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Government of Finland



Kingdom
of Swaziland

Kingdom of Swaziland

*National Information and Communication Infrastructure (NICI)
Policy*

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ACRONYMS

AfDB	African Development Bank
AISI	African Information Society Initiative
ATM	Automated Teller Machine
BOO	Build-Operate-Own
BOT	Build-Operate-Transfer
BTO	Build-Transfer-Operate
CBO	Community Based Organisation
CBS	Central Bank of Swaziland
CET	Computer Education Trust
CMA	Common Monetary Area
COMESA	Common Market for Eastern and Southern Africa
CSD	Computer Services Department
E	Emalangeni – Swaziland currency (1US\$ = E6.5)
ECTB	Electronic and Communications Transaction Bill
EPRS	Early Poverty Reduction Strategy
FDI	Foreign Direct Investment
GDP	Gross Domestic Product
GIS	Geographic Information Systems
GNI	Gross National Income
HIV/ AIDS	Human Immune Virus/Acquired Immune Deficiency Syndrome
HW/ SW	Hardware/ Software
ICT	Information and Communications Technology
IPR	Intellectual Property Rights
ISDN	Integrated Services Digital Network
ISP	Internet Service Provider
Kbps	Kilo bits per second
LAN	Local Area Network
MEE	Ministry of Enterprise and Employment
Mbps	Mega bits per second
MDGs	Millennium Development Goals
MISA	Media Institute of Southern Africa
MJCD	Ministry of Justice and Constitutional Development
MOE	Ministry of Education
MOEPD	Ministry of Economic Planning and Development
MoU	Memorandum of Understanding
MP	Member of Parliament
MPSI	Ministry of Public Service and Information
MTEC	Ministry of Tourism, Environment and Communications
MTN	Mobile Telephone Networks, Swaziland
NDS	National Development Strategy
NEPAD	New Partnership for Africa's Development
NERCHA	National Emergency Response Council on HIV/AIDS
NGO	Non Governmental Organisation
NICI	National Information and Communication Infrastructure
NSDI	National Spatial Data Infrastructure
NSO	National Statistics Office
OSISA	Open Society Initiative for Southern Africa
PC	Personal Computer

PIAC	Public Internet Access Centres
PPP	Public- Private Partnership
PRSAP	Poverty Reduction Strategy and Action Plan
ROC	Republic of China
RSA	Republic of South Africa
SACU	Southern African Customs Union
SADC	Southern African Development Community
SATCC	Southern African Transport and Communication Commission
SCOT	Swaziland College of Technology
SDI	Spatial Data Information
SMME	Small Micro and Medium Enterprise
SMS	Short Message Service
SPEED	Smart Programme on Economic and Empowerment Development
SPTC	Swaziland Posts and Telecommunications Corporation
UNDP	United Nations Development Programme
UNECA	United Nations Economic Commission for Africa
UNESCO	United Nations Education and Scientific Organisation
UNISWA	University of Swaziland
VCR	Video Cassette Recorder
VOCTIM	Vocational and Commercial Training Institution
VSAT	Very Small Aperture Terminal
WHO	World Health Organisation
WSIS	World Summit on the Information Society
WUSSD	World University Services Swaziland

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The committee members were drawn from:

- The Office of the Prime Minister
- Ministry of Tourism, Environment and Communications
- Ministry of Finance
- Ministry of Economic Planning and Development
- Ministry of Enterprise and Employment
- Ministry of Public Service and Information
- Ministry of Housing and Urban Development
- Ministry of Education
- The Federation of Employers and Chambers of Commerce
- The Association of Internet Service Providers
- Swaziland Posts and Telecommunications
- SwaziMTN
- Swaziland Broadcasting and Information Services
- Tibiyo
- Swaziland Investment Development Corporation
- Central Bank of Swaziland
- University of Swaziland
- NGO Association
- Association of Consumers

The Task Team would like to extend its appreciation to the various stakeholders and individuals who contributed to the development of this document.

The United Nations Economic Commission for Africa (UNECA) coordinated the development of this NICI Policy & Plan for the Kingdom of Swaziland as part of its Technical Assistance to the Government of Swaziland under the auspices of the African Information Society Initiative (AISII) and with financial assistance from the Government of Finland, through the Cooperation in the Development of Information and Communications Technologies in Africa Programme.

Foreword

The Government of Swaziland is pleased to present this National Policy document which represents strong political will, commitment and institutional support at the highest level to drive the policy process forward.

ICTs are strategic in facilitating national development and the Government will play a prominent role in establishing the required enabling environment, the provision of the necessary resources, financial and otherwise, for the realization of the promulgated vision and mission.

We believe in the universal inclusive access by all to the Information Society and are convinced that ICTs can contribute to the realization of the MDGs by mainstreaming in key sectors such as job creation, culture, tourism, trade and commerce, etc.

Central to the success of the implementation of this Policy, will be the need to address the human capacity required to articulate and achieve the planned goals to ensure sustainability. It is important therefore that we strategize on awareness and capacity building programmes that reach out and involve all stakeholders and in particular, women, youth, private sector, academia, media, parliamentarians, to mention a few.

The implementation of the plans articulated herein will not be possible without the necessary investment and the crafting of innovative financing mechanisms. The Government will facilitate this through the establishment of sound legal and regulatory environments and supporting partnership mechanisms. Public/private partnership will be encouraged to complement current efforts and in the development of new programmes. Our development partners have hitherto played an important role in a financing a number of programmes and we will still seek their support in current and future programmes.

Through this Policy, we hope we will face and effectively address our challenges such as combating HIV/AIDS, human resources, infrastructure development, reducing the number of people living below the poverty line and creating digital opportunities to meet our development challenges.

I wish to commend the sterling work that has been undertaken by the ICT Task Team under the able leadership of the Chairman, Principal Secretary for Housing, Mr. Mbuso Dlamini in the consolidation and formulation of this Policy with multi stakeholder involvement thus ensuring that the Information Society benefits all. I would also like to express my appreciation to the Swazi people who participated in contributing inputs to this document.

I would also like to express my profound appreciation to the UN Economic Commission for Africa and the Government of Finland for their support in facilitating the policy development process.

Although the mandate to oversee the National ICT Policy formulation falls under my Ministry (Ministry of Tourism, Environment and Communications), the crosscutting nature of ICT will call for the involvement and cooperation of all Ministries, local authorities, NGO's etc in order to yield the desired results.

Hon. Thandi Shongwe
Minister for Tourism, Environment and Communications

Executive summary

The Government of Swaziland requested for technical assistance from the UNECA to develop a National Information and Communication Infrastructure (NICI) policy and plan for the country.

Box 1. What is NICI?

- An exercise for developing national ICT policies and strategies and implementable programmes;
- A guiding framework for integrating ICTs into national development programmes;
- A mechanism to implement the global vision of the African Information Society Initiative (AISI) at national level. (See Policy context for AISI);
- A national response to facilitate the digital inclusion of Africa and its integration into the globalisation process;
- A monitoring and evaluation tool of the role of ICTs in national development – SCAN-ICT
- an initiative to monitor progress and achievements made in the Information Society;
- A coordination mechanism between various stakeholders and funding agencies.

This NICI Policy is a result of several consultative meetings and value addition on an initial initiative championed through the Ministry of Public Service and Information (with the support of the UNDP) in 2000.

This document was formulated:

- through a consultative process in which all stakeholders had the opportunity to provide input;
- based on Swaziland's realities and aspirations, in line with the national development objectives and priorities with a view of determining the role of ICTs in the implementation of economic, social and cultural development goals;
- taking into account agreements and treaties to which Swaziland is party to, including the African Information Society Initiative (AISI - www.uneca.org/aisi), the SADC Information and Communications Technology framework, the New Partnership for Africa's Development (NEPAD) and the Declaration of Principles and Action Plan of the first phase of the World Summit on the Information Society (WSIS);
- taking into cognisance that the ICT Task Team will ensure that the Policy is reviewed regularly and its implementation continuously monitored and assessed.

To date, a number of countries have completed their National Information and Communication Infrastructure (NICI) policies and plans. The number of countries with ICT policies increased from 13 (2000), 16 (2002) to 28 (2005). Most of these countries have now progressed from policy adoption to implementation, monitoring and evaluation.

This document has been arranged into three main inter-related sections:

Part 1 - The Framework (Why?)

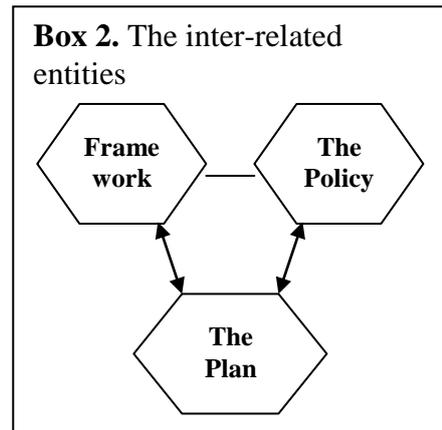
- To guide the policy and plan development process through the identification and compilation of relevant socio-economic data and other indicators (situational analysis);
- To assess the information needs of the target population (baseline study).
- To establish benchmarks so that subsequent monitoring and evaluation can assess the effects of identified programmes on the target population.
- The global and regional Information Society initiatives addressing challenges facing and opportunities of universal inclusive access by all to the Information Society.

Part 2 - The Policy (What?)

- Government policy commitments in relation to specific actions to be undertaken guided by data on relevant policy indicators.

Part 3 - The Plan (How?)

- Policy commitments translated into concrete programmes based on data on specific development indicators forming the basis for setting targets for specific programmes and initiatives.
- The monitoring and evaluation exercise will be based on the analysis of relevant indicators to assess progress towards Information Society development and socio-economic impact.



Part 1
The Framework

CHAPTER 1

The challenges in terms of the main socio-economic development indicators

1.1 Key Demographic and Socio Economic Indicators

Swaziland is a mountainous land locked country with a land area of 17 360 sq km and bordered on the South West and North by the Republic of South Africa and on the East by Mozambique. The capital and largest city is Mbabane.

Swaziland has a population of 1.174 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 (Table 1). The population growth rate for Swaziland is currently estimated at 2.9% (world growth rate at 2005 is 1.14%).

The national policy will therefore address to 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.

HIV/AIDS has had a devastating impact on the 14 - 49 year age group. Life expectancy has declined to 37.5 years due to HIV/AIDS (from 65 years in 1991). Women account for 49% of the population in the 14 - 49 age group and 55% of HIV victims in this age group. Total life expectancy for women is 3 years lower than that for men. The probability that a Swazi of 15 years will reach 50 years is 28% for males and 22% for females¹. 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. Other productive sectors have not been left unscathed in terms of deaths and absenteeism which has also placed a heavy burden in the health and social welfare sectors.

¹ Source: Budget Speech to the Parliament of the Kingdom of Swaziland - 9th March 2005

Table 1: Basic Demographic Indicators

Description of indicator	Measurement
Total population	1.1 M
Growth rate	2.9%
Ratio men/women	53% women, 47% men
Population density/ sq km	225.94
City population	20%
Rural population	80%
Age Distribution of Population	
Under 15 years	40.6%
15 to 64	55.6%
65 years and over	3.8%
Literacy	81.3%
Life expectancy	38 – Reduced due to HIV/AIDS

It is estimated that 66% of Swazis live below the poverty datum line at E71.00 (US\$10) per month. A skewed distribution of wealth indicates that 10% of the population controls 40% of the wealth whilst the poorest 40% control only 14% of the wealth. Rural poverty is over 70% in all administrative regions.

Uplifting of the standard of living for the people of Swaziland will be addressed within the confines of the proposed Poverty Reduction Strategy and Action Plan (PRSAP) to be operationalised before the end of the financial year. The two major goals of the PRSAP are:

- Reduction of the prevalence of poverty from 69% in 2001 to 30% by 2015 and to eliminate it altogether by 2022, in line with the vision and aspirations of the people of Swaziland; and
- Raising the quality of life of all people in Swaziland to levels aspired in the National Development Strategy (NDS) and encouraging them to participate in the growth of the country.

Table 2: PRSP/NICI Approach

PRSP Approach	NICI Approach
Country-driven – promoting strategy ownership through broad-based participation of civil society	Consultative – commencing with the development of National ICT policies, strategies, plans and objectives
Result-oriented & focussed on outcomes that will benefit the poor	Leverages ICT benefits for a people centred free market based socio-economic strategy intended for wealth creation
Comprehensive in recognising the multidimensional nature of poverty	Recognises the cross-cutting nature and the benefits of ICT
Partnership-oriented – coordinated participation of development partners	Development strategy built on public-private partnership principles for wealth creation
Based on a long-term perspective for poverty reduction	A road map for the country's journey towards a Knowledge Economy

Gender issues have been mainstreamed and are a major part of the PRSAP as a relatively large number of female households lack productive assets.

The PRSAP is developed around six pillars as the basis for policies, projects and activities which form the framework for poverty reduction. The PRSAP objectives will have a direct bearing on the NICI policy and plans and the activities will be guided by the ICT led initiatives outlined in the NICI policy. The processes are therefore complimentary and directed towards achieving the Millennium Development Goals (MDGs²) - Table 3.

Swaziland will also benefit from ICT-related economic gains derived from ICT diffusion and utilisation thereby reducing poverty by improving access to education, health, government and financial services and also facilitating market access for communal/subsistence farmers and artisans.

Table 3: PRSAP based NICI Policy

PRSP Pillars	NICI Policy and Plans
Macro-economic stability	Enabling legal and regulatory environment for service provision; Launching e-Government initiatives and new applications e.g. e-banking, e-cards, e-money, e-commerce.
Rapid acceleration of economic growth based on broad participation	Capacity building; Enabling legal/regulatory environment for service provision; Agricultural Information Systems for rural community information centres; Addressing infrastructure issues to enable universal, sustainable, ubiquitous and affordable access.
Empowering the poor to generate income and reduce inequalities	Availing credit/loan information online to promote self-employment and informal sector growth; Agricultural Information Systems for rural community information centres so as to promote rural production; Rural Multimedia Centres for women and requisite ICT capacity building.
Fair distribution of the benefits of growth through fiscal policy	Launching e-Government initiatives and new applications to benefit labour intensive activities including e-education, e-health etc to benefit the population; Creating an enabling legal and regulatory environment to attract investment and partnerships for infrastructure growth;

² www.un.org/millenniumgoals/

	Availing credit/loan information online.
Improving the quality of life of the poor	<p>Training and capacity building at the local level;</p> <p>Launching e-applications e.g. e-education - enhancing educational opportunities and supplementing traditional education and e-health for improving the quality of health care;</p> <p>Use of GIS for poverty mapping and planning intervention.</p>
Improve good governance and strengthen institutions	<p>Local government leadership training for representatives;</p> <p>Launching e-Government initiatives to improve public management and accountability.</p>

Low-cost access to information infrastructure is a necessary prerequisite for the beneficial use of ICT by the poor. The involvement of the community will be supported and encouraged as it is one of the key factors that will foster local ownership and the availability of content and services that respond to the most pressing needs of the disadvantaged.

Geographic Information Systems (GIS) will continue to be used in poverty mapping and planning interventions as geoinformation facilitates the identification, based on cartographic representations, of the exact needs to be addressed and the attendant plans for such programs. This calls for Government to ensure the systematic development, management and use of GIS.

Unemployment remains as one of the key developmental challenges facing the country. The unemployment rate was estimated at 22% in the 1990's and 29% in 2001/2³. With an estimated population growth of 2.9%, the economic growth will not adequately address the upliftment of the standard of living as measured by per capita income.

Unemployment in Swaziland's formal sector is on the rise, largely attributable to the closure of a number of textile factories and retrenchments at sugar plantations. Informal sector employment, an engine of growth in any economy, however enjoys prominence following the restructuring of companies in the 1990's. The encouragement of informal sector activities and the promotion of locally owned business enterprises will remain a priority in order to stem the unemployment rate.

³ Source: Swaziland Household Income and Expenditure Survey-2001/2

The importance of ICT in enhancing the competitiveness of Small Micro and Medium Enterprises (SMMEs) cannot be underscored. Many SMMEs with Internet access utilise it for communicating with suppliers and customers to search for business information and showcase their products. These activities however require affordable, high-quality access to the Internet and ICT products and services.

Box 3: E-commerce and SMME's

Internet led e-commerce is one of the most important tools for marketing for SMME's. E-commerce will cut the cost of production, selling, distribution and marketing and increase growth. E-commerce is taking shape in most African countries in one form or another, albeit at a slower pace compared to other parts of the world. Countries are beginning to include e-commerce sector strategies within NICI policies and plans.

Basic weaknesses/impediments

- Policy and legal frameworks
- Lack of ICT and SMEs development strategy
- ICT law
- Digital signatures law
- Electronic transaction law
- Content
- Infrastructure
- Budget

1.3 Swaziland economic performance

Agriculture and the associated agro-industries is the most important sector with potential to lead the process of economic growth with sugar, citrus and wood pulp as the main products. Subsistence agriculture employs about 80% of the population. Sugar, soft drink concentrate, citrus fruit and wood pulp remain important foreign exchange earners. Beef production for export markets is also a growing sector. The main export commodities include asbestos, coal, cotton, cut diamonds, minerals, paper and timber. The main import commodities include animals, automobiles, chemical products, energy and edible oils.

The manufacturing output is in the main, anchored on agricultural products many of which are value-added through the utilization of local raw materials. These cover food and beverages, including soft drink concentrates which are produced for several African countries; clothing and textiles; timber, including furniture; pulp and paper; refrigerators; metal and engineering; glass and chemicals and a wide variety of handicrafts.

Mining has declined in importance in recent years with only coal and quarry stone mines remaining active.

Swaziland maintains close economic and trading links with South Africa and the other adjacent states of Botswana, Lesotho, and Namibia through the Southern African Customs Union. Swaziland, Lesotho, Botswana, Namibia, and the Republic of South Africa form the Southern African Customs Union (SACU), where import duties apply uniformly to member countries. No customs or excise tariffs are applicable on goods originating from the SACU and customs duties are levied at the first port of entry into the Common Customs Area. Swaziland, Lesotho, Namibia, and South Africa also are members of the Common Monetary Area (CMA) in which repatriation and unrestricted funds are permitted.

There remains an untapped potential in the tourism sector currently facing competition from the neighbouring countries. The importance of ICT for the travel

and the tourism industry has increased enormously over the past few years. ICTs present a perfect platform for the industry to avail information about its products to the customers all over the world, in a direct, cost and time effective manner. It is important that efforts are accelerated to develop this sector and therefore increase its contribution to the Gross Domestic Product (GDP). Tourism is an information-intensive sector and therefore can significantly benefit from ICTs. The use of ICT for tourism development is expected to produce economic benefits by generating increased revenue for the local economy and contributing to local development. The distribution of tourism information and products over the Internet will have an impact on tourism enterprises such as suppliers and distributors. ICT will enable tourism businesses to make tourism products and services directly available to target consumers at a relatively low cost. ICTs therefore present an opportunity for Swaziland to organize and develop the tourism sector and improve competitiveness in tourism markets.

Box 4: Michael Porter's *Model of Competitive Advantage* (Porter, 1985; Porter, 2001) contends that ICT affect competition in three major ways:

- ICT can change the structure of an industry, and alter rules of competition;
- ICT can be used to create sustainable competitive advantage and provide companies with new competitive instruments;
- As a result of ICT, new business can be developed within a company's existing activities.

This sector has also been identified in the PRSAP as having the potential to create jobs for the unskilled, semi-skilled and SMME's.

Swaziland has been experiencing declining economic growth rates from 4% in 1997 to 2.1% in 2004 (Table 4), largely a result of a persistent drought, low foreign direct investment and a diminished output by the manufacturing sector coupled with low agricultural productivity. It is projected that there will be a further slowdown in economic activity, 1.8% for 2005/06 and 1.7% for 2006/7⁴.

The Transformation Policy Statement (September 2004), attributes a number of key drivers to this economic downturn:

- Industrial sector – manufacturing is the largest contributor to the GDP and the closure of companies has led to the shrinkage of the industrial base;
- Agricultural sector - the backbone and largest employer in the country has been experiencing a downward trend in terms of GDP contribution;
- Human resource skills shortages have hampered structural transformation and growth of the economy.

The Policy Statement also alludes to the need to review the capital and recurrent expenditures for Government to enhance the ability to respond to developmental challenges such as poverty, unemployment, HIV/AIDS and the budget deficit.

The Budget Speech to Parliament, March 2005 stressed on prudent fiscal management in view of the country's fiscal position which had not improved since year 2004. It was the intention of the Government to prioritise on the broader objectives of the economy aimed at addressing the macroeconomic and developmental challenges.

⁴ Source: Economic Review and Outlook 2002/3 – 2006/07 (March 2004)

The need therefore for an ICT-led socio-economic development process with the potential of transforming the country cannot be over emphasised. In today's competitive environment, it is not possible for a country to remain competitive without using ICTs to support its developmental process.

Table 4: Economic structure: Annual indicators

Indicator	2000	2003	2004
GNI (US\$ bn)	1.4	1.5	1.9
GNI per capita (S\$)	1370.0	1320.0	1660.0
GDP (\$bn)	1.4	1.9	2.4
GDP growth (annual %)	2.0	2.4	2.1
Value added in agric (% of GDP)	15.6	12.2	11.9
Value added in ind. (% of GDP)	44.7	51.5	51.8
Value added in services (% of GDP)	39.7	36.2	36.3
Export of goods & services (% of GDP)	80.5	83.5	83.1
Import of goods & services (% of GDP)	95.9	93.7	93.4
Gross capital formation (% of GDP)			
debt (\$ bn)	19.9	18.0	18.2

Source: The World Bank Group⁵

⁵ <http://devdata.worldbank.org>

CHAPTER 2

Status of ICT in Swaziland

2.1 Infrastructure

2.1.1 Fixed Network

Swaziland Posts and Telecommunications Corporation (SPTC), the posts and telecommunications sector monopoly operator dominates the telecommunications sector for fixed service provision albeit with private participation in mobile and Internet services. Notwithstanding the current monopoly environment, fixed and mobile penetration is relatively high compared with some of the neighbouring Southern African states. While Internet usage is growing reasonably fast, the level of penetration and expansion rates are still well below international standards. The Government has taken steps towards unbundling the national operator in order to create discrete telecom and regulatory entities/functions and in due course, to privatise the national operator.

The fixed network is 100% digital and supported by a countrywide optical fibre network with self - healing capabilities via national rings. Protection is also provided via microwave radio networks. The fibre network has drop/insert facilities to deliver services to the communities through which it traverses along the major routes. The network can support Integrated Services Digital Networks (ISDN) up to 128 Kilobits per second (Kbps). Fixed line connections are currently 46 000 – 4% teledensity.

There is a single International Gateway linking the UK, USA, Austria and Zimbabwe via satellite and the Republic of South Africa (RSA) and Mozambique via terrestrial microwave radio and optical fibre.

Data communication is enabled via a managed leased line network and data rates of up to 8 Megabits per second (Mbps) can be supported although the commonly utilised rate is 512 Kbps.

There also is in existence, an Internet Protocol (IP) Gateway with a 1Mbps uplink and 2Mbps downlink, with back up via RSA at 2Mbps.

2.1.2 Mobile Communications

MTN was awarded Swaziland's sole mobile licence. The licence is jointly owned by state-owned Swaziland Post and Telecommunications Corp (51%), MTN (30%) and Swaziland Empowerment Ltd (19%).

There are currently over 120 000 subscribers connected to the mobile network representing a teledensity of over 12%.

SMS/e-mail services are available to all subscribers. The major focus for network development is in the rural areas since there is almost total coverage in the urban areas.

2.1.3 Internet

There are currently 7 major ISPs with an estimated customer base of about 20 000. There are no licence obligations for ISPs except for an operation permit (Trading

licence). There is therefore currently no requirement for contributions to a Universal Services Fund.

The University of Swaziland continues to be the sponsor of the country domain name and Africa-on-Line has been re-designated as the Administrator of the .sz domain name.

Internet access rates (installation and monthly rentals) are pegged at 50% of the normal rates for primary and secondary/high schools. For calls to any Internet Service Provider (ISP) connected to the national gateway, the rate is equivalent to the local call rate regardless of location within the country. However, this level of discount still leaves ICT unaffordable to the majority of Swazis and levels of around 20% of the normal rates would be considered appropriate i.e. affordable.

Table 5: Basic indicators

Indicators	1999	2003	2005
Population (in millions)	0.98	1.0	1.1
Main telephone lines per 100 inhabitants	3.0	3.5	4
Number of fixed operators	1	1	1
Number of mobile operators	1	1	1
Mobile cellular subscribers per 100 inhabitants	4	10	13
Percentage of population covered by mobile telephony	13	70	90
Data communications operators	1	1	1
Internet service providers	2	7	6
Internet capacity (total bandwidth Kbytes)	256	2500	6500
Number of Internet subscribers per 100 inhabitants	0.5	1	1.2
Broadband Internet subscribers per 100 inhabitants	n/a	n/a	n/a
Number of PCs per 100 inhabitants	2.3	2.7	3.3
Percentage of localities with Public Internet Access Centres (PIACs) by number of inhabitants (rural/urban)	2	9	15*
Internet access tariff (20 hours per month) as a percentage of per capita income	n/a	n/a	n/a
Television sets per 100 inhabitants	7	9	11
% of households with radio			79
% of households with electricity	^	^	^
% of ICT investments and expenditures (% vis a vis GDP and vis a vis general Government expenditures)	^	^	^

* Number of cafes nationally

^ Data unavailable

2.2 ICT sectoral initiatives

2.2.1 ICT initiatives in Education

2.2.1.1 Educational institutions:

There are two main national institutions for ICT education, the Swaziland College of Technology, which offers Diplomas in Computer Science and the University of Swaziland which offers undergraduate Degrees in Computer Science and Electronic Engineering. Government sponsorship for external training is available in some instances. There are also in existence, several local institutions offering computer training to the public.

In efforts towards enhancing the quality of education and relevance, the Ministry is actively exploring ways of introducing Information Communication Technology (ICT) in the education curriculum. There is currently no official curriculum on ICT in the Ministry of Education (MOE) although the Ministry supports computer literacy programmes to which a number of schools have enrolled.

Major initiatives include:

- **The Computer Project (funded by the Republic of China – Taiwan).**

This project is being implemented in close collaboration with the Ministry of Economic Planning and Development (MOEPD) and the Government Computer Services is the facilitator. The project is currently targeting secondary/high schools and equipping schools with IT equipment i.e. PCs, printers and other accessories. The possibility of deploying Local Area Networks (LAN) in some schools is currently being explored. No charge is levied for ICT education although a minimal fee for equipment maintenance is charged.

- **The Prevocational Project (funded by the African Development Bank - AfDB)**

This is an AfDB funded initiative aimed at developing entrepreneurial skills. The project is currently being piloted in some secondary schools in the country and IT equipment (audiovisual equipment, VCRs, TVs, etc) was supplied through the Government Computer Services Department.

The schools also benefited from this pilot project in that Business Studies teachers were attached for facilitating the teaching of ICT.

- **CISCO Academy Programme**

A partnership between the University of Swaziland and Cisco Systems Incorporated, with the assistance of UNDP whose aim is to reduce the digital divide by training locals on Internet technologies. The Cisco networking academy helps build capacity by teaching students to design, build and maintain data networks. The UNISWA academy is one of the over 6000 academies in over 100 countries worldwide. The academy started operating in 2002 and over 90 people have already attended the academy.

- **ACTIVE - The development of an ICT curriculum for Teacher Training Colleges (Japan funded initiative)**

The Ministry, in collaboration with UNESCO, is currently developing a curriculum for colleges. It is hoped that this will facilitate the development of a policy on ICT within the Ministry and will further guide the development of an ICT curriculum at lower levels of education. This will effectively facilitate the coordination of the several independent initiatives currently ongoing in schools.

2.2.1.2 Initiatives with partners in education

The Ministry's positive stance on ICT literacy has attracted initiatives from the private sector and individuals and these include:

- **The Computer Education Trust (CET)**

This initiative has had a positive impact in the provision of ICT skills in education in the country. The CET maintains working relationships with the Ministry of Education (MOE) and has developed some learning materials and facilitated in-service training for teachers in collaboration with the MOE.

No charge is levied for students undertaking ICT education although a minimal fee for equipment maintenance is charged.

- **Future kids/teachers**

The Future kids initiative specialises in ICT literacy education for schools whilst the Future teachers initiative specialises in teaching materials.

Future kids/teachers are active in other SADC countries with some schools using the output to facilitate entry requirements into the South African higher education system (matric).

- **Renaissance Computers**

This is a private initiative which introduces ICT concepts to members of the public etc.

2.2.2 ICT initiatives in Health

The Ministry of Health and Social Welfare has a programme to network all health facilities, hospitals and health centres. The hospitals and health centres are equipped with computers while the clinics are not.

The World Health Organisation (WHO) and other development partners have been supporting Ministry Internet access efforts although this has not been sustainable.

Through the National Emergency Response Council on HIV/AIDS (NERCHA), the Ministry submitted a proposal to support Internet connection to hospitals to facilitate communications.

Capacity building has been included as part of the package for these initiatives after having been identified as a weakness.

2.2.3 ICT initiatives in Government

The main initiatives include:

- Expansion of the government network infrastructure to link all regional/sub regional offices, Police Stations, Correctional Services and Border Posts to the central computing facilities. This will result in the decentralisation of ICT services i.e. Internet, Intranet to government offices around the country;
- Implementation of a Population Register and an integrated Criminal Justice system. The Population Register system supports a Personal Identity Number subsystem that issues a personal identity card linked to an Automated Finger Identification biometrics system;
The Criminal Justice system integrates the functions of the Police, Magistrates offices, the High Court and Correctional services;
- Government ICT services are provided by a dedicated ISP. Through a phased project, the initial phase entailed web page development/design for all ministries and departments. The next phase will entail:
 - The provision of Intranet services for the same including government forms on line;
 - Development of an ICT security policy/strategy including the implementation of security tools;
 - Development of an ICT business continuity policy/strategy;
 - Computerization of the Tinkundla - Deputy Prime Ministers office;
 - Computerization of the schools and colleges - Ministry of Education;
 - Creation of a national data base for the disbursement of drugs for HIV/AIDS patients - Ministry of Health;
 - Development of an integrated personnel system;
 - Development of an ICT Master Plan from which an e-government strategy will evolve.
- E-Government: “e-government for Swaziland: Assessing the opportunities and challenges (July 2003)” - a UNDP (Swaziland Office) and Open Society for Southern Africa (OSISA) jointly sponsored e-government study (July 2003), whose overall objective were to assess the institutional capacity of the Government to fully exploit the opportunities and effectively address the challenges that e-government initiatives presented.

The major challenges identified in the study (in order to take full advantage of the e-government opportunities) were:

- the development of an ICT policy;
- the development of an e-government strategy aligned to Vision 2022;
- the deployment of an all inclusive ICT infrastructure;
- the creation of an enabling institutional environment;
- the provision of an enabling ICT governance framework;
- the provision of political and administrative leadership demonstrating political will and championship.

In conclusion, the study made a strong case for the development and deployment of e-government in Swaziland and noted the determination and commitment of the country's political and administrative leadership - a critical process success factor.

2.2.4 Other initiatives

- World University Services Swaziland (WUSSD) is a non-governmental organisational working with communities in the disseminating information through its Resource Centres (information sharing centres). From interactions with several Community Based Organisations (CBOs), WUSSD identified the need to introduce Telecentres as a means of bridging the digital divide in the communities. This community empowerment project is however hampered by the following:
 - ICT infrastructure - to enhance the advocacy role of WUSSD as the only collective voice of CBOs in the country;
 - Technical expertise - to support the delivery of Computer Literacy for entrepreneurship programmes. Currently, WUSSD draws expertise from partners within the SADC region and the ideal situation would be the localisation of expertise as part of the empowerment of locals in the area of ICT.
- The Community Computer Education Society has been established with the objective of catering for capacity building for the elderly and disadvantaged groups including out of school youth;
- Digital Villages - the UNDP has supported the establishment of three villages at Mankayane and Kukhanyeni and Matsanjeni. The sustainability of these villages remains a challenge;
- Swazi Relief - this is another UNDP supported initiative aimed at supporting the government disaster mitigation efforts. The website is currently hosted outside Swaziland;
- Financial Services – this sector has been involved in ICT applications resulting in the deployment of ATMs, debit cards, credit cards and most recently, Internet banking;

- Information services - the joint venture between the Swazi Observer (print media) and MTN to deliver news online presents an innovation in the area of ICT. The print media is floating informative ICT articles/briefs in Information and Communications Technology supplements. This effort has to be encouraged for Swaziland to become part of the Information Society. It is important however that information so dispersed is “user friendly” so as to improve outreach.

2.2.5 Policy and Regulatory initiatives

On sector reforms, the Government has now endorsed a telecommunications policy, which would lay the necessary foundation for the separation of functions of the Ministry (policy), Regulator (regulation) and operators (separation of Posts and Telecommunications). The Draft Bill to implement this policy has been endorsed by Cabinet.

2.2.6 Local loop deregulation

Both the fixed and mobile operators have facilitated the deployment of privately operated public call offices over their networks. There are currently 2765 privately operated fixed network lines generating revenue of E 2 million/month. Charges to the end user are not regulated resulting in some cases to end user exploitation. The mobile network operator, MTN, provides this service via a third party through airtime resale.

To facilitate the implementation of the African Information Society Initiative⁶ (AIS), there will be a need to ensure the deployment of adequate communication infrastructure through the liberalization of services supported by enabling legislation and incentives that lead to price reduction, advanced services and network expansion to meet universal access objectives.

⁶ <http://www.uneca.org/aisi>

CHAPTER 3

The Policy Context

3.1 The Global/Regional context

3.1.1 The African Information Society Initiative (AISI)

Recognizing the important role information and communication technologies (ICTs) play in facilitating the attainment of development goals and responding to the challenges of the Information age, the United Nations Economic Commission for Africa (UNECA) launched the African Information Society Initiative (AISI) in May 1996 as a common vision, not only bridge the digital divide between Africa and the rest of the world, but more importantly, to create effective digital opportunities to be developed by Africans and their partners, and speed the continent's entry into the information and knowledge global economy.

Box 5: AISI is a common vision for Africa's quest to bridge the digital divide. It was adopted by the Economic Commission for Africa (ECA) Conference of Ministers, in May 1996 and subsequently endorsed by the Organization of African Unity Heads of Summit meetings including the 1997 G-8 Summit. Several implementation activities have taken place in the following areas:

- Policy awareness;
- Training and capacity building;
- National Information and Communication Infrastructure (NICI) plans;
- Development information;
- Democratising access to the Information Society;
- Sectoral applications; and
- Infrastructure development and Internet connectivity.

Since the launch of AISI, the ECA has been supporting member States to embark on the development of NICI policies, plans and strategies.

The first African Development Forum (ADF)⁷ organised in October 1999 by the ECA with the theme "The Challenges of Globalisation and the Information age" proposed strategies and actions to be undertaken within the AISI framework to accelerate Africa's socio-economic development efforts in the Information age.

An initiative led by the UNDP, the Digital Opportunities Initiative (DOI) had its main focus on ICT for Development in Africa and other developing countries

Other efforts/initiatives aimed at the expansion and exploitation of ICTs for socio-economic development included those by the UN-ICT Task Force and the Digital Opportunities Task Force (DOT Force).

3.1.2 The World Summit on the Information Society (WSIS)⁸ Process

The World Summit on the Information Society (WSIS) is an initiative of the 1998 Plenipotentiary Conference of International Telecommunication Union (ITU). It was endorsed by the United Nations General Assembly as an effective means to assist the United Nations in fulfilling the goals of the Millennium Declaration.

⁷ www.uneca.org/adf99/

⁸ www.itu.int/wsis/

The first phase of the World Summit on the Information Society (WSIS), held in Geneva during 10-12 December 2003, provided a global platform where key players, Governments, UN agencies, private sector and the civil society, came together to develop a common vision and an understanding of the Information Society and adopt a Declaration and a Plan of Action.

The Summit adopted a Declaration of Principles and a Plan of Action⁹, setting the stage for international cooperation to close the existing digital divide between developing and developed countries while involving all stakeholders in building an inclusive Information Society.

Heads of States and stakeholders recognized and endorsed the need to create an enabling environment based on clear policies, laws and regulatory frameworks to enable a universal, equitable and affordable access to the knowledge-based society.

Building on what was achieved during the first phase, the second phase was held in Tunis from 16-18 November 2005. As agreed in the first Preparatory Committee meeting (PrepCom-1), the second phase was a follow-up on the implementation of the Declaration of Principles and Plan of Action by stakeholders at national, regional and international levels.

Swaziland has been an active participant to the WSIS process.

3.1.3 Southern African Development Community (SADC) initiatives

Swaziland is a member of SADC which has published a number of important documents to provide guidance to member states in formulating their policies.

These documents include the SADC Protocol on Transport, Communication and Meteorology (1996) and the SADC Declaration on Information and Communication (2001)¹⁰.

Article 10.2 of the SADC Protocol establishes the Southern African Transport and Communication Commission (SATCC) to coordinate the activities required by the Protocol in relation to the development of information and communication in the region.

The SADC Heads of State signed the SADC Information and Communication Technology Declaration in August 2001 declaring the following as priority areas of action:

- The regulatory environment for Information and Communications Technology;

Box 6: Swaziland is a member of the Telecoms Regulator's Association of Southern Africa (TRASA, 1997) whose objectives are:

- To co-ordinate regulatory matters and to exchange ideas, views and experiences on all aspects of regulation of the telecommunications sector throughout the Southern Africa region;
- To promote the establishment and operation of efficient, adequate, and cost-effective telecommunications networks and services in the Southern Africa region which meet the diverse needs of customers while being economically sustainable;
- To facilitate a uniform level of understanding of regulatory matters;
- To maximise the utilisation of scarce resources in specialist areas of telecommunications.

⁹ The World Summit for the Information Society (WSIS) Plan of Action, Document WSIS-03/Geneva/Doc/5-E, Geneva, December 2003

¹⁰ www.tralac.org/scripts/content

- Infrastructure for ICT development;
- Community Participation and Governance in ICT Development;
- ICT in Business Development;
- Human Resource Capacity for ICT Development.

The Declaration also urged member states to give priority to ICT for national and regional social and economic development and proposed a policy to build an information economy in the SADC.

Through its membership to the Telecommunications Regulators' Association of Southern Africa (TRASA), this policy development process will catalyse the adoption of complementary legislation and the liberalization of the sector.

3.1.4 New Partnership for Africa's Development (NEPAD)¹¹

Swaziland subscribes to the NEPAD vision and strategic framework arising from a mandate given to the five initiating Heads of State (Algeria, Egypt, Nigeria, Senegal, and South Africa) by the Organisation of African Unity (OAU) to develop an integrated socio-economic development framework for Africa. The document was formally adopted the OAU in July 2001.

In May 2002, a NEPAD Short-Term Action Plan for Infrastructure (STAP) alluded to the importance of infrastructure in the promotion of regional integration in the continent. Bridging the infrastructure gap was identified as an important element in promoting regional integration and trade. The 2002 STAP outlined NEPAD's response to the challenges facing the sector under four areas:

- facilitation - the establishment of the policy, regulatory and institutional frameworks to create a suitable environment for investment and efficient operations;
- capacity building initiatives - to empower the implementing institutions to perform their mandates;
- investment - in physical and capital projects; and
- studies - to prepare for future projects.

NEPAD's role in ensuring the successful implementation of the STAP was seen as:

- mobilising political will and actions to implement policy and institutional reforms, including harmonising regulatory systems and ratifying agreements;
- facilitating the mobilisation of resources for regional projects; and
- facilitating knowledge sharing, networking and dissemination of best practice among countries, Regional Economic Communities (RECs) and technical agencies.

The STAP was to be complemented by a more comprehensive medium and long-term Action Program (currently in the development phase).

¹¹ www.nepad.org

3.1.5 Common Market for Eastern and Southern Africa (COMESA)¹²

Swaziland is a member of the Common Market for Eastern and Southern Africa (COMESA) and in line with the Treaty establishing (COMESA), the member States are harmonizing the policy and regulatory frameworks in order to create an integrated ICT market and promote regional connectivity.

The region adopted the COMESA ICT Policy and accompanying Model Bill in March 2003 as guidelines for use by member States in reforming their communications policies and legislation within a period of five years. A five-step five-year (2003-2007) Action Plan for integrating the principles and strategies in the ICT Policy and Model Bill into the regulatory frameworks of member States was proposed. These steps were the:

- adoption or modification of policy and legislation;
- establishment or strengthening of regulatory authorities;
- liberalization of cellular mobile operations and value added services;
- privatisation of state owned telecommunication operators; and
- introduction of competition into fixed telecommunications network operations and services.

From a report - COMESA ICT Policy and Regulatory Assessment (2003), most COMESA countries will complete the fundamental changes that are contemplated in the COMESA ICT Policy and Model Bill earlier than the 2008 target.

The strategy and guidelines for ICT applications or electronic strategies (e-government, e-commerce, e-education, etc) would be adopted at a later stage.

A draft COMESA ICT Strategy, an attempt to systematise ICT acquisition/development, utilization and the identification of relevant ICT sectoral priorities, is currently under review.

¹² www.comesa.int

3.1.6 Existing environment - Baseline study

A baseline study was conducted as a framework for the NICI Policy and plan and to compile relevant data on key ICT related socio-economic indicators within the economy and society. The objectives of the study were to document the existing state of the ICT environment (a description of existing conditions) so as to provide a reference point against which future changes to the environment could be measured.

This study also established benchmarks so that subsequent monitoring and evaluation would assess the process impact on the target population. The systematic assessment of information needs of the target population will help in the formulation of intermediate, long-term and specific objectives of the process.

As part of the collaborative information, a review of the socio-economic indicators i.e. basic demographic indicators – population distribution/growth, key economic indicators – sectors of the economy, trade etc, past socio-economic development processes and performance, socio-economic development policies and programmes was undertaken in the earlier chapters.

The baseline study was undertaken in the areas of Government, Education and Business. The data collection instruments were questionnaires designed to enable the collection of gender disaggregated data in representative samples e.g. urban, rural etc to assess the access, use and impact of ICT.

Government:

Summary of the main findings based on the sampled data (Figs 1, 2):

- ICT equipment availability/accessibility in Government offices:
 - Telephones, mobile, fax services are available and accessible to a majority of staff;
 - There are access limitations in broadband and the Internet access;
 - Websites with e-services are nonexistent.
- Ratio of users with Internet access to the number of staff:
 - Internet access remains limited to a few users in Government offices.

Education:

Summary of the main findings (Fig 3, 4, 5):

- Percentage of primary and secondary schools with Internet access for students for study purposes:

- No Internet access in primary schools and very low access in secondary schools.
- Breakdown of ICT qualified teachers:
 - There is a limited number of ICT qualified teachers (5.26%) and these are only in secondary schools.
- For which purposes do students/teachers use computers / Internet:
 - PC's are in the main, used for office applications (word-processing/spreadsheets) by more females than males;
 - Software development/e-applications not available.
- Student to PC ratio:
 - Student to PC ratio is very low at all levels of education.

Business:

The main findings were (Fig 6, 7):

- ICT usage in Business:
 - A number of corporate businesses had PC's and access to the Internet albeit with fewer numbers of Internet users;
 - Only 20% of businesses utilised e-commerce/trade.
- Ratio of PC's to Businesses:
 - This ratio decreases with the inclusion of entrepreneurs and SMME's in the sample.

Fig. 1: Ratio of Staff to ICT Access

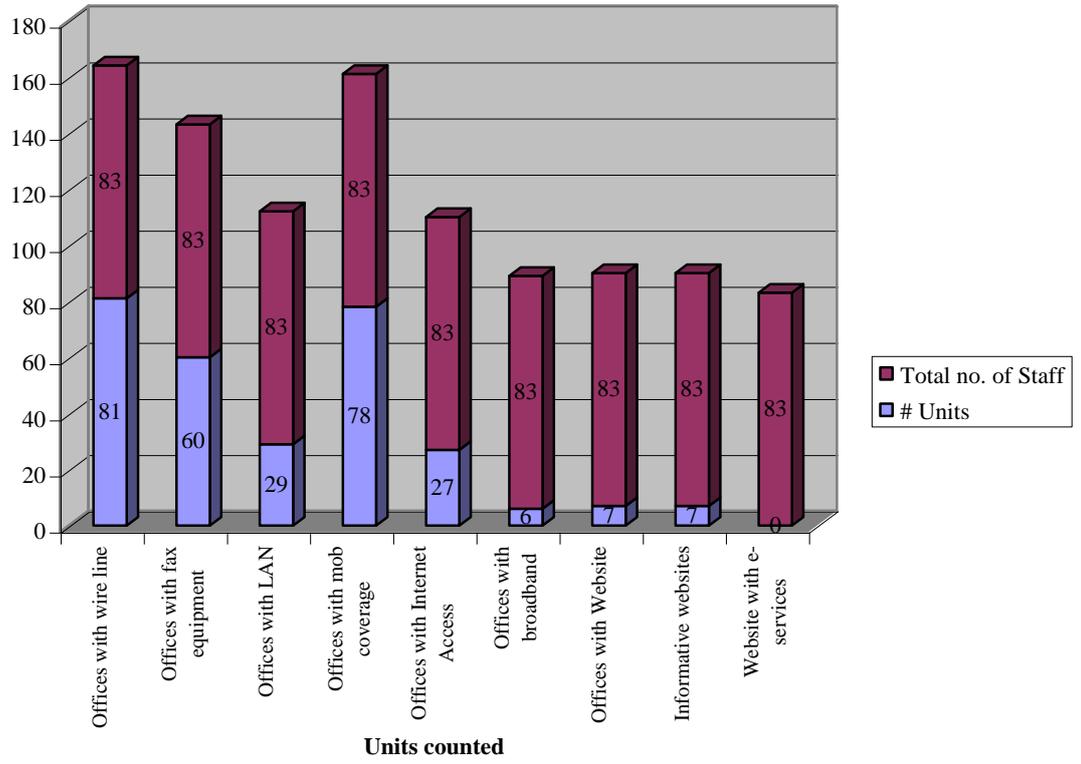


Fig. 2: Govt. Staff ICT Usage

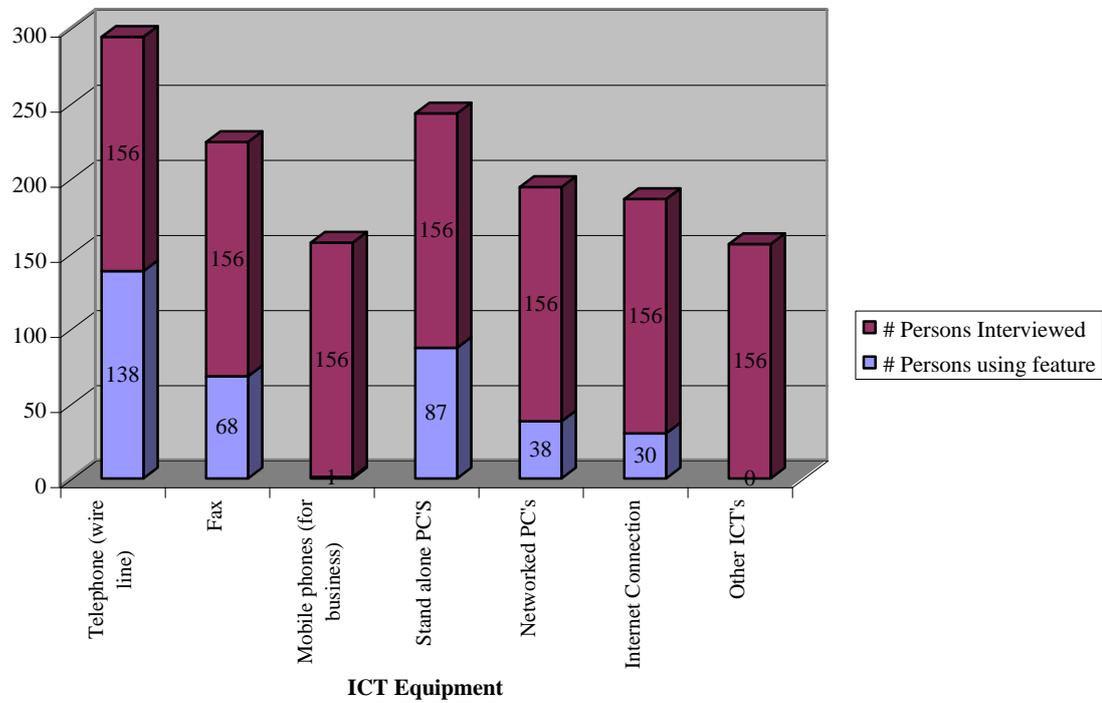


Fig. 3: Percentage of primary and secondary schools with Internet access for students for study purposes

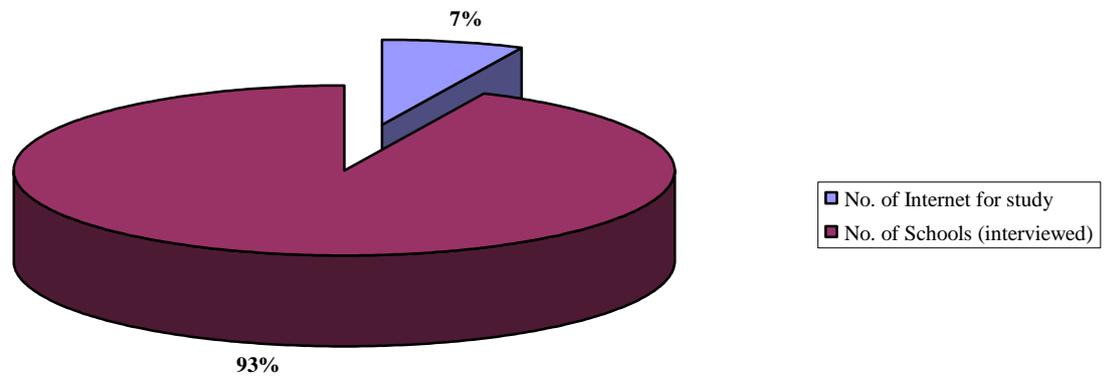


Fig. 4: Students to PC Ratio

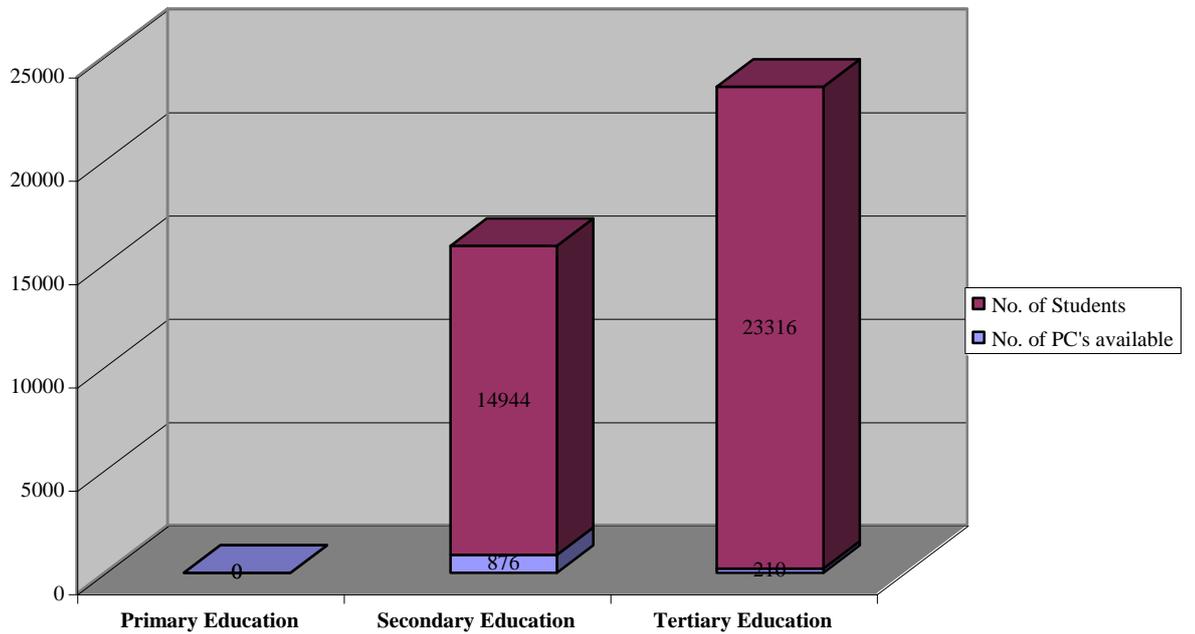


Fig: 5 Breakdown of ICT Teachers

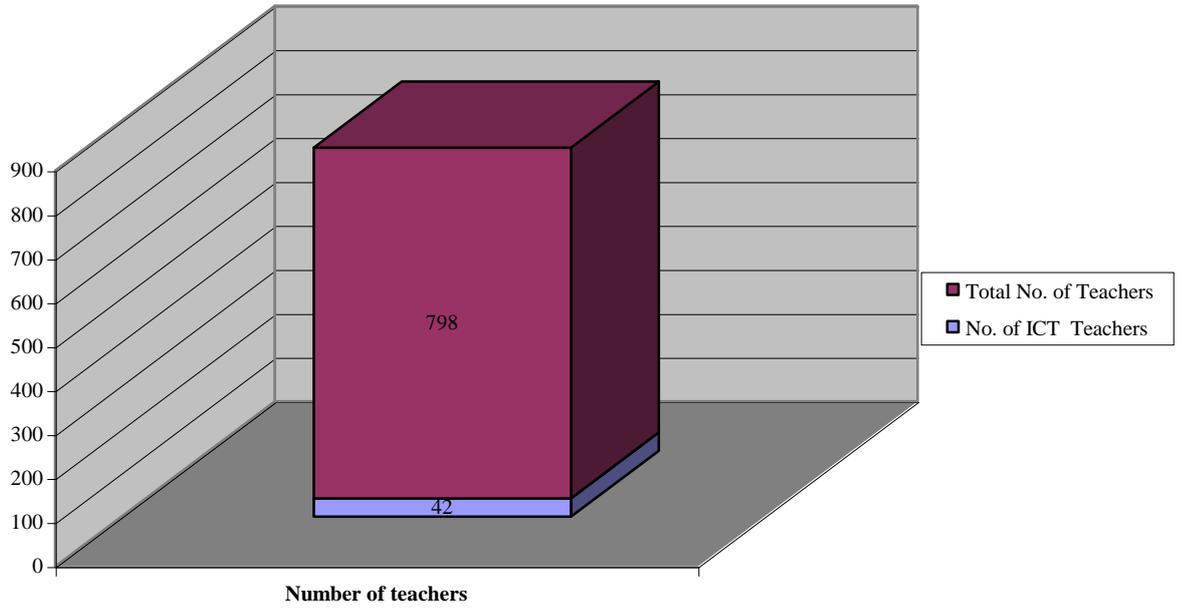


Fig: 6: ICT usage in business

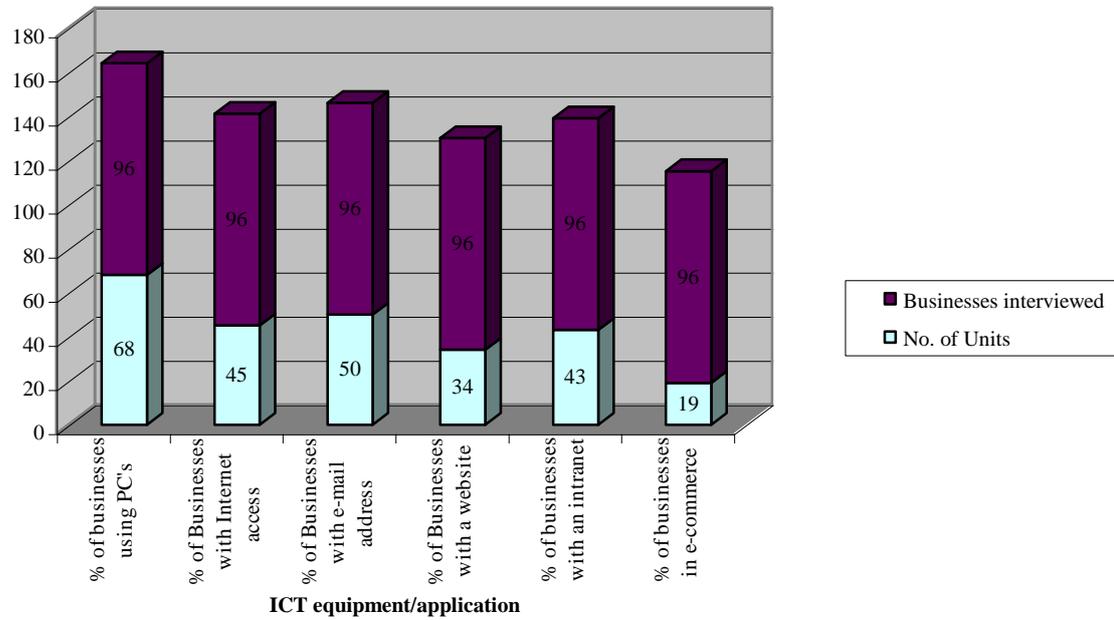
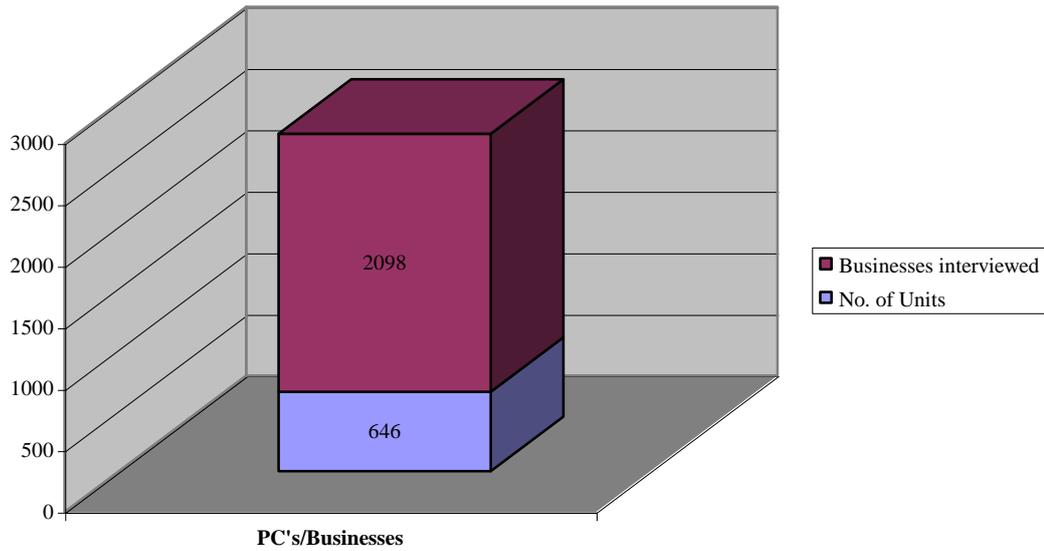


Fig.7: Ratio of PCs to Businesses



The following baseline study findings form the framework for this Policy:

- Strategies to enhance capacity building and ICT awareness for all (teachers, civil servants, public etc);
- Integration of ICT in mainstream educational curricula and other literacy programmes;
- Deployment of infrastructure that addresses ICT requirements of the different sectors (education, local government, health agriculture etc) and sectoral policies that promote equitable access for all;
- Strategies to enable the unimpeded acquisition of ICT equipment e.g. tax removal/rebates, incentives, local manufacture/ICT industry etc;
- Establishment of an enabling legal and regulatory environment as this is key to sector growth through investment attraction and partnerships in capital intensive ventures;
- The prioritisation of entrepreneur/SMME ICT requirements as this sector represents the engine for growth in any economy.

The baseline study analysis gives credence and buttresses the need for Swaziland to move towards coordinated efforts (ICT Policy) in the recognition of the important role ICT play in national development.

Part 2
The Policy

CHAPTER 1

Introduction

Swaziland's development process can be accelerated through the development, deployment and exploitation of Information and Communications Technologies (ICTs) within the economy and society. ICT is one of the most significant driving forces for development and its application contributes to promoting reforms, modernising the economy and enhancing the competitiveness of enterprises. ICT remain at the helm of economic growth and human development and the potential offers numerous options to assist the realisation of the Millennium Development Goals (MDG's).

There is therefore a need for an ICT-led socio-economic development process with the potential of transforming the country into an information-rich, knowledge-based and technology driven economy and society. The rapid developments which have emerged in the ICT sector avail huge opportunities for elevating the usage of information as a resource for development and the creation of an environment that will enable Swazi citizens to participate fully in the global information economy.

The expanding global belief holds that new ICT developments make significant contributions to social and economic development (UNDP e-government study – July 2003¹³). The World Bank Group Strategy, April 2002 acknowledged that the “knowledge revolution” provided an opportunity to foster greater competitiveness, new economic growth and job creation, better access to basic services, improved health and education outcomes, and greater empowerment of local communities. ICT applications have the potential to enhance the delivery of sectoral mainstream development goals. Swaziland, like any other developing country, has to harness the potential of ICTs in order to be part of the “knowledge revolution”.

The National Information and Communication Infrastructure (NICI)¹⁴ Policy & Plan development process in Swaziland is geared towards recognising the areas where ICT could effectively contribute towards the achievement of the vision enshrined in the National Development Strategy (NDS)¹⁵ and the Transformation Policy Statement¹⁶ which also incorporates other existing Government initiatives such as the Smart Programme on Economic Empowerment and Development (SPEED), the Poverty Reduction Strategy and Action Plan (PRSAP), Public Sector Management Programme (PSMP), the Fiscal Restructuring Programme, the Millennium Development Goals (MDG's) and the Millennium Action Plan (MAP). The targets laid down in the above strategies will be difficult to attain in the absence of a national ICT Policy.

The digital divide, characterized by highly unequal access to and use of ICT, manifests itself both at the international and domestic levels and therefore needs to be addressed by national policy makers. The cornerstone of this national policy will be to achieve sustainable development in the ICT sector thereby creating a self-propelling mechanism which will facilitate the maximisation of benefits that can be

¹³ E-government for Swaziland: Assessing the opportunities and challenges (OSISA/UNDP – July 2003)

¹⁴ www.uneca.org/aisi/nici/

¹⁵ Kingdom of Swaziland National Development Strategy (NDS) Vision 2022 – August 1999

¹⁶ Source: Transformation Policy Statement – September 2005

derived from ICTs within the context of national socio-economic development strategies.

Policy objectives

1.1 Vision statement

To harness ICT infrastructure and ICT solutions that enhance the building of a truly Twenty-First Century Kingdom of Swaziland with sustainable socio-economic development, accelerated poverty reduction, equal opportunities for all regardless of gender and physical ability.

1.2 Mission statement

To enhance national socio-economic development by encouraging the beneficial activities of ICT in all sectors through the provision of a conducive environment that will progressively maximize the quality and security of the life of the people of Swaziland and make the best use of the country's human and natural resources, and promote multi-layered co-operation and knowledge sharing nationally, regionally and globally.

1.3 Specific objectives of the Policy

Swaziland's development process can be accelerated through the development, deployment and exploitation of ICTs within the economy and society. There is therefore a need for an ICT-led socio-economic development process with the potential of transforming the country into an information-rich, knowledge-based and technology driven economy and society. The crosscutting nature of ICTs demands for a national policy framework harnessed by political will and business-sector leadership which will enable the integration and use of ICTs.

This Policy will address the following:

- Increase national consciousness about the role and potential of ICTs for the sustainable development of Swaziland;
- Chart a roadmap for ICT development in the country and define the roles and responsibilities of different players in the development of the ICT sector whilst mainstreaming gender in the development and implementation of all ICT programmes;
- Facilitate the development and implementation of the necessary legal, institutional and regulatory framework and structures to support the deployment, utilization and development of ICTs;
- Create a conducive/enabling environment for co-operation and partnerships in ICTs, between the public and private sectors, and all interested stakeholders at

the national, regional and international levels and create a favourable climate for investment in the ICT sector and to identify innovative financing mechanisms that address specific needs for ICT development;

- Facilitate the integration of ICTs in national development initiatives such as the Poverty Reduction Strategy Action Plan thus contributing to the eradication of absolute poverty and the improvement of the standards of living of Swazi's;
- Facilitate the deployment, expansion, rehabilitation and modernization of the national information and communications infrastructure;
- Facilitate the development of a viable ICT industry to facilitate research and development, manufacturing, content development and distribution of ICT products and services and employment creation;
- Development of national human resource capacity to enable the exploitation of ICTs within the society to support the delivery of educational services at all levels, health and social services whilst improving in operational, efficiency and service delivery in the civil and public services;
- Provide universal access to information for all citizens in order to improve the quality of life through inclusive access to education, science and technology, health, culture, entertainment etc;
- Ensure that the benefits of ICTs are utilised in addressing gender (disadvantaged groups) inequalities in education, employment opportunities, and decision-making. ICT capacity building for the girl child and women is a must;
- Ensure that all sectoral development plans and projects have an ICT component and to coordinate ICT activities in the country including the formulation of appropriate policies, strategies and plans for the implementation of e-applications e.g. electronic government and governance, e-health, electronic commerce etc;
- Facilitate Swaziland's integration and participation in the local and global economy and in the global Information Society.

1.4 Strategies to achieve the objectives

- To develop the necessary legal, institutional and regulatory enabling environment and structures for supporting the development, deployment and exploitation of ICT within the economy and society;
- To develop the physical infrastructure of Swaziland using innovative methods including co-location with other infrastructure providers e.g. electricity, roads, railways etc;

- To build broadband capacity in the information and communications infrastructure and introduce new services to improve universal access and service quality;
- To promote the development of a competitive local ICT industry for the manufacture of technology products and services coupled with the facilitation of private sector involvement in the development of the economy;
- To improve human resource development through identified capacity building initiatives in order to meet national development demands and requirements;
- To promote the deployment and exploitation of information, knowledge and technology within the economy and society in order to address issues related to equitable access to education, training etc.

1.4.1 Gender dimension in the ICT policy process

ICTs have enormous potential to benefit girls and women in terms of enhanced income-generation opportunities, employment, and improved quality of life. The policy will take into account the needs of women, as well as men, at all levels - from urban to rural populations. Issues such as access constraints, prohibitive costs, sustainability and poor infrastructure for ICT use will be addressed and gender issues, relevant to ICT production, use and access will be identified.

In the design of ICT projects, gender balance will be ensured so as to raise the level of awareness on the role, use, application and potential of ICT in gender empowerment and meeting specific developmental needs of women. This would lead to the increased participation and empowerment opportunities for women in national development through ICTs.

The peculiar needs of both sexes, able and disabled will be considered in the drive towards ICT literacy. Equal access to ICT will be ensured for man and woman, boy and girl, able and disabled. The use of ICT applications for sensitisation and information sharing on issues of national importance such as reproductive health, HIV/AIDS will be exploited i.e. the promotion and use of ICTs in addressing social issues.

1.4.2 Mainstreaming Youth causes in the policy process

Swaziland's population consists predominantly of young people with some 40% under the age of 14 years. This youth will play a crucial role in linking Swaziland to the Information Society and thus, special attention needs to be accorded to the development of the youth to be e-ready. The ICT4D Youth network, hosted by Swaziland Youth Council, should be strengthened and to ensure the participation of the youth in reviewing, updating and implementation of the policy. Support to the implementation of the network Plan of Action should be prioritized.

Youth and the Information Society are key issues in Africa and the basic challenge is how the youth can be effectively represented so they can have a voice in the policies that affect them. The Kingdom of Swaziland is committed to do this through the:

- promotion of the youth network for harnessing ICT for their development;
- creation of an enabling environment to harness ICT to empower youth employment in general;
- support of the role of ICT in youth education and training;
- support for the establishment of mechanisms to empower Out of School and disenfranchised youth;
- support for the establishment of platforms/fora to ensure representation and a voice in building Swaziland Information Society for young men and young women;
- engagement of young men and young women in the consultative processes around the PRSP/MDGs in the country.

1.5 Establishing the links between the NDS and strategic Policy areas

The National Development Strategy (NDS) focuses on seven (7) key macro and sectoral strategies fundamental to achieve the Vision 2022. Further to this, the Smart Programme on Economic Empowerment and Development (SPEED) and the NDS regards Media as a key component for development.

ICT will be utilised to enhance the delivery of mainstream development goals and creating opportunities for the disadvantaged and empowering the poor.

It therefore becomes imperative to integrate ICT into each of the macro areas and sectoral strategies of the NDS whilst keeping in focus, the findings of the baseline study.

These are:

Sound Economic Management

- Enabling legal and regulatory framework
- ICT leadership
- Infrastructure - access for all

Economic Empowerment

- ICT industry
- Infrastructure - access for all
- Capacity Building

Human Resource Development

- Capacity building in all sectors
- Content

Agricultural Development

- ICT infrastructure
- Capacity building

Industrialization (diversification)

- ICT industry
- Services sector

- Infrastructure - access for all

Research for Development

- Capacity building
- Technology transfer
- Infrastructure

Environmental Management

- Infrastructure – access for all, content, website development

Media

- Legal and regulatory enabling environment
- Capacity building

CHAPTER 2

The Policy Pillars

2.1 Human resource capacity

Issues:

Human capital is critical for the development and management of ICTs. The shortage of skilled ICT professionals has been identified as one of the challenges in the development of ICTs. In order to facilitate the embracement of ICT applications, capacity building initiatives/programmes are a must for policy makers, the public and private sectors and civil servants.

Objectives:

- To increase the ICT skills base, including for disadvantaged groups such as women, disabled, and unemployed in Swaziland;
- To increase the number and improve the quality of ICT professionals in Swaziland;
- To develop strategies to encourage and support ICT training for politicians, private and public sector executives, as well as community and civil society leaders;
- To develop strategies that will promote *e*-literacy and create a sustainable culture of ICT use and development;
- To develop strategies to encourage the conversion of ICT knowledge and skills into goods and services;
- To ensure the establishment of an institution/agency to set standards and accredit ICT training offered by local institutions focusing on life-long learning;
- To support schemes aimed at capacity building of local ICT training institutions, focussing on life-long learning; and,
- To ensure that all national information resources are accessible through ICT.

Challenges:

- Low levels of ICT literacy;
- Insufficient numbers of ICT professionals and their mobility both in Government and the private sector;
- Rapidly changing ICT environment requiring a new set of professional and technical skills, expertise and management tools to successfully manage the dynamic ICT environment;

- Under utilisation of Government intra-net facility to facilitate policy development and decision making;
- Inadequate ICT skills for politicians, private and public sector executives, as well as community and civil society leaders;
- Absence of a comprehensive national master plan for ICT capacity building;
- Developing attractive remuneration and retention packages for ICT skilled staff;
- High reliance on external consultants resulting in capital flight;
- Capabilities of local ICT training institutions focusing on life-long learning;
- Developing appropriate attitudes, knowledge and skills for ICT initiatives; and
- Absence of an institution/agency to set standards and accredit ICT training offered by local institutions focussing on life-long learning.

Policy Statements:

The Government of Swaziland will:

- encourage public, private and community sector participation in the development of ICT human capital;
- promote and support ICT training for politicians, private and public sector executives, as well as community and civil society leaders;
- support schemes aimed at upgrading existing ICT skills and competencies, especially in the civil service. This will also reduce the dependence on external consultants and also stem capital flight;
- provide an environment that will facilitate the preparation of communities for electronic service delivery; and
- adopt measures to establish an Institution/Agency to set standards and accredit ICT training offered by local institutions, focusing on life-long learning.

Targets:

- Master plan for ICT capacity building to be in place by the end of 2006;
- All Ministers and Senior Executives in Government to acquire ICT literacy and computing skills by 2007;
- Increase the pool of ICT professionals by 50% by 2015;
- All Principal Secretaries and MPs must acquire basic ICT skills by 2010;
- Over 75% of civil servants must acquire basic ICT skills by 2010;

- ICT literacy and basic computing skills to be mandatory for recruitment and promotion in the civil service by 2012;
- 70% of Tinkhundla to be prepared for electronic service delivery by 2015;
- Library automation and electronic service delivery by 2009 (virtual libraries)
- Library Internet connectivity/access by the end of 2006;
- Information literacy will be part of the curriculum in schools by 2009;
- All schools, Tinkhundla and chiefdoms to have libraries/information and learning resource centres by 2010;
- Private sector to participate in capacity building by the end of 2006;
- Establish a curriculum research board/accreditation of IT training institutions; and
- Establish an institution/agency to address the issues of standardisation and accreditation of ICT life-long training by the end of 2006.

2.2 Education

Issues:

In order to compete in a competitive global economic environment, a highly skilled and educated workforce with aptitude and skills in the application of information and communication technologies is essential. With the new opportunities offered by ICT, the National policy for ICT in Education is intended to enable Swaziland to be more competitive in the global economy. In addition, over the recent years, initiatives by the private sector and school communities to introduce information technology in the schools have been undertaken. Some schools are utilising computers to teach computer studies at secondary and high school level, whilst other schools have introduced computer literacy at primary school level. These initiatives have had no guiding policy and hence the need to develop a policy that will guide the successful integration of ICT in the education system. The policy is necessary to ensure standardisation, reducing wastage and ineffective use of the technology thereby optimising technology use in enhancing teaching and learning.

Objectives:

- To promote equitable access to educational resources through the strategic application of ICT;
- To introduce computer education at primary level in all government schools;
- To introduce specialised computer education for disabled youth;
- To introduce computer education in all institutions of higher learning - Vocational and Commercial Training Institution (VOCTIM), Swaziland College of Technology (SCOT), etc;
- To ensure school leavers ICT literacy, hence providing them with the requisite ICT skills to secure employment and to gain entry in tertiary programmes offering training in ICT;
- To enable all teachers to be competent users of ICT as a tool in enhancing the teaching and learning process;
- To improve the efficiency and effectiveness of educational administration through the promotion of the use of appropriate school management information systems;
- To develop ICT programmes for out of school youth, senior citizens and illiterates;
- To exploit ICT in the provision of life-long learning through distance education programmes;
- To create sustainable ICT programs in education through collaboration with the public, private and community sectors;
- To establish an educational network system for the sharing of educational resources;
- To encourage partnerships and communication between the various stakeholders in the education sector;
- To improve professional development opportunities for all educators; and
- To develop gender based ICT programmes to target the disabled persons;
- To provide distance learning education through ICT.

Challenges:

- Ensuring that all sectors of the education system understand the benefits of investing in ICT;
- Ensuring that the basic infrastructure required for introducing ICT in education is in place;
- The attended costs of introducing and maintaining ICT programmes in schools and institutions of higher learning;
- Developing partnerships between government and the private sector and other sectors to fund the use of ICT in education;
- The training of teachers or educators in the use and application of ICT in teaching, research and administration;
- The development and management of local content to support teaching and learning; and
- The integration of ICT into the existing school curriculum.

Policy Statements:

The Government of Swaziland will:

- ensure that the Ministry of Education and related departments' Management Information Systems (MIS) are developed, operational and integrated;
- ensure that ICT are deployed and taught at all levels of the formal education system in order to facilitate learning and also create an information based society;
- ensure that basic computer studies are integrated in all programs offered in tertiary institutions (including cyber security);
- through the Ministry of Education, ensure the development of a computer studies curriculum (gender based approach), to be offered by all secondary and high schools;
- prioritise schools in rural communities for special attention in provision of basic ICT infrastructure required for the introduction of ICT.
- prioritise teacher in-service training in computer literacy (gender based approach);

- encourage higher educational institutions within the country and the region to share information and knowledge through data networks;
- assist tertiary institutions in the country to increase the output and quality of gender based ICT skilled human resources; and
- ensure the girl-child's full participation in science and technology education.

Targets:

- Ensure that the Ministry of Education and related departments' MIS are developed, operational and integrated by the end of 2007;
- All tertiary education institutions will have computer laboratories (possibly opened to the community outside school hours) with Internet connectivity by the end of 2007;
- ICT capacity building for all tertiary school educators, on a gender based approach, by the end of 2007;
- All teacher training institutions in Swaziland will offer basic computer studies to all incoming trainees by 2008;
- To ensure that an examinable computer studies curriculum for secondary and high schools is in place by 2008;
- To ensure 70% of schools will have computer laboratories with Internet access (possibly opened to the community outside school hours) by 2012;
- Tertiary Education institutions will double the output of ICT graduates by 2010;
- ICT literacy will be a mandatory requirement for entry into tertiary institutions by 2015;
- To ensure that the Ministry of Education has a standards monitoring body by the end of 2006; and
- MOE must ensure that all private training receives official accreditation by the end of 2006.

2.3 Infrastructure development – Equal access for all

Issues:

The Swaziland Government, in its efforts to address the growing extent of the digital divide, has identified the need for a structured ICT policy. As a developing nation Swaziland faces a number of challenges with the availability, quality and affordability of infrastructure for ICT. To facilitate effective and sustainable social and economic development, there is an urgent need for the appropriate application of ICT in all sectors of the economy. This is particularly important for small and developing economies which have to be efficient and competitive in international markets and the appropriate application of ICT can go a long way in reducing the cost of production thereby improving access to international markets.

While a number of ICT equipment/gadgets are increasingly becoming available in Swaziland, most of these, if not all, are imported and therefore attract duties and taxes, the cost of which is passed on to the end user. The ICT equipment/gadgets are often “one size fits all” resulting in developing countries purchasing undesirable features/options.

ICT diffusion is often limited to urban areas, thus disadvantaging the 70% of the population in the rural areas. There is also a need to address the internal digital divide between rural and urban, man and woman, boy and girl, able and disabled.

Service provision is under the purview of monopolies, and this often limits and the There are no incentives for the private sector to deploy services in non-profitable areas. Community access centres could facilitate service provision in rural areas.

Network rollout is often not coordinated with other strategic infrastructure development initiatives thus foregoing the attended benefits associated with collocation of infrastructure.

Internet penetration is on the rise in Swaziland although some content issues are still contentious especially with regards to security, pornography etc.

National Spatial Data Infrastructure (NSDI) is critical for the proper management of infrastructure in terms of position location to facilitate the sharing of facilities thus necessitating the need for a common national data infrastructure pool for the land system.

Objectives:

- To deploy a universal, ubiquitous, equitable, affordable and reliable ICT infrastructure;
- To utilise broadband and other innovative technologies for service provision whilst ensuring compatibility and interoperability;
- To develop a National Spatial Data Infrastructure (NSDI);
- To adapt ICT equipment to meet the needs of the disabled persons;
- To promote the responsible dissemination of content via the Internet;

- To foster an environment for stability and fair play at all levels in order to attract private sector investment in ICT infrastructure development; and
- To ensure that all players contribute to meet universal service obligations.

Challenges:

- Building an ICT infrastructure which ensures access for all;
- Mobilising investment in the development of ICT infrastructure and services;
- Liberalising the sector to attract investment and ensure immediate gains;
- Creating a legal environment that will raise investor confidence;
- Ensuring that deployed capacity is used optimally;
- Ensuring the dissemination of appropriate content to all the Swaziland citizens;
- Maintaining policy and regulation abreast with technology evolution/dynamics;
- Avoiding duplication of efforts in NSDI; and
- Consolidating the governance of ICT.

Policy Statements:

The Government of Swaziland will:

- accelerate sector reforms to separate functions - policy, regulation and operations;
- review the exclusivity timeframes in basic services with a view to accelerating the liberalisation of all services;
- facilitate the creation of a universal access fund to which all operators will contribute;
- facilitate the building of a state of the art ICT infrastructure premised on broadband;
- facilitate the provision of connectivity to Tinkundla, schools, health institutions, community centres etc to ensure efficient and cost effective delivery services;
- encourage and support coordinated delivery of communications, roads, electricity, pipeline, housing infrastructure etc to reduce costs;
- encourage and support local assemble of some of the basic ICT equipment;
- facilitate the importation of ICT equipment and services through duty reduction, tax breaks, incentives etc;
- encourage Internet Service Providers ensure that delivered content protects the violation of women's rights against on-line sexual exploitation which is also culturally inappropriate for society e.g. the youth;
- ensure that ICT equipment is adapted to meet the needs of the disabled persons;
- fast track the implementation of the recommendations of the UNDP e-government study; and
- facilitate the conclusion of a MoU between the Competition and National Regulatory Authorities (anti-competitive practices in a liberalised sector).

Targets:

- Establish an independent communications Regulatory Authority by the end of 2006;
- Unbundle the local loop by 2007;
- Deregulate/Liberalise the telecommunications sector by 2007;
- Privatisise the fixed network operator by 2008;
- License a second national fixed and mobile network operator by 2010;
- Exempt from duty, imported ICT equipment from 2007 - 2010;
- Establish a national Geographic Information System (GIS) by 2007;
- Double the teledensity by 2009;
- Connect 70% Tinkhundla by 2015;
- Connect all tertiary institutions by 2009;
- Set up at least 100 community communications centres by 2009;
- Connect 50 % of secondary schools by 2015;
- Connect all hospitals, health centres and clinics by 2010;
- Promote indigenous Small Micro and Medium Enterprise (SMME's) by ensuring the acquisition of at least a 30% stake in all ICT procurement ventures by local infrastructure providers by 2008;
- Establish a full National Spatial Data Infrastructure (NSDI) framework by 2007.

2.4 Strategic ICT Leadership

Issues:

In Swaziland, the leadership and co-ordination of the critical issues of ICT has hitherto not been centralized under a single custodian. This has given rise to a situation where initiatives in this sector are not only fragmented, but also given the resource constraints in the country, there has inadvertently been a duplication of effort/resources resulting in unexploited economies of scale and loss of potential synergies.

There is an urgent need therefore for strategic leadership by Government to ensure strong oversight and leadership capability to streamline and harmonise ICT initiatives in Swaziland.

The government provides the political environment for development. It provides the policies, standards, guidelines regulatory and legislative environment under which the society should operate to achieve agreed development goals.

The strategic leadership by Government has many facets including:

- The need for Government for an enabling environment, through the enhancement of sound macro-economic management, supported by investor friendly rules and regulations (level playing field); developing robust policies, legislation, and strong oversight institutions.
- Providing leadership, through its role as an ICT champion. This would be facilitated by Government being the front-runner in the use of ICT ("Charity

begins at home”). Governments can fuel demand for ICTs by being a visible user of the technology which can lead to increased government efficiency.

Comprehensive *e*-government initiatives would facilitate:

- convenient access to government services;
- improve accountability and transparency of Government and its operations;
- present Government as a single entity;
- empower individuals and communities;
- strengthen the competitiveness of the country;
- ensuring the effective participation of Swaziland in global fora on ICT/Internet governance.

Objectives:

The objectives relating to strategic leadership are as follows:

- To develop an ICT policy and regulatory framework and create institutions that would enable the co-ordination of the country’s ICT efforts/initiatives;
- To improve service delivery to the people of Swaziland, through the effective use of ICT;
- To create awareness across all sectors of the Swazi society on the role and potential of ICT in national development (economic, social, political and cultural);
- To create an enabling ICT investment environment which would foster strong co-operation and partnerships among all stakeholders at local, national, regional and international levels;
- To develop a robust *e*-government programme that would promote the use of ICT across all ministries and departments, with a deliberate gender bias;
- To encourage the increased use of ICT in all sectors of the Swazi economy; and
- To facilitate the participation of Swaziland in regional and global Information Society activities.

Challenges:

- Creating awareness among political leaders on the importance of political championing of ICT;
- Creating effective policy and mechanisms for leadership and co-ordination of ICT issues;
- Creating a conducive environment for the effective exploitation of ICT to improve service delivery to the people of Swaziland;

- Creating awareness across all sectors of the Swazi society on the role and potential of ICT in national development (economic, social, political and cultural);
- Prioritisation of investment in ICT (national budget and development/partner support);
- Effective stakeholder participation in ICT policy-formulation and governance activities in national, regional and international fora.

Policy Statements:

- provide a clear vision and leadership role in the promotion and the development an inclusive and sustainable Information Society (IS) in a convergent environment;
- recognising the importance ICT as a catalyst for development, provide strategic leadership for ICT and promote ICT as a key strategy for national development and an effective instrument for empowering citizens to improve their quality of life;
- create enabling policy, legislative and regulatory frameworks, that will ensure the proper leadership and co-ordination of ICT issues, and the utilisation and exploitation of ICT in all sectors of life;
- dedicate an appropriate budget and resources for ICT investment in order to improve ICT access and deployment;
- promote bilateral relations and co-operation with regional, and international organizations that generate, process, store and disseminate ICT driven information in order to expand and strengthen local ICT capacity; and
- apply ICT to improve the delivery of services to the people of Swaziland.
- support the use of free and open-source software (FOSS) in the development of e-strategies and plans;
- support the development of updated websites for Government departments;
- enable public, private and community sector partnerships through business incentives for both local and foreign investors including market entry at cost competitive prices;
- Providing a basic efficient and cost-effective infrastructure backbone required for equitable access to national and international networks and markets. This includes requisite electric power networks etc;
- Mainstreaming ICT integration into national development plans/goals and enhancing the utilisation of ICT applications in Government offices;
- The implementation of ICT programs could inevitably negatively affect the employment market through possible job losses. The government will have to develop strategies which militate against this.

Targets:

- Streamlined leadership responsibility for ICT by the end of 2006;
- Approve the National ICT Policy by mid-2006;

- Establish effective legislative and regulatory frameworks (including oversight institutions) by the end of 2006;
- To promote indigenous SMMs through the acquisition of at least a 30% stake in all ICT procurement ventures by Ministries and departments by 2008;
- Develop a Government ICT Master Plan by the end of 2006.

2.5 Environmental Management

Issues:

Government recognises that environmental management is necessary for sustainable development and an ecological balance has to be maintained. Both the public and private sectors have to accommodate environmental considerations in their policies, strategies and programmes. They have to embrace environmental compliance procedures in their activities. Strong coordination mechanisms are required if compliance procedures are to be effectively monitored. To be able to achieve this, capacity building and education are critical. Information exchange will also play a vital role.

Objectives:

- Fully integrate environmental management and development planning;
- Initiate a collaborative coherent program approach with public and private sectors, each contributing in their area of expertise;
- Establish a national environmental mechanism for ensuring that the environmental priorities of national planning are observed and sought after;
- Coordinate, monitor and control environmental protection measures; and
- Carry out specific research and studies to develop methodologies and tools for the implementation of sustainable development;
- Develop the environmental data themes of the NSDI to support planning, implementation, control and evaluation of environmental programmes.

Challenges:

- Ensuring that environmental policy, regulation and legislation is in line with development;
- Building and retaining capacity in environmental management and the development of core environmental themes of the NSDI;
- Recognising the link between environment management and sustainable development;
- Establishing credible benchmarks/indicators for sustainable development;
- Cooperation among stakeholders since priorities may not differ; and
- Access to finance for the various programmes.

Policy Statements:

The Government of Swaziland will:

- encourage the use of ICT for effective monitoring, resource management and mitigation of environmental risks;
- support the use of ICT to increase access to, and awareness of, sustainable development strategies in areas such as agriculture, sanitation and water management, tourism, etc;
- encourage the use of ICT for greater transparency and monitoring of environmental abuses/enforcement of environmental regulations;
- support the use of ICT to facilitate knowledge exchange and networking among policy makers, practitioners and advocacy groups;
- support the initiation of actions and implementation of projects and programmes for sustainable production and consumption and the environmentally safe disposal and recycling of discarded hardware and components used in ICT;
- support the development of updated websites particularly for the critical stakeholders; and
- support the development of core environmental data sets.

Targets:

- Create a technical nucleus to repair and maintain (recycle) ICT equipment by the end of 2006;
- Develop a 3-5 year programme to create awareness/attitude change nationally by 2006;
- Build connectivity and websites for knowledge sharing and network among the key stakeholders by 2007;
- Develop anti-dumping policies and standards by 2008; and
- Develop a strategy for ICT capacity building and retention by 2007.

2.6 The Financial Services Sector

Issues:

Swaziland generally lags behind in terms of developing and/or adopting new ICT systems and technologies aimed at improving the delivery of financial products to the public. For instance, it takes local institutions more than two years to adopt technologies used in the region (SADC) and in particular, neighbouring South Africa, even though most of the financial institutions are subsidiaries of South African financial institutions.

Financial services, in particular banking, seem rather too far and not easily accessible to the people, especially in the rural or semi-urban areas. It becomes of paramount importance that strategies are devised to ensure that banking is accessible to the people. This brings to the fore the concept of satellite banking which could address some of the access difficulties e.g. rural farmers, rural SMME's etc encounter.

It is also noted that the current customer interface facilities, such as ATMs, do not provide for the illiterate and in some cases, disabled members of society. Information on financial institutions' products, rates and charges is not easily accessible or available for public consumption.

Objectives:

- To ensure that Swaziland has a stable and well developed financial services sector with adequate capacity, systems and technologies for the effective and efficient delivery of financial services and products;
- To ensure that the financial sector operates in a coherent and well managed environment;
- To ensure that electronic payments systems are introduced and have key functionality for the security and certainty necessary for electronic transactions;
- To ensure that the financial services sector avails access to affordable finance and credit, with equal access to both men and women;
- To ensure that the goods and services the institutions offer cater for the disabled and illiterate among others; and
- Being ICT intensive, the sector is to ensure ICT skills development of all their staff regardless of rank.

Challenges:

- There is currently no focused drive or willingness to explore, exploit and share in the development or acquisition of expensive technologies and infrastructure necessary for a wide and more efficient delivery of financial products and services, but instead it would seem that competition takes precedence. For example, there is no single and common ATM switching facility to allow customers to use ATMs that do not belong to their banks. Even the switching for credit cards is done in South Africa such that local banks do not own or issue credit cards;
- Indications are that a large number of the Swazi population is currently "unbanked". Even though taking on clients is a business decision, every organization and sector in the economy has some level of social responsibility, and therefore ways and means must be explored to assist this populace falling in the "unbanked" category. Technology could be used to avail affordable services to this category;
- There is currently no evidence to indicate that the financial sector has adopted best/good ICT practices and ICT Governance to inspire confidence in the financial sector;
- There is currently no legislation specifically addressing *e-commerce*, *e-trade*, *e banking*, etc, security and digital signatures. It is necessary that such legislation is developed to promote the use of technology in the *e space* in Swaziland;
- Global trends in the areas of *e-cards*, *e-money*, etc, pose a serious challenge to how Swaziland positions herself and develops its clearing and payment systems.

Clearing times have to be improved and real time payment, clearing and settlement systems have to be introduced to improve the flow of funds and capital and reduce inherent risks;

Policy Statements:

The Government of Swaziland will:

- Encourage the financial sector to pursue a policy of expediting the development and adoption of new systems and technologies aimed at improving the delivery of financial products and services and to ensure that more products and services are offered using the same in a manner that is cost effective for the financial institutions and customers;
- Encourage the financial services sector to develop mechanisms to share in the development, acquisition and deployment of expensive technologies and infrastructure (for example ATMs, satellite banks, clearing and payment systems) necessary for a wider and more efficient delivery of financial products and services;
- Encourage every institution in the financial services sector to fully ascribe to, adopt and practice best practices and ICT Governance to ensure the proper management of the ICT infrastructure, security of customer information, and good and tested Disaster Recovery Plans (DRP) to inspire confidence in the financial sector and a good rating for the country as a whole;
- Encourage the financial services sector to also continuously seek ways of exploiting and using technology to broaden its reach to the public, in particular the so- called “unbanked” members of society;
- Encourage that global trends and developments in the “e” space be closely monitored to ensure that Swaziland does not fall far behind in the development and use of technologies in the “e” space (for example e-banking, e-cards, e-money, e-commerce, etc). The modernization of the clearing and payment system shall be pursued more aggressively to ensure easy and fast flow of funds and capital, whilst reducing the inherent risks;
- Encourage the adoption of systems and technologies to make the products and services, rates and charges of different financial institutions transparent thus providing for a more competitive environment and helping customers make more informed decisions;
- Encourage the financial services to develop policies to ensure that as much as possible, all technologies and facilities are accommodative of the illiterate and disabled members of society; particularly in terms of language used and general ergonomics;
- Fast-track the enactment of Electronic Communications and Transactions Bill (ECTB, Cyber Law);

- Encourage the sector to provide access to affordable finance and credit to both men and women ICT entrepreneurs;
- Encourage the financial services sector, as ICT intensive, to provide niche opportunities local enterprises especially the SMMEs; and
- Encourage the sector to provide ICT skills development to all their employees regardless of rank.

Targets:

- All financial institutions to develop websites and offer most of their services via electronic means by 2009;
- All financial institutions to reduce average costs per electronic transaction by 25% by 2010;
- All financial institutions to fully develop and implement ICT Governance by 2010;
- To bring on board at least 30% of the “unbanked” population by 2010;
- To have at least two local credit and debit cards by 2010;
- Enact the Electronic and Communications Transaction (ECTB) Bill by 2007;
- To operationalise a local inter-bank ATM switch by 2009;
- To promote local SMMEs by ensuring that they acquire at least 30% stake in all ICT procurement ventures by local financial institutions by 2008.

2.7 Media

Issues:

The Government is committed to freedom of the press and recognises that freedom of the press is an essential ingredient for good governance. One of the imperatives of ICT development and use is the creation of awareness and positive attitudes towards ICT. Thus, the media have an essential role to play in the development of the Information Society and are recognised as an important contributor to freedom of expression and plurality of information. In addition to being an essential means for information dissemination, the mass media plays a critical role in spreading awareness of the importance and benefits of the information revolution. Given the extent to which radio is available to the majority of the population in developing countries such as Swaziland, wider access to ICT can be achieved via this medium. Newspapers, radio and television provide an easy, accessible and cheap means of carrying information to end-users. Communities need not wait for the Internet to receive much of the information it conveys. ICT will only become relevant for sustainable development when it provides content (value) to the end user. The mass media can access many of the existing sources of information and provide broad channels of communications to the poor and to remote areas.

Objectives:

- To increase awareness of and change of attitude towards ICT;

- To develop legislation to put in place a Freedom of Information Act;
- To develop a very robust media sector that uses state of the art technologies to reach all sectors of the population; and
- To develop content and applications which are responsive to user needs and local conditions.

Challenges:

- Converting state broadcasting stations to public;
- Creating broadcasting stations with diversity ownership;
- Creating a conducive environment to encourage indigenous entrepreneurs to establish media institutions for pluralism and promotion of independent media;
- Combating illegal and harmful content; and
- Allocating adequate resources to media to ensure that benefits of ICT are reaped.

Policy Statements:

The Government of Swaziland will:

- Support and encourage the development and use of ICT (both traditional and new), to assist the media in promoting the use of ICT in order to narrow the digital divide and to assist the country in meeting the objectives and priorities enshrined in the National Development Strategy (NDS), Smart Programme on Economic Empowerment Development (SPEED), Millennium Development Goals (MDGs) and the extract of the Early Poverty Reduction Strategy (EPRS);
- Encourage media to develop and promote ICT local content and the strengthening of cultural values of the Swazi society. (Essentially it seeks to embrace the acceptance of cultural diversity);
- Support the use of ICT for the drive towards a proactive and pluralistic yet responsible media society enabling all sectors of society to fully participate in the fight against poverty, unemployment and diseases such as HIV/AIDS;
- Encourage the use of ICT by media in the promotion and improvement of access to information by all sectors of society; and
- Support the use of ICT for the development of capacity within the media sector to ensure proper utilisation of ICT.

Targets:

- Ensure that licensing mechanisms for community radio stations are in place by 2006;
- Ensure 100% radio coverage by 2009 and with appropriate ICT content;
- Ensure 90% television coverage by 2006 and with appropriate content;
- Adapt the Siswati screens concept from the National Media Institute of South Africa (NEMISA) by 2007;
- Ensure that necessary structures for ICT content development are in place by 2008.

2.8 ICT Industry

Issues:

The Swaziland Government is committed to promote and stimulate the ICT industry for the benefit of the people and enhancement of the economic development of the country. The current scenario of being a net importer of almost all ICT products – computers, communication equipment, software and related services must gradually be reversed. It is envisaged that an effective ICT industry will also address the digital divide issues both in country and internationally. Government recognizes that Swaziland is part of the global village and therefore should use ICT to ensure that she remains an integral part of the global village in developing the nation in this information age.

Objectives:

- To support the development of a viable ICT industry to facilitate research and development, manufacturing, content development and distribution of ICT products and services and employment creation;
- To enable the country to rely on ICT products that are locally produced to solve local problems;
- To support joint research and development programs between the private sector and tertiary institutions/universities for e.g. content, software development, products etc;
- To establishing mechanisms such as simplified processing of business registration/taxation, including tax holidays (for companies which demonstrate commitment to staff ICT capacity development) as incentives for industry growth;
- To support the establishment of industrial development zones and the promotion of technology incubators;
- Encourage entrepreneurship and specialist skills development to foster innovation and industry growth.

Challenges:

- Creating a legal environment that will raise investor confidence;
- The size of the market could deter potential investors particularly small and medium sized enterprises;
- The mismatch between the needs of industry, business and public services and the quantity and the quality of ICT professionals;
- The rapid evolution in the field of ICT requiring an ongoing review of the educational curricula the skills of professionals;
- Support for Research and Development activities in ICT.
- Establishing relevant technical and quality standards for the ICT industry in consultation with consumer bodies.

Policy Statements:

The Government of Swaziland will:

- Facilitate the development of an extensive pool of trained ICT human resources at all levels to meet sector demands - there is a need for mass human resource development (users, developers and managers). The population in general, must be adequately trained on applications and benefits of ICT and how it can improve the quality of life. The education curriculum will be updated to focus more on ICT at all levels and for all categories of the population. Grass root applications will be encouraged. Mechanisms that promote collaboration between industry and training institutions to build adequate human resources will be established;
- Support Research and Development in ICT - it is important that mechanisms for promoting and supporting efforts in Research and Development are established and private sector investment is encouraged in R&D in collaboration and cooperation with local institutions and the university. This will also entail the design of private-public partnership mechanisms and models with a clearly defined role for academia;
- Ensure the structures are in place to evaluate technology standards in the country - it is important that the selection of technology is relevant and suitable to our environment and must not deter acceptability and assimilation of the application. It is important that people see value in adopting the new technology. The dumping of obsolete and inappropriate technologies in the country will be avoided, as this becomes an unnecessary cost to the country in the final analysis. It is also important that software developers develop solutions for internal needs, as this would enhance visibility and recognition of local experts;
- Ensure equitable ICT access provision - access to information and communication technologies is critical for effective participation in the global information economy. National ICT access will be accorded priority to ensure that all citizens have equal access to both information and communications without prejudice. An integrated approach, without preference, will be encouraged by the government to ensure that all players have a role in delivering ICT in all communities;
- Provide for the establishment of an enabling legal and regulatory framework that takes into account the convergence of technologies - an enabling environment will support free market principles that promote competition for the benefit of the consumer. The net result of these principles will guarantee that ICT delivery is affordable to the end user.
- Lend support to regulatory harmonisation initiatives as a means to achieving broader regional integration objectives and strategies - there is a need to harmonise the ICT regulation framework with a view to consolidating and to rapidly stimulating sector growth. The need to review duties and import taxes on ICT equipment/software is critical to the success of the industry.

Targets:

- Review the Swaziland Investment Promotion law to ensure it attracts foreign investment by 2007;
- Develop awareness and readiness programmes by 2006;
- Introduce import duty and tax relief on ICT equipment by 2007;
- Introduce anti-dumping policies by 2008;
- Establish universal access targets by 2006;
- Conduct a survey to identify the needs of prospective SMME players in the ICT industry by 2007;
- To develop the ICT industry as a lead economic sector with an increased contribution to GDP by 2009.

2.9 Legal and regulatory frameworks

Issues:

The establishment of appropriate legal and regulatory frameworks and supply chains drives the success of developmental initiatives.

The role of government is to provide a vision and strategy, within a legal and regulatory framework that will promote the development of the Information Society and to ensure that all sectors of society can benefit from it. Inadequate regulation has been one of the limiting factor constraining *e*-economy and Information Society development. This does not simply entail the removal of regulations or regulators but implementing sound regulatory foundations as a prerequisite to attracting investment, fostering applications of new technologies and developing new services.

The speed of regulatory reforms must increase and be directed to stimulating investment in the infrastructure foundation for Information Societies.

Swaziland's regulatory policies will have a marked impact on the digital divide and the major challenge is the development and implementation of policies that create a favourable climate for stability, predictability and fair competition in order to attract private investment for ICT infrastructure development and the meeting of universal service obligations in disadvantaged areas.

- Government is desirous to create a conducive environment which will raise the level of investor confidence;
- Economic empowerment as envisaged in SPEED involves raising the capacity of various groupings to widen their choice horizon;
- The heavy dependence of the Swazi economy on agriculture calls for need to diversify into other sectors such as industry and services;
- E-commerce, albeit at a small scale, is already being utilised for some transactions e.g. B2B and B2C;
- Electronic payments via the Internet are currently occurring;
- Computer and Cyber crime is growing every year;
- Anti-competitive behaviour has been reported in some of the sectors of economy;

Objectives:

- Create a transparent and predictable climate for the private sector to invest in the country;
- Create an environment for the development and growth of *e-commerce*;
- Improve the regulation of the communications sector (including broadcasting);

Challenges:

- Non-existent legal and regulatory framework in a converging ICT market structure. Regional and global trends in ICTs have recognised the need for the regulation of telecommunications, broadcasting, postal and other services;
- Creation of a competitive environment and a level playing field that not only encourages local and foreign investment in the ICT sector, but eliminates entry barriers for new players;
- Affordable universal access to ICT products and services;
- The cross cutting nature of ICTs requires expertise from different fields of specialization and thus capacity building is required in addressing some of the diverse issues.

Policy statements:

The Government of Swaziland will:

- Take the necessary actions to facilitate the development and implementation of the legal, institutional and regulatory framework and structures to support the deployment, utilization and development of ICTs;
- Liberalize the telecommunications sector by opening up markets for competition thereby attracting private investment;
- Establish appropriate legal frameworks on cyber security and establish appropriate structures for managing the Internet in Swaziland;
- Improve the governance of ICTs by creating a regulatory body for the ICT industry and provide for an adequate dispute resolution mechanism for legal and regulatory issues;
- Encourage the formulation of harmonised regulatory policies in line with other countries in the region to enhance cooperation.
- Regularly review policies and legislation to facilitate the introduction of new services and technological innovation.

Targets:

- Enact the Telecom and Postal bills by mid-2006;
- Establish a privatisation plan for the fixed network operator by 2007;
- Operationalise the Competition Act by the end of 2006;
- Operationalise the privatisation policy by the end of 2006;
- Update the Companies Act by 2006;

- Constitute a multi-stakeholder group to manage the domain name by the end of 2006;
- Carry out a due diligence audit of all laws or sections of laws that may be affected by cyber laws by 2006;
- Enact a Personal Data Protection Act by 2007;
- Create an independent regulator by 2007;
- Set up a team to draft Cyber Law by 2006;
- Prepare and enact the Electronic Payments and Transaction Bill (Cyber Law) taking into account - Digital contracts and signatures, security, public/private key infrastructure, encryption, personal data privacy protection, security and certainty of electronic payments transactions, exchange control, copyright and intellectual property rights, ISPs liability limitation, taxes and tariffs for electronic payments, duties and import tariffs, computer crime and fraud, telemedicine liability limitations, consumer rights etc. by 2008;
- Institute relevant capacity building programmes for law enforcement agencies, magistrates, prosecutors and judges, in the relevant areas by 2006.

CHAPTER 3

Monitoring ICT developmental impact

A methodological and organisational framework will be set-up to evaluate and to monitor ICT Policy impact on economic growth, poverty reduction, ICT literacy, infrastructure development and any other relevant parameters. Periodic review of the Policy will be undertaken to match sector dynamism with national objectives.

The WSIS Plan of Action emphasised the need for countries to incorporate within their respective national ICT for development plans, provisions for monitoring and evaluating the implementation of the plans with a view to measure their impact and progress towards the development of the Information Society and economy within the respective countries.

Monitoring and evaluation of ICT policy impact will be a continuous process and requisite amendments will be effected according to the evaluation. The collection of such indicators will fall under the ambit of the National Statistics Office (NSO). The set of indicators collected will be regularly reviewed to streamline them with national needs.

3.1 Awareness and attitude change

Access to information and knowledge is a prerequisite to achieving the Millennium Development Goals (MDGs), and in turn, improving living standards for the Kingdom. In order to enhance appreciation to this important ICT role, a comprehensive promotion and awareness campaign will be undertaken to enable inclusive participation and contribution towards wealth creation and national development.

Some of the campaign strategies will include:

- Awareness workshops/briefings to promote ICT diffusion, and utilization;
- Extensive use of the electronic and print media to convey ICT benefits;
- Introducing hands-on usage of ICTs /applications especially in marginalized areas such as rural areas e.g. telecentres;
- Organising training workshops for marginalized groups including women;
- Websites development for all Government offices;
- Training of ICT users especially in the civil service;
- Creating an environment for public and private sector participation in promoting ICT awareness programs.

3.2 Cyber security

Embracing ICT as a tool for development heralds a lot of benefits, but it also becomes of paramount importance to take into consideration possible negative consequences.

The implementation and attended efficiency of any ICT strategy should be supported by appropriate legislation on electronic transactions, data security, network security, cyber crime etc. Cyberspace describes the non-physical/virtual space where interaction takes place between computer networks. Cyberspace is not restricted to the Internet but includes, computers, computer networks, data, software etc. Cyber law governs the legal issues of cyberspace and encompasses laws relating to:

- **Electronic and digital signatures** - to facilitate the development of e-commerce and for the authentication of electronic records, electronic data interchange emails etc. Comprehensive laws are required such that uniform standards and procedures can be established;
- **Computer crime** - to legislate on computer crimes or adapt existing laws to make computer crime an offence under existing statutes;
- **Intellectual Property Rights (IPR)** - IPR is becoming critical in developing countries where reproduction and distribution of creations can occur with ease and impunity. The Information Society requires an effective, balanced protection of intellectual property rights, and a technical and legal infrastructure to provide a balance between the rights of creators, inventors and other owners of IPR and the legitimate needs and expectations of users of the subject matter protected by IPR. The Ministry of Justice, which is responsible for IPR matters, should ensure that the legal system required for IPR is in place/updated.

Intellectual Property Law includes:

- Copyright law – in relation to computer software, source code etc;
 - Trademark law – in relation to domain names;
 - Semiconductor law – which relates to the protection of semiconductor design and layouts (ICT industry);
 - Patent law – in relation to computer hardware and software.
- **Data protection and privacy laws** – legislation to protect the fundamental rights of privacy of all citizens. This includes threats posed by hackers, crackers, cyber stalkers etc.
 - **Telecommunication laws** – telecommunication systems also fall within the ambit of cyberspace and form an integral part of cyber laws.

The specific issues on cyber security will fall under the relevant pillars as identified in the fore-going section.

CHAPTER 4

Financing the implementation process

The prerequisite for the creation of an information-based economic structure is the existence of an efficient information infrastructure and services, the inadequacy of which, has been one of the main constraints to the accessibility of the Kingdom to the global information infrastructure.

The development of the information infrastructure poses a major challenge in terms of the massive capital outlay required. A comprehensive Policy will therefore successfully stimulate investment in the appropriate infrastructure, and in turn, affordable, sustainable services. It is important that this is coupled with appropriate human resource development strategies. The requisite investment should therefore be in place in order to guarantee successful implementation of the Policy. This requirement always competes with other national priorities which take centre stage in the queue for scarce national resources e.g. poverty alleviation priorities etc.

The challenges to be addressed in the financing of ICT initiatives include:

- Lack of policy makers awareness of the role ICTs play in accelerating socio-economic development;
- Scarcity of financial resources to implement ICT programmes;
- Lack of a consultative approach (stakeholder/private sector/partnerships) in the formulation of national development strategies;
- Lack of an enabling environment and incentives for the attraction of would be investors.

4.1 The role of the Private Sector

The government does not have the resources to provide all the necessary tools and solutions. While some resources are best provided as public goods, in an infrastructure environment, there are others that can be provided more effectively and efficiently by the business community.

The local private sector will be encouraged to pursue a more proactive role in the formulation of Policy and national plans and strategies to promote the Information Society. The private sector, in most cases, is well positioned to facilitate the development and implementation of various ICT applications through innovative financing schemes. It is important that the Government facilitates the participation of the public and private sectors, industries, operators, non-government organisations, professionals, social organisations, civil society, the communications industry in developing widespread ICT networks.

The World Summit on Information Society (WSIS - Geneva 2003) re-affirmed the role of the private sector by noting that, “the commitment of the private sector is important in developing and diffusing information and communication technologies

(ICTs), for infrastructure, content and applications. The private sector is not only a market player but also has to play a role in a wider sustainable development context”.

The scenario in developed countries is that the private sector is the prime mover in the development of ICTs. On the local front, the African Regional Action Plan for the Knowledge Economy (ARAPKE) also alludes to the important role to be played by the private sector in developing an all-inclusive Information Society in Africa. It cites the need to put in place a critical mass of business ventures capable of supporting the development and use of the information infrastructure. The attainment of an inclusive Information Society in Swaziland will be as a result of public policy working in concert with private initiatives. In order to support increased participation of the private sector, the Government will facilitate investments and promote Public Private Partnerships (PPP's), especially for Small, Medium and Micro-sized Enterprises (SMMEs) which play a very important role in ICT development and usage in most African countries.

PPP's are able to address the challenges of infrastructure development facing Swaziland. Equitable access to infrastructure and content is most likely to be achieved through the combination of the specific strengths and resources of partnerships. Universal access requires new networking and business models utilising synergies between public and private partnerships. These synergies will not only allow Swaziland to succeed in bridging the domestic and regional digital divide, but will also create profitable business and employment opportunities in the ICT sector.

The PPP scenario ensures that parties strategically aggregate resources and competencies to effectively tackle the key challenges of ICT as an enabler of sustainable development. The risk, costs and attendant benefits are shared. This approach offers a solution to reducing the duplication of efforts, competition and wastage of meagre resources, whilst enhancing the implementation of national programmes that are structured, cost effective, long term and sustainable.

There are different models of public private sector partnerships that can be used symbiotically to achieve desired results. These can include lease agreements or concessions e.g. BOT (Build-operate-transfer), BTO (Build-transfer-operate), BOO (build-operate-own) etc. There is therefore a need for alliances between parties drawn from government, business and civil society etc with the realisation that no one party can individually guarantee development.

4.2 The role of Government

Government's role in the financing of ICT will include the dedication of an appropriate budget and resources for sustaining this crosscutting development-enhancing sector and the establishment of a conducive/enabling environment in the form of policy, legislation and regulation to attract investment. Public financing is required to build the backbone and distribution infrastructure, to develop human capacities, to support community-driven approaches, etc. In this context, the Government will allocate a percentage of national budgets to ICT activities in various

ministries, departments and agencies. In addition, funding from development assistance frameworks will be mainstreamed in various ICT programmes.

4.3 Other players

International development partners will have a role to play in integrating efforts to bridge the digital divide through foreign investments and support. The government will facilitate the establishment of an enabling environment to attract foreign direct investment (FDI), as this is an important engine for development, job creation and technology transfer.

The establishment of an ICT Universal Service Fund to cater for infrastructure deployment in rural/remote and unserved areas will be facilitated. This will be established as a way of implementing the policy of universal access through universal service obligations stipulated in licenses of the major operators.

Financing models will also be explored from within the local arena. The stock market, insurance companies, financial services sector e.g. asset management companies, the banking sector, and professionals from the Diaspora all view the ICT sector as an opportunity for investment and thus could play an important role.

Part 3
The Plan

CHAPTER 5

The Implementation Plan

This National Policy does not in any way override or substitute on-going multi-sectoral ICT activities/initiatives. Each of the sectors should therefore continue to formulate action plans for implementing the relevant sections of this Policy. The Implementation Plan is therefore an aggregation of sectoral plans which the Swaziland Government will support through the national budgetary process.

In drawing up the implementation programmes in each of the priority areas above, the following crosscutting issues would be taken into account to ensure a balance between technology and social development.

The successful realisation of the NICI Policy will be based on an implementation strategy that takes into account the identified priority areas. The responsibility for the implementation of the policy and project/programmes will lie with the government working in close partnership with the private sector and civil society and the involvement of all individuals and national institutions. It is important therefore to identify institutional structures for the implementation of the ICT policy. The structural transformation of ICT institutions is essential in order to achieve the targets that have been set for the growth of ICT services in an investor-friendly environment conducive for rapid development.

The key objectives of the institutional framework will be to:

- Allocate clear roles and responsibilities to key role-players (Government, regulators, investors, operators and service providers, consumers/users);
- Promote an investor-friendly environment whilst creating a level playing field;
- Introduce and promote competition;
- Promote market growth;
- Promote ICT diffusion, universal service and access.

Information and communication technologies are central to economic innovation and provide the opportunity for Swaziland to embrace the twin goals of economic innovation and ICT for development.

As much as possible, there will be a need to put a mechanism in place to ensure that the policy is reviewed from time to time through stakeholder consultative mechanisms.

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