Net* is a project that will coordinate with existing programmes to create a network of on-line services and tools aimed at helping employers and job seekers use the Internet for recruitment, career, labour information and learning. In addition to the adult training and education offered at *Community Access Centres*, local businesses and private sector training organisations will be encouraged to offer greater levels of ICT training. Major employers and providers of distance learning will work with Government to examine the financial and ICT architecture needed for the development of a national life-long-learning model for Botswana.

6.5 e - Health Botswana

6.5.1 This critical programme is aimed at providing better healthcare by transforming health systems and business practices through the investments in and more comprehensive use of ICT's in order to increase quality, safety, timeliness and efficiency of health services to all Batswana.

6.5.2 The *e-Health Botswana Programme* will be enabled through four major initiatives:

- a. *Building a Strong Foundation for e-Health*. This initiative will establish an *e-Health Council* for providing national leadership and sponsorship for e-Health projects across the health system. It will also review legislation and policy to address privacy concerns relating to personal health information stored and managed in electronic form. In addition, this initiative will identify the necessary technical infrastructure, integration requirements and supporting standards required to support the e-Health Botswana programme.
- b. *Enabling Clinicians to Deliver Excellent Patient Care* will provide professionals across the health care system with ICT-based tools and systems so that they are better enabled to deliver top-class patient care. Accelerated implementation of the Electronic or Computerised Patient Management System and a sizeable investment in *Professional Development and Change Management* for health care specialists, including a review of health-related curriculum in academic institutions will be undertaken.
- c. *Improving Access to Health Services and Information* is a key component of e-Health Botswana. It recommends a series of projects that are to be undertaken and that will improve the access of Batswana to both services and information that will help them make informed decisions about their health. Programmes range from expanded use of radio and television healthcare

messages to a *Health Portal* that will be incorporated into the e-Government site. A *Tele health* initiative will provide patients with access to nurses via the telephone. In future years, more sophisticated *Telemedicine* services will be introduced allowing patient/physician consultation over a wide range of technologies.

- d. *A National Health Surveillance Network* is also to be introduced to assist Government's ability to manage and improve the health system and the health of the population by systematically identifying emerging issues and monitoring the effectiveness of intervention strategies.

6.6 *ICT and Economic Diversification*

6.6.1 ICT has the potential to create significant employment growth through private sector development in Botswana and provide an important diversification strategy from non-renewable resource extraction.

6.6.2 A primary thrust of the ICT and Economic Diversification programmes is the extended use of ICT to enhance operations at the International Financial Services Centre (IFSC) and to support the introduction and growth of Business Process Outsourcing (BPO) within Botswana. Although the economic upside to this endeavour is extremely positive, there are considerable challenges in areas such as lack of skilled workers, lack of call centre management expertise and inadequate physical infrastructure. These challenges are very similar to those mentioned in other ICT key programmes and highlight the critical need for continuous investment in infrastructure, education and skills development.

6.6.3 The quality and reliability of Botswana's technical infrastructure will be a decisive factor in attracting new IFSC and BPO investment. Improvements in its

telecommunications infrastructure as proposed in the *Connecting Botswana* programme come at a timely juncture.

- 6.6.4 Traditional industries will also be strengthened through increased levels of ICT. A *Network of Agricultural Extension Agents* will be strengthened to provide farmers across Botswana with timely information that will assist with productivity, sales and marketing, distribution and disease prevention.
- 6.6.5 Significant improvements can also be achieved in Botswana's tourism industry. A sophisticated *National Tourism Portal* is to be implemented. The portal will secure far greater tourism revenue for the country.
- 6.6.6 The *Student Connections* programme will place specially trained students from university or community colleges in small businesses or non-profit organisations to assist with the adoption of ICT's. The companies will benefit from increased understanding and better use of ICT's. In return, the students, who will be paid for their services, will gain valuable job experience. In conjunction with *Student Connections*, a programme of specialised ICT training for company Chief Information Officers (CIO's) and senior managers is also to be designed. This programme will help senior business people better understand how ICT's and the Internet can be effectively applied as business tools to increase productivity, profitability and organisational effectiveness. This programme will also serve as another important step in developing local capacity and empowerment.
- 6.6.7 Helping small businesses become e-businesses is a key component of the National ICT Policy. In addition to the training and support that will be offered by initiatives such as the *Connecting Communities Programme* and *Student Connections*, the *e-Government Portal* will also provide a special area specifically tailored to the needs of small business including practical advice and tools for

business start-up, company registration, developing an effective website, using the Internet as a business tool and a service to connect potential buyers and suppliers.

- 6.6.8 Botswana's drive for increased levels of connectivity in schools, communities and Government will result in growth opportunities for local suppliers of computers, software, Internet, installation and repair services, consulting support and training. These small businesses will feed larger domestic companies, collectively creating many hundreds of new employment positions in the local marketplace. Clear conditions for participation into the liberalised telecommunications sector will also provide new entrants with both the confidence and tools to compete and prosper in this expanding market, also providing new business and employment potential. It is anticipated that the injection of the National ICT Policy initiatives will significantly increase the size of Botswana's ICT sector. A monitoring and evaluation programme will be designed to measure economic growth and the numbers of new jobs in the domestic ICT sector.

6.7 Connecting Botswana

- 6.7.1 *Connecting Botswana* outlines a series of initiatives aimed at developing and strengthening Botswana's technical infrastructure so that it can support the various programmes and projects that feature in this ICT Policy. Such initiatives must include government, the private sector and local communities – and encourage greater levels of entrepreneurship and citizen empowerment.

- 6.7.2 A major *Infrastructure Enhancement Programme* has been identified as a fast-track initiative. This will commence with an analysis of all ICT requirements from a deployment, quality and standards perspective. The various programme needs will then be assessed and appropriate technologies identified. This will result in an *Architectural Blueprint* for the entire suite of ICT initiatives. The analysis will

- also recommend infrastructure sustainability strategies to support, maintain and grow the ICT infrastructure beyond an initial five-year window.
- 6.7.3 In addition to assisting with the legal and contractual elements of telecommunications liberalisation, a review of the numerous consulting reports regarding increased levels of telecommunications competition will be consolidated into a clear and cohesive strategy. This will help ensure that the entire industry is clear with the direction that is being taken.
- 6.7.4 Coordination between the various telecommunications and technology agencies will be introduced. This will analyse all ongoing projects and plans, examine new and emerging technologies, prepare deployment strategies, oversee the most effective rollout plans and monitor network performance as Botswana's National ICT Policy is implemented.
- 6.7.5 There is a need to ensure that there is always a "future-oriented" infrastructure platform under development. Technical expertise will be identified to advise on new telecommunication technologies such as Broadband, Wireless and Satellite. These technologies will become increasingly important over the next few years, as the ICT agenda matures and enhanced infrastructure will be required to support more sophisticated and data-rich ICT applications such as health, education and entertainment. The Advisory Body will also advise on topics such as on-line security, Public Key Infrastructure, Open Source Software and standards development.
- 6.7.6 A thorough *Security and Privacy Review* will be carried out to ensure that appropriate policies, procedures, international standards and technologies are put in place to ensure a coherent ICT security environment.
- 6.7.7 A comprehensive training programme is also recommended, with particular emphasis placed on the development of *Network and Technical Support Skills*

such as network design, service acceptance, network management, hardware and software support techniques, customer service etc.

6.8 Connectivity Laws and Policies

- 6.8.1 An ICT Legal Framework has been produced as a companion to the National ICT Policy. The Framework provides a review of current legislation in Botswana and identifies appropriate policy actions that need to be taken to establish a trusted and secure electronic environment. In determining priorities, the Legal and Policy Task Force took into account the legal initiatives that would be needed to provide the basic rights and protections that citizens would require in a connected world, as well as the legal structures that would be needed to implement the recommendations of other ICT programmes.
- 6.8.2 Increased levels of e-Commerce will enable local companies to compete equally in the global marketplace, and the development of a vibrant and entrepreneurial ICT sector will create further employment, greater economic diversification and boost investor confidence. Lack of proper ICT legislation will be a hindrance, prevent domestic growth and deter foreign investors.
- 6.8.3 Prior to the formulation of the ICT Legal Framework, a jurisdictional review of ICT enabling legislation was carried out. This represents merely a quick “tour d’horizon” of the world of e-legislation to ensure that Botswana’s e-legislation is at harmony with the world.
- 6.8.4 There are parallel policy initiatives that are currently underway in Government. These include telecommunications liberalisation and the development of legislation to establish an independent Competition Authority with the mandate and powers to deal with anti-competitive conduct.

6.8.5 Specific initiatives for the *Connectivity Laws and Policies Programme* include:

- Media neutral legislation to deal with electronic documents (e-Commerce legislation);
- Amendments to specific legislation, including the *Criminal Procedure and Evidence Act*, the *Authentication of Documents Act*, and the *Foreign Documents Evidence Act*;
- Development of policy and possibly legislation dealing with electronic signatures; and
- Development of policy and possibly a combination of legislation and industry codes of conduct to deal with the protection of personal privacy, particularly in the context of cross-border data flow, health care and financial services and transactions.

7 IMPLEMENTATION OF THE NATIONAL ICT POLICY

7.1 *Implementation Strategy*

Due to the enormity of the work that needs to be undertaken in designing and implementing the numerous programmes and projects that this Policy is recommending, there are two (2) critical project management tools that will be developed as listed below. These tools will be augmented with world class project management methodologies to ensure a high rate of implementation success:

- Master Plan and
- Monitoring and Evaluation Framework

7.2 The Master Plan will be used to manage all projects and programs. It will contain project plans with timelines and work breakdown structures of all major initiatives. It will also be designed so that the projects are implemented in a phased approach to better manage the workload and ensure that each project builds onto the next.

The Monitoring & Evaluation Framework will be used to measure the outputs and outcomes of all major initiatives. It will contain the key performance indicators of all initiatives measured against the Goals and Objectives of this Policy.

7.2 *Fast-Track Initiatives*

Listed below are a number of fast-track initiatives that will be launched at the earliest opportunity. Major design and implementation efforts then pick-up in following years:

- Approved Governance Structure for the design and deployment of the National ICT Policy
- Design of the Connecting Communities Programme and Community Access Centre Prototype
- Service Delivery Reform Programme for Government

- e-Government Portal Prototype and Request for Proposal
- Thuto Net Programme Design and Coordination
- Establishment of an e-Health Council
- Healthcare Portal Prototype and Request for Proposal
- Tourism Portal Prototype and Request for Proposal
- Design of the Agricultural Extension Agents Network
- Architecture Blueprint Initiative
- Infrastructure Deployment Office
- ICT Infrastructure Advisory Body
- Acceleration of Telecommunications Competition
- Development of e-Commerce Legislation
- ICT Promotion and Awareness Campaign

8 INVESTMENT

- 8.1 Wherever possible, each individual ICT initiative has been allocated a provisional cost estimate by the Task Forces. A total funding estimate of 950M Pula has been identified for the design and implementation of the National ICT Policy. This is a very preliminary estimate, which does not include the cost of all technologies and services. Consequently, the number should only be used as a placeholder for initial planning purposes. The exact cost of each project will only be known once the project has been designed in detail and, where appropriate, supporting business cases have been completed. There is already provision in the National Development Plan 9 for the Maitlamo projects. In addition, many of the projects will be conducted on a public-private-partnership basis, with most of the capital being provided by the private sector.
- 8.2 Costing estimates to support year one fast-track initiatives are expected to be in the region of 35 Million Pula.
- 8.3 The Rationale for investment will be as follows:-
- 8.3.1 Government services will be implemented by appropriate outsourcing and cost recovery initiatives. Increased levels of Public Private Partnership will be encouraged to help secure these levels of investment.
 - 8.3.2 Systems critical to national security, and other sensitive areas, will be owned and operated in-house.

9 MAITLAMO GOVERNANCE STRUCTURE

9.1 Information Age Council

Implementation of the National ICT Policy will require a large national effort and will only be achieved through cooperation and participation of all sectors represented by the Information Age Council.

- The Information Age Council will comprise the Minister for Communications, Science and Technology, as Chairperson, as well as eminent ICT experts from the national and international arena, to monitor, coordinate and champion ICT for national development.
- The terms of reference will include production of reports to Cabinet and its Committees.

MCST will be the secretariat of this Council with responsibility for strategy, standards, quality assurance, monitoring and evaluation.

Implementing agencies supporting the Information Age Council will be:

- The ICT Legal Reform Taskforce
- The enhanced Department of Information Technology within the Ministry of Communications, Science and Technology

9.2 The ICT Legal Reform Taskforce

The role of the ICT Legal Reform Task Force will be to coordinate and drive a project that will address the capacity constraints that currently impede amendment of Botswana law book to make it ready for the cyber-economy. The project will work with and through the various Ministries that own the legislations.

9.3 Enhanced Department of Information Technology (DIT) in the Ministry of Communications, Science and Technology

The Department of Information Technology will be given adequate staff and resources to execute national functions in addition to the current government functions, i.e.

- i. Manage national ICT projects
- ii. Manage and monitor national ICT service levels .
- iii. Procure services to support the office of e-Governance.
- iv. Provide secretarial services to the Information Age Council

9.4 e - Governance Structure

E-Government is a complete overhaul and change of the business processes of Government. It is the management and transformation of the civil service to a more ICT oriented service delivery. The e-Governance initiative will be coordinated by MCST in close cooperation with the Public Service Reforms Unit (PSRU) in the Office of the President. It is further proposed that:

- a). the Government ICT Steering Committee will be chaired by the Chief Controller of e-Governance, who will be a senior officer in MCST.
- b). each ministry will be responsible for implementation of its own IT programme having an adequately staffed IT Unit, supported by MCST and PSRU in the Office of the President and the ministerial Performance Improvement Coordinators (PIC).

GLOSSARY OF TERMS

Benchmarking - *The continuous process of measuring product, services and practices against strong competitors or recognized leaders. It is an on-going activity, intended to improve performance.*

BPO - Business Process Outsourcing: *Entrusting one or more IT integrated-type business processes to an external service provider.*

CAC - Community Access Centre: *Centres that provide everyone in the community with an on-ramp to the Internet and access to a broad range of information and services.*

CFS - Computers for Schools: *A programme for providing computers to schools.*

Connecting Botswana - *a series of initiatives aimed at developing and strengthening Botswana's technical infrastructure so that it can support the various programmes and projects that feature in this ICT Policy.*

Connecting Community Programme – *a programme to provide residents of rural, remote and urban communities with affordable access to computers and the Internet*

e - Commerce - Electronic Commerce: *Business done electronically, including the sharing of standardised unstructured or structured business information by any electronic means*

e - Business - Electronic Business: *The exchange of information within or among enterprises by electronic means for the purpose of conducting business transactions or other related activities*

e - Document - Electronic Document: *A document that has been scanned, or was originally created on a computer. Any information that is stored in an electronic format (e.g., a computer file, videotape).*

e-Government - Electronic Government: *Government's use of technology, particularly Web-based applications, to enhance the access to and delivery of government information and services to citizens, business partners, employees, other agencies, and government entities.*

e - Health - Electronic Health: *Refers to health services and information delivered or enhanced through the Internet and related technologies.*

EIS - Education Information System

e-Marketplace - Electronic Marketplace: *A virtual marketplace where buyers and suppliers meet to exchange information about product and service offers, and to negotiate and carry out business transactions through Web-based information system, where multiple suppliers and multiple buyers can undertake business transactions via the Internet.*

e - Readiness Assessment - *An exercise carried out to determine the degree to which a community is prepared to participate in the networked world.*

e - Signature - Electronic Signature: *Method of signing an electronic message that identifies and authenticates a particular person as the source of the electronic message; and indicates such person's approval of the information contained in the electronic message.*

Gateway - *Is either hardware or software that acts as a bridge between two networks so that data can be transferred between a numbers of computers.*

GDN - Government Data Network: *Government of Botswana network providing TCP/IP connectivity to computer users spread across the whole country achieved by local area networks of all the user departments connected through a GDN backbone. Major services using this network include corporate email, access to internet and many mission critical government applications.*

ICT - Information and Communications Technology: *Is an umbrella term that includes any communication device or application, encompassing: radio, television, cellular phones, computer and network hardware and software, satellite systems and so on, as well as the various services and applications associated with them, such as videoconferencing and distance learning.*

ICT Enabled Services - *A special form of outsourcing service of non-core activities to a third party who owns and manages the process; this being driven by the need of the organisation to reduce operating costs on various elements and hence increase profitability such as call centre, back office.*

IFSC - *International Financial Services Centre.*

IM/IT - *Information Management/Information Technology*

Information Society - *A term used to describe a modern population that is conversant with — and actively using — information and communications technology. A society where the creation and exchange of information is a predominant social and economic activity*

Infrastructure Deployment Office - *An office to coordinate various telecommunications and technology projects and agencies; This office will analyse all plans, examine new*

and emerging technologies, prepare deployment strategies, oversee the most effective rollout plans and monitor network performance.

Infrastructure Enhancement Programme - Programme for infrastructure sustainability strategies to support, maintain and grow the ICT infrastructure.

Internet - A "network of networks" linking millions of computers worldwide for communications purposes.

Internet Kiosk - PC based terminal offering users the ability to access the Internet.

MIU's - Mobile Internet Units: Vehicular-based computer centres,, equipped with Internet technology with the goal of bringing Computer Technology awareness and Internet access to rural populations that are more deeply affected by the Digital Divide.

MOE - Ministry of Education

Open Source Software - Software for which the original program instructions, the source code, is made available so that users can access, modify, and redistribute it.

Portal - A Website that provides a one stop shop to a variety of services by transferring the user to the application.

Regional ICT Hub - A centre of ICT companies, ICT research and development establishments etc. that locally design, develop and deliver ICT related products and services to the region.

School Connectivity Initiatives - Initiatives aimed at implementing efficient, affordable, fast and reliable network services and infrastructure in all schools and learning centres.

Tele health - The use of Information and Communications Technology to provide and support health care using the telephone and Internet.

Telemedicine - Access to shared and remote /distant medical examination, diagnosis and treatment by means of telecommunications and Information and Communications Technology.

Universal Service - Service available, as far as possible, to all the people without discrimination on any basis with adequate facilities at reasonable cost.