Republic of Mozambique

Information & Communication Technology Policy
Implementation Strategy

Toward the Global Information Society

Approved by the Council of Ministers
on 27 June 2002

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"Today's world is profoundly marked by the technological revolution in information and communication… In this information era, the capacity to effectively and efficiently use information and communication technologies determines ever more the competitiveness and relevance of a country in the global economy."

— *Mission Statement of the ICT Policy approved by Resolution No. 28/2000, 12 December 2000, Council of Ministers*

COMISSÃO PARA A POLÍTICA DE INFORMÁTICA

UNDP

GLOBAL DIGITAL OPPORTUNITY INITIATIVE
INFORMATION AND COMMUNICATIONS TECHNOLOGIES FOR DEVELOPMENT: STRATEGIES AND SOLUTIONS

IDRC

PREFACE

Information and Communication Technologies (ICTs) are today universally recognised as the driving force of the Global Information Society and of the knowledge-based economy, as well as a decisive lever to promote the rapid and sustainable growth of countries in the process of development.

It is, however, a reason for great concern that up to the present time the potential of ICTs is still not benefiting the large majority of developing countries but is, on the contrary, deepening the digital divide between the industrialised and the poor countries. Of the seven billion people in the world, more than four billion are totally excluded from the benefits of the information society-the majority of which are in Africa-despite the fact that access to information has been declared a fundamental human right.

It is, therefore, urgent that decisive and concerted action be taken at national, regional and international levels to remove the present obstacles, promote investment in infrastructure, connectivity, applications and training networks, and create content that reflects the values and aspirations of a broad cross-section of the people in each society.

Initiatives such as the Digital Opportunity Task Force of the G-8 governments, the ICT Task Force of the United Nations, the African Information Society Initiative (AISI), the New Partnership for Africa's Development and many others are important steps in the right direction. They deserve the support of all countries, governments and international development organizations.

In giving approval to a national ICT Policy, the Government of Mozambique has convincingly joined this international effort and shown that it is determined to make ICTs a real lever for the country's sustainable development.

However, any policy-no matter how well-formulated-will soon fade into the mists of time if not accompanied by an implementation strategy and action plan which, in the light of the objectives and priorities established, show clearly what has to be done, who will lead it, how it will be accomplished, when the key steps will be taken, the conditions necessary for its realisation, and how to articulate the various interventions. That is what the ICT Policy Implementation Strategy seeks to do.

The National Enquiry into the Informatics Capacity of the Country, undertaken as part of the effort in setting out the ICT Policy, presented a clear image of how far Mozambique has to go to become a relevant part of the Global Information Society and how great the effort must be to correct the present imbalance whereby more than 70% of the national informatics capacity is concentrated in the capital of the country.

The Implementation Strategy is intended to make ICTs into decisive levers to achieve the objectives of the government's Action Programme for the Reduction of Absolute Poverty (PARPA) and to fully realize the objectives of the ICT Policy, namely to:

- ❑ contribute to reducing absolute poverty and improve the lives of Mozambicans;
- ❑ contribute to the fight against illiteracy and accelerate the development of human resources;
- ❑ provide people with universal access to information and world-wide knowledge;
- ❑ raise the effectiveness and efficiency of public and private sector services;
- ❑ improve governance and public administration;
- ❑ create a legal and business environment favourable to the production and dissemination of ICTs; and
- ❑ make Mozambique an active and competitive partner in the Global Information Society and the world economy.

On the basis of these defined objectives, concrete results should be achieved that will make a difference in the activities of institutions and people throughout the country.

This ambitious strategy will not be successful without active effort, hard work and cooperative energy on the part of all stakeholders and partners in the whole of the national territory. These include state institutions, the public and private sectors, informatics and telecommunication industries and services, academic and research institutions, non-governmental organisations, and civil society in general. It is important to emphasise the role that the big informatics and telecommunications companies can play in this process, in conjunction with the national private sector, to exploit business opportunities and new markets, to stimulate economic growth and to contribute to the lessening of the digital divide.

Representatives of all interested parties and of the international community gave valuable contributions for this strategy in consultations that culminated in the International Symposium and in Provincial Workshops about the ICT Policy Implementation Strategy, all of which gives us more certainty about the opportunity for and practicability of the proposed actions. In this respect, it is necessary to stress the privileged position that the international telecommunications and computer multinational corporations have-in conjunction with the national private sector-to benefit from the excellent business opportunities and new markets while simultaneously spurring economic development and contributing to the reduction of the digital divide.

As expressed in the ICT Policy, the implementation of this process will require significant resources, but the costs of doing nothing or of postponing action until some undefined future point, will be even higher. For this reason, the government will do everything in its power to allocate resources to this programme and to mobilise its international partners to give these national efforts their indispensable financial, material and technical support.

Only in this way will the ICT Policy make a decisive contribution to the realisation of the objectives and priorities of the government in reducing poverty, improving living conditions for the people, and making Mozambique a fitting participant and partner in the Global Information Society.

Maputo, 3 July 2002

The Prime Minister

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ABBREVIATIONS AND GLOSSARY

AIDS	Acquired Immune Deficiency Syndrome
AISI	African Information Society Initiative
Backbone	Basic Infrastructure serving as the "backbone" for the telecommunications network
CITENET	Science and Technology Network Project
CIUEM	Eduardo Mondlane University Informatics Centre (*Centro de Informática da Universidade Eduardo Mondlane*)
CIRESP	Interministerial Commission for the Public Sector Reform **(***Comissão Interministerial da Reforma do Sector Público*)
DNIC	National Directorate for Civil Identification **(***Direcção Nacional de Identificação Civil*)
CPInfo	ICT Policy Commission (*Comissão para a Política de Informática*)
CPRDs	Provincial Digital Resource Centres (*Centros Provinciais de Recursos Digitais*)
DOT Force	Digital Opportunity Task Force
e-SISTAFE	State Financial Management System Project
Franchising	Authorization to sell or distribute a company's goods or services in a certain area
FDC	Foundation for Community Development (*Fundação para o Desenvolvimento da Comunidade*)
G-8	Group of the 7 most industrialised nations plus Russia
Gateway	Data entry and exit point between computer network using different communication protocols
GDOI	Global Digital Opportunity Initiative (a joint iniciative of the Markle Foundation and the United Nations Development Programme)
GovNet	Goverment Electronic Network Project
Hardware	Physical elements of computers and related devices. The term arose as a way to distinguish the "box" and the electronic circuitry and components of a computer from the program installed in it to make it work.
HIV	Human Immunodeficiency Virus
IDRC	International Development Research Centre (Canada)
ICTs	Information and Communication Technologies
INCM	Mozambique National Institute of Communications (*Instituto Nacional das Comunicações de Moçambique*)
INE	National Statistics Institute (*Instituto Nacional de Estatística*)
INTELSAT	International Organization for Satelite Communication
Internet	An interconnected system of networks that connects computers around the world via the TCP/IP protocol.
ISDN	Integrated Services Digital Network: a set of international standards for digital transmission over digital telephone lines at the speed 64-128 Kbps and a better signal
ISP	Internet Service Provider
MADER	Ministry of Agriculture and Rural Development (*Ministério da Agricultura e Desenvolvimento Rural*)
MAE	Ministry of State Administration (*Ministério da Administração Estatal*)
MESCT	Ministry of Higher Education Science and Technology (*Ministério do Ensino Superior Ciência e Tecnologia*)
MICTI	Mozambique Information and Communication Technology Institute

MINED	Ministry of Education *(Ministério da Educação)*
MISAU	Ministry of Health *(Ministério da Saúde)*
MTC	Ministry of Transport and Communications
NEPAD	New Partnership for Africa's Development
NGO's	Non-Governmental Organizations
Outsourcing	Use of services or products from an outside supplier or manufacturer in order to cut costs and enable the organisation to concentrate on its primary activities
Packet Radio	A wireless communication service based on packets, that is used in mobile telephones and amateur radio stations for the transmission of electronic mail and conversation not done in real time
PARPA	Plan of Action for the Reduction of Absolute Poverty *(Plano de Acção para a Redução da Pobreza Absoluta)*
RASCOM	Regional African Satelite Communications Organisation
SADC	Southern Africa Development Community
SchoolNet	Project to connect schools to the Internet
SDH	Synchronous Digital Hierarchy
SIDA	Swedish International Development Agency
SIP	State Personnel Information System *(Sistema de Informação do Pessoal do Estado)*
Snail mail	Term used by many e-mail enthusiasts to describe the physical mailing of letters or information (regular postal service mail), which is slower than the electronic mail
Software	General term for the various kinds of programs used to operate computers and related devices
STAE	Technical Secretariat for Electoral Administration
Store-and-Forward	Expression used in communications systems in which messages are received at intermediate routing points and recorded, and then transmitted to the next routing point or to the ultimate recipient.
TDM	Telecommunications of Mozambique, E.P.
TeleMOZ	A telecommunications project that aims to set up gateways, provincial governmental networks, and access to the Internet
UEM	Eduardo Mondlane University *(Universidade Eduardo Mondlane)*
UNDP	United Nations Development Programme
UN ICT Task Force	United Nations High-level Working Group on ICTs
UTRAFE	Technical Unit for the Reform of the State Financial Management System *(Unidade Técnica da Reforma da Administração Financeira do Estado)*
UTRESP	Technical Unit for the Public Sector Reform *(Unidade Técnica da Reforma do Sector Público)*
VSAT	Very Small Aperture Terminal: a small-scale terminal for receiving communication signals via satellite
Wi-Fi	Wireless Fidelity: another name for IEEE802.IIb. It refers to an over-the-air connection with a wireless client and a base station or between two wireless clients.
WLL	Wireless Local Loop: a telecommunications service that uses wireless networks to carry communications from the wired subscriber network. Various terminals in the home or office are connected with the telephone company wirelessly. The service covers voice, fax and video data transmissions.

EXECUTIVE SUMMARY

The ICT Policy Implementation Strategy has its antecedents in the Government Programme 2000-2004, the Action Plan for the Reduction of Absolute Poverty, and the ICT Policy. The ICT Policy identifies six priority areas: education; human resource development; health; universal access; infrastructure; and governance.

This strategy thus provides the operational framework to support the phased implementation of a series of short-, medium- and long-term priority projects in the six priority areas specified in the ICT Policy.

The strategy recognises three major challenges to achieve the rapid spread of the use of ICTs in Mozambique:

- ❑ increase of the base of human resources with solid skills in ICTs and their availability throughout the country;
- ❑ expansion and modernisation of the telecommunications infrastructure in the country; and
- ❑ acceleration of the process of defining the telecommunications policy and the reform of this sector so as to facilitate free competition and attract investment.

The strategy aims at overcoming these constraints in the long run while defining, in the short run, programmes that maximise the use of available local skills and infrastructure.

By concentrating skills and investment, the proposed Provincial Digital Resource Centres (CPRDs) aim to stimulate the demand for ICT goods and services throughout the country. The centres are part of a communication network and not its final point; linkages to the district level will be provided through radio, Internet, and the written press. At the same time, inexpensive technological options for rural access, including VSAT, packet radio and store-and-forward will be pursued.

Applications, content and services will be developed within the scope of the centrally managed programmes and disseminated by the provincial centres, government offices, telecentres and other ICT points of access. The central government will also define rules and regulations about all the issues and legal standards (across a spectrum from telecommunication for clients to the licensing of small businesses) that presently inhibit the effective application of ICTs in various sectors, and put in place mechanisms to build human capacity and stimulate research and development.

Through this integrated programme approach, the strategy aims to:

- ❑ expand the availability of and access to content and applications to address the needs of the principal areas of development sectors identified by the ICT Policy and PARPA;
- ❑ create and offer an enabling environment to encourage the expansion of innovative ICT activities in the private sector;
- ❑ promote ICT use within the government and civil society organisations;
- ❑ speed the expansion of infrastructure throughout the country; and
- ❑ expand the national base of ICT skills.

The fundamental rationale for this approach lies in its capacity to develop catalytic actions through the concentration of ICT resources existing in the provinces and central institutions. These concerns include:

- ❑ increasing the efficiency, transparency and accountability of government's own processes and services;
- ❑ improving communication and information exchange between national and provincial governments;
- ❑ improving communication and information exchange between people and the government; and
- ❑ increasing demand for ICT services as a way of stimulating ICT private sector growth.

Projects in the six priority areas of the ICT Policy are presented in an integrated form through short-, medium- and long-term projects so as to respond to the needs to create human capacity, develop and modernise the infrastructure, produce contents and applications, increase the efficacy of governance, and create a legal environment conducive to entrepreneurial development.

Here, in summary, are the principal projects to be implemented:

■ Long term   ■ Medium term   ■ Short term

Areas	No.	Name of the project	2001	2002	2003	2004	2005+
Human resource development	1	ICT Curricula and Certification		S	S		
	2	SchoolNet: Internet for Schools	M	M	M		
	3	ICTs for Fighting Illiteracy		S	S		
	4	Mozambique Institute of Information and Communication Technologies (MICTI) - Phase I		M	M		
	5	Youth Programme for Content Development		S	S		
	6	Mozambique Institute of Information and Communication Technologies (MICTI) - Phase II		L	L	L	L
Infrastructure	7	National Transmission Network	L	L	L	L	L
	8	Modernisation and Expansion of the Digital Trafic Centres (South, Centre and North)	S	S			
	9	Modernisation of the Maputo & Suburbs Transmission Network	M	M	M		
	10	VSAT Communication Network		M	M		
	11	Telecentres		M	M		
	12	Digital Agencies	S	S			
	13	VSAT Stations		S	S		
	14	Universal and Affordable E-mail Access		S	S		
	15	TeleMOZ: Provincial Gateways, Network and Internet Access	M	M	M		
Contents & Applications	16	Information System for HIV/AIDS		M	M		
	17	Knowledge Base for Science and Technology		M	M		
	18	Distance Education		L	L	L	L
	19	ICT Country Knowledge Base		S	S		
	20	Science and Technology Network (CITENET)		S	S		
Governance	21	Public Servant Information System (SIP)	S	S			
	22	Government Electronic Network (GovNet)		L	L		
	23	Civil Identification System	M	M			
	24	Electoral Processes Management System	M	M			
	25	State Financial Management System (e-SISTAFE)		M	M		
	26	Health Information System (HealthNet)		L	L	L	L
	27	Country Development Gateway		S	S		
	28	One-Stop Shop		M	M	M	
	29	Digital Land Register		S	S		
	30	ICT Survey in Public Instituitions		S	S		
Policy & Regulation	31	Capacity Building: ICT Policy Commission Secretarial		S	S		
	32	Capacity Building in INCM		M	M		
	33	Telecommunications Sector Reform	L	L	L	L	L
Entreprise	34	Facilitation of Local ICT Business		M	M		
	35	MICTI Incubator		S	S		
Provincial development	36	Provincial Digital Resource Centres (CPRDs)		S	S		
	37	Mobile ICT Units		S	S		

To ensure a better orientation and supervision of the implementation, the ICT Policy Commission's functions, composition and functioning will be reviewed and a National Forum and Provincial ICT Commissions will be created.

Finally, the strategy identifies the cost of implementation, presents the principal measures to be adopted for resource mobilisation, and ends with an annex summarising each of the proposed projects.

1. INTRODUCTION

The utilisation of ICTs in diverse sectors of activity is a reality in the world and in the country, ranging from the exchange of messages using fixed and mobile telephones, e-mail, the Internet, television, and radio to the availability of high-speed broadband services at home. These are some of the inexhaustible areas for the application of ICTs, which are characterised by an intensifying convergence and integration of computers, electronics and telecommunications.

This global phenomenon, which has characterised the world during recent years, requires changes in economic and social organisation and embodies the Digital Revolution that can be seen in three dimensions:

- *Techno-economic:* ICTs are characterised by their huge potential to transform social and economic activities;
- *Political-economic:* ICTs contribute so that the different regions in the country can have, more or less, the same attraction for business and social undertakings, thus reducing regional asymmetries; and
- *Social:* ICTs promote social integration, reduce the distance between citizens and government authorities, and increase the citizen's level of information and training.

For these reasons, the government is striving to take advantage of ICTs' potential to develop national capacity to resolve the country's basic problems by reducing the poverty index, and improving education, health and public and governmental administration, which are some of the major objectives of the ICT Policy.

While the ICT Policy Implementation Strategy was being elaborated, the E-Readiness Assessment of Mozambique was done by the Centre for International Development of Harvard University as was the Country ICT Survey for Mozambique by the consults Miller Esselaar and Associates, financed by the Swedish International Development Agency. These two studies complemented and updated the National Survey of ICT Capacity (done in the year 2000) and furnished a better basis for the ICT Policy Implementation Strategy.

Especially important moments during the preparation and debate of the strategy occurred during the International Symposium and the various workshops about the ICT Policy Implementation Strategy, which gave innumerable and positive contributions for improving and fortifying this document.

With the ICT Policy Implementation Strategy, Mozambique now has another important instrument to reduce not only the regional asymmetries but also the digital divide that separates the developed and developing nations. Due to that divide, of the 544.2 million people with access to the Internet worldwide, 181.23 million are in North America (33%), 171.35 million are in Europe (30%), and only 4.15 million (1%) in the African continent as illustrated below.
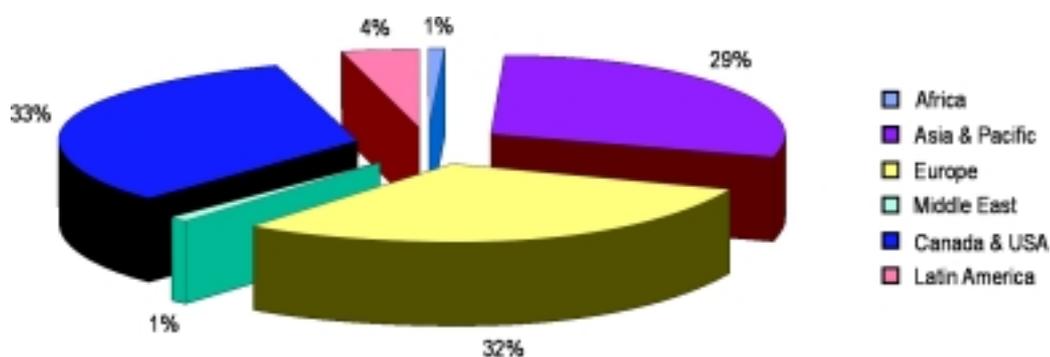
Figure 1: *Percentage access to the Internet by continent*
Source: NUA Internet Services (www.nua.ie/surveys), February 2002

The realisation of the ICT Policy's objectives will thus be done in a systematic, integrated and coordinated way through the present strategy, which covers the following aspects:

- definition of the objectives contextualised within the country's reality of socio-economic activities, in general, and of the ICTs, in particular;
- identification of the components of the integrated programme and of the priority projects to be implemented in each area in the short, medium and long term;
- identification of the principal actors, each one's role, and the strategic partnerships for the strategy's implementation;
- establishment of the mechanisms and instruments for the management, coordi-nation, monitoring and evaluation of the ICT Policy; and
- strategies for the mobilisation of needed financial, human and technological resources.

2. Objectives of the Strategy and ITS Contribution to National Development

2.1. Strategic Objectives

The Implementation Strategy has both long- and short-term objectives to be materialised in the short, medium and long term. In the long term it aims to:

- Contribute to the reduction of absolute poverty in the country;
- Extend national coverage and improve the quality of teaching through the use of ICTs, particularly the power of the Internet;
- Raise the number and quality of ICT professionals in order to make them competitive in the world market;
- Modernise the support infrastructure for ICTs and provide access to the greatest possible number of people through telecentres and other public or community access points;
- Create an electronic network for the government that raises the efficacy and efficiency of state institutions, reduces operational costs and improves the quality of the services provided to the public;
- Create new business opportunities through the use of ICTs; and
- Develop appropriate content and applications which reflect the national cultural reality and the aspirations of the people.

The short- and medium-term objectives specified in Table 2 are designed to contribute to the achievement of these goals, defined in the ICT Policy, that are long-term objectives of this strategy.

It can, however, never be too emphatic to say that one of the essential objectives of the Strategy is to mobilise the resources-national and international, public and private-necessary for its implementation.

Table 1. *Short-and medium-term objectives and performance indicators*

N.º	Short- and medium-term objectives	Type of indicators	Programme areas	Indicators of achievement
1.	Create favourable legal and economic environment for developing ICTs	❑ Social ❑ Economic	**Policy & regulation**	❑ Number and type of regulations approved ❑ Number of ICT businesses created
2.	Develop ICT human resource capacity	❑ Social ❑ Economic	**Human capacity**	❑ Number, level and quality of people trained in ICTs (users, trainers, technicians, professionals) ❑ Number and type of certified courses ❑ Number of graduates hired locally
3.	Widen coverage, increase beneficiaries, improve service quality of ICTs	❑ Computer and ICT services ❑ Telecom ❑ Social ❑ Economic	**Infrastructure**	❑ Teledensity ❑ Geographic coverage ❑ Quality of services ❑ Cost of communications ❑ Bandwidth to support data transmission and Internet use
4.	Increase efficacy and effectiveness of services availed by government agencies and entities through the use of ICTs	❑ Social ❑ Economic	**Content & applications**	❑ Number of government processes automated ❑ Type and quality of information provided to the public ❑ Number and distribution of service points
5.	Increase productivity and competitiveness of private sector and effectiveness of NGOs through ICTs	❑ Computer services ❑ Telecom	**Enterprise**	❑ Number of businesses using ICTs ❑ Types of electronic services in use ❑ Number of NGOs using ICTs

2.2. Contribution to National Development

The ICT Policy Implementation Strategy defines programmes through which the new information and communication technologies can support the implementation of the Government Programme 2000-2004, the ICT Policy itself, and the Action Plan for the Reduction of Absolute Poverty (PARPA).

PARPA identifies as fundamental areas of action: education; health; infrastructure; agriculture and rural development; good governance; legality and justice; and macroeconomic and financial policies. It further recognises the need to decentralise government capacity to provincial and district levels and to increase interaction between the government and other social actors in a common effort to combat absolute poverty and promote economic growth. PARPA acknowledges the need to establish a policy climate that stimulates the private sector to accelerate job creation and increase opportunities for income generation through self-employment.

The ICT Policy identifies six priority areas:

- ❑ education;
- ❑ human resource development;
- ❑ health;
- ❑ universal access;
- ❑ infrastructure; and
- ❑ governance.

The Implementation Strategy proposes projects that apply ICTs to support actions in all six priority sectors, for example: school networking; a variety of approaches to ICT training and education; dissemination of information on HIV/AIDS; increased access through provincial centres for digital resources; the extension of infrastructure through the use of innovative technologies; and a set of applications for a truly electronic governance or e-governance.

It proposes an integrated programme approach that will maximise the utilization of available resources (human, financial and infrastructure) available to address problems in the priority sectors and reduce the risks of unnecessary duplication and overlaps in the use of such scarce resources.

Short-term measures strengthen linkages between central and provincial governments as part of an information-dissemination chain that reaches the district level through the Provincial Centres for Digital Resources, the school and telecentre networks, and the public, private and community radio and television, as well as the local print media. These measures include experimental applications of technology and the expansion of basic ICT training opportunities. Programmes aimed at information services in key ministries will improve the quality and relevance of information delivered to the provinces. Effective networking between central structures and the provinces will support the programme for decentralisation and increase popular empowerment and transparency in governance.

Longer term projects will help to expand infrastructure through regulatory reform in the communications, stimulating the development of businesses in this area. These projects are designed to build up the skills needed to design, implement and maintain ICT applications tailored to Mozambique's development challenges. Research and development programmes will be another component of this effort.

To ensure that ICTs have a catalytic role in the Programme for Public Sector Reform, long-term investment will be necessary not only in infrastructure but also in training and the production of applications and contents. The adopted technical solutions will need to be harmonised to assure that the systems can be integrated horizontally and vertically in the government, thus supporting the process of debureaucratization, which constitutes a prerequisite for improving the efficacy and efficiency of the government's provision of information and services to the public.

3. CURRENT CONTEXT

The goal of using ICT to enhance development envisions improvements in a range of factors that facilitate or alternatively constrain the potential of these technologies. The overall objective, however, can be thought of as the use of networks and computer programmes to make public and private enterprises more productive, dependable and competitive in achieving the goals of poverty reduction, economic expansion, innovation, and wider participation. Over the last decade, Mozambique has initiated many programmes to build more effective ICT applications. To realise the benefits of this process, enhancements are required in three key areas: human capacity, infrastructure and policy.

Two decades ago Mozambique emerged from a long colonial war and, about ten years ago, emerged from a war of destabilization and entered a period of democracy, peace and political stability. Although one of the poorest countries in the world, Mozambique has established an economic policy based on free competition and the stimulation of the private sector. It also established one of the most rapidly growing and successful programmes of privatisation in Africa and is attracting foreign investment through free industrial zones and fiscal concessions.

The government is committed to Mozambique's membership in the Global Knowledge Society, recognises the importance of ICTs to sustainable development, and has a clear vision for the integration of ICTs in national development as articulated within the ICT Policy. Mozambique will continue to be an important voice in international debate about the opportunities and challenges of the information age and, over the last decade, has made significant progress towards the vision of a national information society.

Private companies have established on-line news and information services and compilations of official information and legislation in electronic format on CD-ROM. A Country Development Gateway is being developed through partnerships between the private and public sectors.

The Ministry of Education (MINED) — through its SchoolNet programme — and the Foundation for Community Development (FDC) are both leading programmes to extend connectivity to schools and to develop Internet based academic materials for teachers and students.

UEM has developed proposals for a Mozambique ICT Institute (MICTI) that includes research and learning, incubation for small business, and the creation of a science park. This programme will draw on national and international business and academic partnerships to develop high-level ICT knowledge and skills to address the goals of development and strengthen the Mozambican ICT business sector.

Through the process of formulating the ICT Policy, the Ministry of Science, Technology and Higher Education set up a network (CiteNet) that will be used for debate and formulation of policy during this first phase of the process and, afterwards, to dynamise the implementation and monitoring of the approved policy. This network is linked to the page of MESCT and uses e-mail to assist communication between the participants in this process.

While most applications in government are directed at management, financial and administrative processes, the government is committed to transforming its systems into a platform through which to better serve the public. A number of studies have been undertaken to define appropriate approaches. Most provincial governments are now connected to the Internet, and provincial governors are active users of e-mail.

In the context of these positive developments, some crucial constraints still limit the growth of ICT use.

3.1. Human Capacity

The limited ICT skills base in Mozambique-and its concentration in Maputo-acts as a constraint to the initiation and maintenance of ICT activities throughout the country. The skills deficit is comprehensive; it includes users of computers and communications facilities, middle level technicians who can implement and maintain systems and high-level specialists to design networks and applications to meet the country's needs. Basic ICT training is provided by a small number of schools, telecentres, community access centres, and businesses throughout the country but not enough to significantly accelerate the growth of a user base.

The tertiary sector produces annually an estimated 30 to 40 ICT graduates with technical skills. Postgraduate programmes and a number of scholarship programmes are available in collaboration with external universities. In the area of information science there is virtually no training offered in the country. The skills shortage extends beyond the technical arena and includes policy and regulatory issues related to telecommunications, communications and news media, the development of an information society, and the management of ICT projects.

The ICT Policy Implementation Strategy, therefore, necessarily addresses the demand not only for a wide range of ICT skills (including systems engineering and analysis, software development, network engineering, maintenance skills of all kinds, design and development of data bases, systems for quality control, and data input, etc.) plus the skills for project design and management but also ample capabilities to manage change. The strategy must ensure that partnership programmes-in both public and private sectors-are effective in transferring knowledge and skills to Mozambican institutions and individuals.

3.2. Infrastructure

The existing electricity and telephone grids now reach all provincial capitals, but still bypass perhaps 90% of the population who reside in rural areas. Of the population, 60% to 70% is reached by national radio, and various community radios have been launched recently. National television reaches 30% to 35% of the population residing mainly in urban areas. While access to ICTs is a major constraint, several measures have been put in place to extend the basic infrastructure needed to expand ICT use.

The electrification plan under the responsibility of the Ministry of Natural Resources and Energy aims to electrify all district capitals by 2004. Rural hospitals are an immediate priority, and solar power systems are being implemented in them. Electrification of secondary schools in rural areas is also planned.

For telecommunications, an ambitious programme for the development of infrastructure for the national telecommunications network is being implemented. Its principal objective is to assure the necessary infrastructural support conducive for the implementation of a truly national information network through a well balanced package of projects, which will permit an effective response to the country's needs.

Through selection and adaption of modern technologies, the development of this infrastructure aims, in the short run, to create conditions to:

- create the backbone for the communications between the country's principal urban centres;
- augment the geographic coverage by extending the network to rural zones;
- offer new telecommunications products and services;
- improve the quality and availability of communications;
- develop regional and international integration; and
- create competitive advantages for the country to attract and retain investments.

To achieve these objectives, the country will have to channel huge investment resources into the design and implementation of projects with major structural impact, for example:

- development of the backbone for the National Transmission Network;
- expansion and modernization of the network and systems for digital telephonic traffic in all provincial capitals and principal urban centres.
- expansion and modernisation of the network for metropolitan areas and the suburbs of Maputo City;
- integrated projects for rural communications; and
- development of mobile telephone networks.

Significant advances have been made to assure the programme's implementation within the stipulated timetable. Among these actions, of particular importance are the conclusion of important construction projects for the backbone of the National Transmission Network as are the submarine fibre optic link between Maputo and Beira with intermediate connection points in Xai-Xai, Inhambane and Vilanculos along an extension of nearly 1,000 km, with a 2.5 Gb/s capacity per pair of fibres. This important system that ensures the availability of infrastructure in support of broadband applications between the south and centre of the country will be complemented by a high-capacity Hertzian digital-beam link between Beira and Chimoio that should be ready by the end of 2002.

This programme should be implemented during this decade, interlinking all the provincial capitals by high capacity networks using diverse technologies, namely Hertzian waves and fibre optic submarine cables implanted in the seabed or joined into the electricity transmission networks.

The expansion and modernisation of the switching and access networks will be based on the redesign of their architecture, taking advantage of the network planning techniques, so as to allow a gradual transition to the new technological supports based on extensive use of packet switching.

The expansion of coverage in rural zones will be done by applying solutions that permit communications to be brought to these zones in equal conditions for all users, applying for this technologies that attend cost/efficiency considerations. Toward this end, access technologies being considered are those based upon satellite communications (VSAT networks, RASCOM Project), FWA solutions (fixed wireless access), point-to-point radio systems, or point-multipoint systems.

The rapid development of mobile networks has contributed to the growth of the level of access and penetration of telecommunication services. The technological solutions being developed in this field point ever more toward the integration of fixed and mobile networks, which will bring users innumerable advantages.

Complementarily, a set of projects for expanded access to the Internet is being developed through Internet service providers (ISPs), totalling now about 60,000 users, 80% of whom are in Maputo.

With the goal of expanding the supporting infrastructure for provision of the Internet, gateways (and government networks) are being installed in Beira, Nampula, Pemba and Quelimane, and there are plans to expand the programme to other provinces and some small cities.

Allied to the gradual introduction of telecentres and other community access points, the expansion of Internet cafés and digital agencies is part of the strategy for the popularisation of ICT use.

The implementation of these actions during 2001 to 2007 with emphasis on the first three years, 2001 to 2003, should culminate in:

- an increase in the fixed telephone density by increasing the installed telephonic transmission capacity to about 180,000 lines in the network (2003);
- extended support for the data communication infrastructure and the Internet, covering all provincial and the most important district capitals, development poles, and localities (2003);
- availability of broadband transmission infrastructure up and down the country, covering at least the provincial capitals (2007); and
- technological support for the commercialisation of advanced services such as ISDN, video conferencing and intelligent network services (2003).

The programme is viable, balanced and technically executable. Its concept and design respond well to the imperatives of the global information society.

Finally, the implementation of this program will mark the beginning of a shift toward the gradual evolution of network architecture and technology toward that of the next generation of public telecommunication networks, where network infrastructures constructed on the basis of protocols and norms oriented toward the Internet will predominate. Indeed, the Internet is the application of the future in the field of information and communication technologies.

3.3. Policy and Regulation

A key component of any strategy for applying networks and computers in Mozambique is the underlying policy framework for this sector-especially a legal and regulatory framework-that facilitates the application of these technologies without undue costs or delays. These policies are currently embodied in laws, especially Law 14/99, the Telecommunications Act, decrees and ministerial dispatches, and regulatory provisions that establish basic principles of operation, allocate resources to encourage particular developments, and spell out the scope for action. Most relevant to development ICT issues in Mozambique are those policies dealing with telecommunications networks and services.

Provision of basic domestic voice services over fixed wired networks will remain, for a period fixed by law, exclusively in the hands of the national telecom operator, Telecomunicações de Mozambique (TDM), a public company.

Policy changes are needed in a number of other areas in order to facilitate the effective use of the infrastructure. These include e-commerce, intellectual property, privacy and security as well as international trade.

The National Communications Institute of Mozambique (INCM) is responsible for the regulation and supervision of market behaviour, including the approval of tariff schedules for basic services. The INCM is also responsible for the management of the Universal Service Fund, which aims to promote the widened availability of the basic network's services. This fund will develop on the basis of a percentage charged licensed operators, beginning with the issuance of licenses to present operators and later to new ones.

All other services are open to free competition or will become so as soon as INCM publishes the regulations and procedures necessary to license new operators or create the required conditions for their operation.

The Ministry of Transport and Communications set up a policy unit to address some of these issues. The strategy includes proposals to stimulate the expansion of infrastructure through public and private initiatives as well as through the systematic monitorisation of the relevant regulations.

Legal changes are needed in some other areas so as to facilitate the effective use of infrastructure. Those include areas such as electronic commerce, intellectual property, privacy and security as well as international commerce.

The Strategy proposes a major and early effort to build a national skills base and identify training programmes to prepare the necessary legal framework.

4. An Integrated Action Programme

The resources required for the implementation of a national ICT policy go beyond the capacity of the Government of Mozambique. In order to maximize the limited resources available from the government and the donor community, actions will be implemented in the framework of an integrated programme, which highlights linkages and synergies among projects.

Projects to exploit the benefits of ICTs in the six priority areas identified in the ICT Policy (education; human resource development; health; universal access; infrastructure; and governance) are thus identified within the following programme components:

- Human capacity;
- Content and applications;
- E-government;
- Policy and regulation;
- Infrastructure; and
- Enterprise.

Human Capacity

- Creation of national competencies
- High-level technicians
- Valued professionals

Infrastructure

- Modern and highly efficient

Enterprise

- Finance and credit
- Market access
- Efficiency
- Demand stimulus
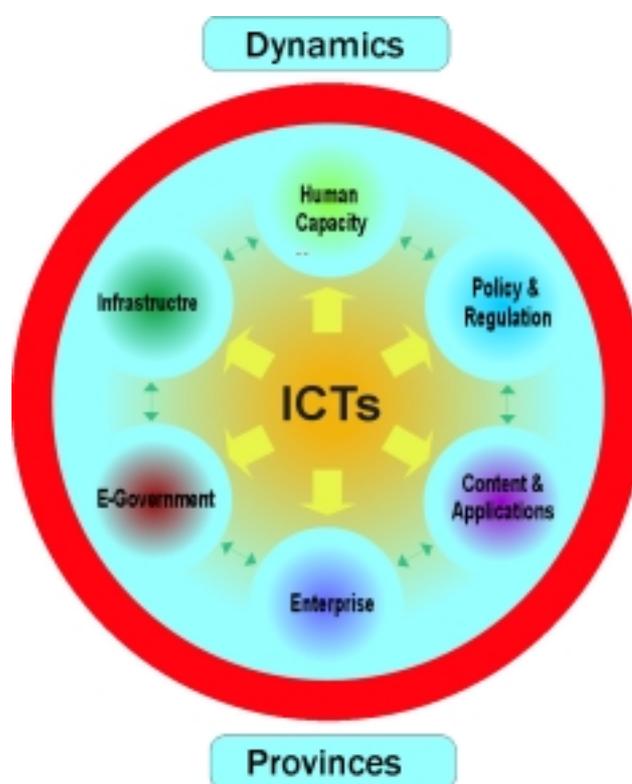
E-Government

- Efficacy & Efficiency
- Reduction of operational costs
- Reduction of bureaucracy and corruption
- Increased accountability

Policy and Regulation

- Transparency and Inclusion
- Solid legal framework
- Capacity building

Content & Applications

- Relevance & usefulness
- Language
- Affordable Costs
- Applications

Figure 2: *Dynamics generated by integration*

The establishment of Provincial Digital Resource Centres (CPRDs) is a key project of the Strategy. Provincial Centres are an important means of delivering services in the six priority areas and stimulating ICT activity throughout the country. The Provincial Centres will develop capacity, contents and applications and support e-government services and the development of small enterprises.

The government will explore the possibility of linking the above components within an ICT trust fund model that will ensure the highest level of coordination and common management and facilitate decision-making on projects and disbursement of funds. Donors will not be required to channel funding through the Trust Fund, but a central management structure will be responsible for coordinating all ICT projects and ensuring that they fit within the Strategy and do not duplicate other projects.

Such an approach promotes the strict coordination required to ensure that project prerequisites are met, for example, for infrastructure.

4.1 Human Capacity

A sound strategy for ICT policy implementation must rely on a solid human-resource base to ensure that skilled workers can fit into the labour market, create ICT-based SMEs, and contribute to the achievement of development objectives.

Four levels of ICT training are required to put in place this solid base.

- ❑ High-Level Professional and Technical ICT training: to provide the highest level of expertise to expand the small core of national experts that now exists. This effort will be led by MICTI, a higher institute for ICTs, in the context of its long-term comprehensive approach to ICT capacity development.
- ❑ Curriculum and Certification of ICT Professionals and Technicians: to satisfy the requirement for properly trained and certified trained professionals in the public sector as well as to provide ICT training to meet private-sector needs.
- ❑ SchoolNet: to provide ICT training in an initial phase and ICT-based education in a second phase. This is a sound strategy to improve labour competitiveness for the next generations of Mozambicans that will face new challenges in the local and global labour market.
- ❑ ICTs to Promote Literacy: ICT resources can also be innovative tools for solving traditional development problems. They provide unique and proven tools for solving problems associated with illiteracy.

ICTs can be a powerful tool for distance learning to support all the above programmes as well as education in general.

The following projects make up the human capacity component of the strategy.

Table 2. *Priority projects in the area of human capacity*

Description	Short- & medium-term objectives	Implementing partners	Timing	
			Begin	End
School Net-Internet for schools	2	MINED/FDC	2001	2004
Curricula and Certification-professional and technical	2 and 4	MESCT/UEM/MT	2002	2003
Youth Programme for the Production of Contents	2	MESCT/MINED	2002	2003
ICT for literacy	2	MINED	2002	2003
Institute for Communication Technology of Mozambique (MICTI): Phases I and II	2	MESCT/UEM/MICTI	2002	2005

4.2. Content and Applications

As human capacity expands, the production of content and applications will also accelerate thereby realising development objectives and filling market needs. Over time, the central government will see an expansion of the quantity and an improvement in the quality of its information exchanges with the provincial governments and will progressively expand the information and services that it can provide in community-access centres and public one-stop-shops. Provincial towns will be better able to exploit locally available information and services-through the production of content about cultural values, educational materials in local languages, the promotion of tourism, the marketing of agricultural products and livestock, etc. Portals will be developed to facilitate access to government information and the cultural riches of Mozambique and to meet the specific needs of the community and the business community.

As a way of expanding capacity and stimulating content development in the short term, a cadre of national and expatriate volunteers will be organised to work with government departments and provincial resource centres to identify information sources in areas of priority concern, for repackaging and dissemination through the Internet or on CD-ROM.

Specific projects will address critical information gaps that have been identified in the areas of HIV/AIDS and the implementation of the ICT Strategy.

Table 3. *Priority projects in the area of content and applications*

Description	Short- & medium-term objectives	Implementing partners	Timing Begin	Timing End
Information System on HIV/AIDS	4 , 5	CNCS/MISAU	2002	2004
Science and Technology Network (CiteNet)	4 , 5	MESCT	2002	2003
Distance Education	2	MESCT/MINED	2002	2005
ICT Country Knowledge Base	4 , 5	CP Info	2002	2003
Knowledge Base for Science and Technology	2, 4, 5	MESCT	2002	2004

4.3. E-Government

In the section about governance, the ICT Policy indicates the principal existing constraints and stresses the unparalleled opportunities that ICT offers to improve government operations at the central and local levels to provide better services, act more rapidly and with more efficiency and lower costs, avail public information to citizens, and improve communication between them and government leaders.

Among the likely benefits to be obtained with the support of ICTs are the fight against bureaucracy and corruption, the promotion of a good image for the country, and an improvement in the business environment and competitiveness-fundamental conditions to attract investment. This challenge will require redoubled efforts and significant investments in planning and process reengineering to overcome departmental barriers and use, take advantage of, and reorient existing resources. Consequently, among the possible actions in the area of e-governance, the ICT Policy points toward the creation of a network interlinking state services, the computerisation of public services, basic computer training for directors at all levels, and the presence of the state organs on the Internet.

In this perspective, e-governance is and should be a fundamental aspect of the Programme for Public Sector Reform, which tries to achieve higher efficiency and the decentralisation of services, beginning by inculcating a new culture and attitude in public functionaries.

As if to confirm the Mozambican government's vision about digital governance, the International Conference about E-Governance for Development, held in 2002 in Palermo, Italy, stressed the enormous opportunities that ICTs offer to elevate the efficiency of public institutions and economic systems, augment transparency and reduce corruption, thereby contributing not only toward a reduction in the digital, social and economic gap between developed and developing countries but also to attract essential foreign investment into those countries.

The recently established common fund of Italy and the United Nations for financing projects in the area of e-governance in five countries, including Mozambique, constitutes an important catalyst.

It is important to stress that, independent of their executing agencies and sources of finance, the projects in the area of e-governance should rigorously obey the principles of harmonisation, in terms of vision, and of interoperability, compatibility and scalability in terms of the adopted technical solutions. Following these principles, the main projects for e-government are:

Table 4. *Priority projects in the area of e-governance*

Description	Short- & medium-term objectives	Implementing partners	Timing Begin	Timing End
Government Electronic Network (GovNet)	3 , 4	CIRESP, MAE, CPInfo, central and provincial state organs	2002	2005
State Personnel Information System (SIP 2000)	3 , 4	MAE, central and provincial state organs	2001	2003
State Financial Administration System (e-SISTAFE)	3 , 4	MPF, central and provincial state organs	2002	2004
Computerised Land Register	3 , 4	MADER (DINAGECA), provinces	2002	2003

Table 4 (Continued)

Description	Short- & medium-term objectives	Implementing partners	Timing Begin	Timing End
Computerised Land Registry	3 , 4	MAE, MIC	2002	2004
Civil Identification System	3 , 4	MINT, CPD	2001	2004
National Development Portal	3 , 4	SISLOG, CPInfo	2002	2003
Survey of the state of ICTs in Public Institutions	4 , 5	CPInfo	2002	2003
Health Information System	2, 3, 4	MISAU	2002	2005
Electoral Management System	2, 3, 4	MAE, STAE, CPD	2001	2004

4.4. Policy and Regulation

Promoting wider access to telecommunications services at reasonable cost for most citizens is a fundamental underpinning of any ICT Strategy and is also a goal to be reached for the strategy for implementation. However, while the legal and policy framework in Mozambique is moving towards facilitating the competitive provision of these services, many constraints still limit their geographic expansion and economic accessibility-and will continue to do so for the foreseeable future. The ongoing reform of the communications sector addresses these constraints in the medium to long term.

The Universal Service Fund constitutes an important mechanism to expand access to basic ICT services by offering ways to subsidize the expansion of the network and capture the resources generated by different telecommunications service operators.

The government will establish a set of norms and regulations to reverse the current situation characterized by a limited telecommunications infrastructure, especially the electronic network, high costs for most of the population, and deficient coverage by the electric network, which constitute huge obstacles to the promotion of universal access to ICTs. The actions to be undertaken as endorsed in the ICT Policy include:

- ❑ adopting measures to reduce the cost of tariffs for telephone access so as to extend the network to a bigger number of users;
- ❑ setting a single tariff for calls to ISPs from any point in the country equal to the cost of a local call;
- ❑ creating incentives for suppliers of telecommunication services in deprived zones where the profits are not sufficiently attractive to the private sector; and
- ❑ defining a community tariff for electricity and telecommunications that are supplied to community access points.

Through co-participation in the provision of subsidies by government and donors, ways can be achieved to compensate for the reduction in state revenues and in those of energy and telecommunication service providers that result from the application of the above tariffs.

The INCM will assure that the regulation about interlinkage be observed so as to guarantee that equality of access be implemented and that free competition functions in all related areas, in particular in the promotion of a competitive and innovative sector of Internet service providers. Besides the support presently provided by INCM for the development of a regulatory framework for liberalisation, it is important to give continual support for its staff training and institutional capacitisation so as to ensure it has enough technical, financial and human resources to well fulfil its responsibilities.

In this way, the regulatory reform and institutional capacitation included in this strategy will permit the government to monitor the realisation of the changes identified above and the materialisation of the objectives of the ICT Policy.

Some of the actions to be undertaken within the framework for the implementation of projects listed in Table 5 should cover critical aspects for an information society, most especially the following:

- ❑ specific legislation about the use and publication of information on the Internet;
- ❑ normalisation and adoption of standards and regulations to be taken into consideration in the development of information systems;
- ❑ legislation about system security and the fight against cybercrime;
- ❑ specific legislation to protect the rights of authors; and
- ❑ adoption of legal measures to protect ICT users and guarantee the protection of their privacy.

Table 5. *Priority projects in the area of policy and regulation*

Description	Short- & medium-term objectives	Implementing partners	Timing	
			Begin	**End**
Capacity Building of Cpinfo's Executive Secretariat	3 and 4	CPInfo	2002	2003
Telecommunications Sector Reform	3	MTC	2001	2005
Capacity Building of INCM	1, 3 , 5	INCM	2002	2004

4.5. Infrastructure

Modern network infrastructure capable of rapid transfer of data, voice and graphics is a prerequisite of ICT use. The government will seek solutions to ensure that all developmental projects can exploit the opportunities afforded by the high capacity fibre optic cable that follows the coastline. It will also seek to capitalise on low-cost two-way VSAT networks for reaching remote areas and wireless solutions based on the 802.11 (Wi-Fi) protocol widely used to establish the final link with users in remote zones.

Other long-tested technologies may also be relevant for Mozambique. For example, to promote universal access, the Provincial Digital Resource Centres will provide-at no additional cost-store-and-forward and dial-up email transfer. Remote nodes will be established wherever necessary in order to provide local access for all users.

It is hoped that the telecentre programme will have been implemented at the district level, and the Strategy foresees its extension to very poor urban areas where many opportunities exist to use ICTs in support of the informal sector, e.g., affordable e?mail and literacy programmes.

Table 6. *Priority projects for infrastructure*

Description	Short- & medium-term objectives	Implementing partners	Timing	
			Begin	**End**
Modernisation and Expansion of Traffic Centres in Southern, Central and Northern Regions	3	TDM	2001	2003
National Transmission Network	3	TDM	2001	2005
Modernisation of the Transmission Network in Maputo and environs	3	TDM	2001	2004
VSAT Stations	3	CPInfo	2002	2003
Affordable E-mail Access	3, 4 and 5	CPInfo	2002	2003
VSAT Communications Network	3	TDM	2002	2003
TELEMOZ: Provincial Gateways, Networks and government networks	3	MTC	2001	2004
Telecentres	3, 4 and 5	UEM/CIUEM	2002	2004
Digital Agencies	3	TDM	2001	2002

4.6. Enterprise Development

Policy changes in the telecommunication sector will be complemented by the government's commitment to review the constraints on the ICT private sector that limit its expansion outside the capital (Maputo).

Although customs duties on computers and software have been lowered, import taxes in other areas (e.g., communications equipment, books purchased individually or in small numbers) remain high enough to act as an impediment to the establishment of small ICT businesses or their extension beyond Maputo.

Small business registration processes are slow and cumbersome. Preferential procurement processes would encourage the expansion of the local private sector. Intellectual property issues need to be examined to assess their impact on software import and development.

In moving to a more competitive telecommunications environment, the government should contribute with the necessary measures to facilitate the development of ICT businesses and their extension throughout the country and increase-especially through information sharing and communication measures-private-sector confidence in the transparency of the new institutions.

The incubator facility proposed as part of the Mozambique ICT Institute will be able to capitalise on the machinery put in place to support small business activity and strengthen links between academic and business approaches to ICT.

Table 7. *Priority projects for entrepreneurial development*

Description	Short- & medium-term objectives	Implementing partners	Timing	
			Begin	End
Local Business Facilitation	3	Cpinfo / Ministry of Industry and Commerce	2002	2004
MICTI: Incubator Component	1, 3	UEM (MICTI)	2002	2003

4.7. ICT Development in the Provinces

A general agreement exists on the lack of adequate ICT infrastructure outside the major urban areas of Mozambique. Even with the government's strong commitment to the process of effective decentralization, it will take a long time to reverse this situation. In the meantime, it is imperative to provide the highest level of services to the community, and ICTs offer appropriate tools to overcome this problem.

Provincial consultations during the preparation of the Strategy revealed a high degree of interest in accessing e-mail and the information resources of the Internet to address provincial development priorities. Issues of concern differ from province to province and will be reflected in the information services provided by the CPRDs. For example, where livestock is the prime agricultural activity and community-based natural resource management an important tourism issue, these deserve to be the focus of content and dissemination.

All the projects in the Strategy are designed to extend access to ICTs in the provinces in a manner that supports the goals of the Provincial Strategic Development Plans and enhances economic activity.

School connectivity, literacy training, the delivery of HIV/AIDS information, the installation of e-mail and VSATs will be implemented in the provinces. Regulatory reform is designed to reduce costs for users in remote zones and community access centres as well as in telecentres and CPRDs.

Due to the small user base and limited infrastructure in provincial capitals, CPRDs will initially offer a wide scope of ICT services. The centres will address issues most relevant in the particular province and should be organised as part of a communication or information chain reaching the districts via telecentres, community radios, or other informal local media.

The provincial centres will be implemented through a combination of interventions from the public authorities (governors), private enterprises (including SMEs) and civil society. Business plans will define the contributions from institutions in the different sectors and lay the foundation for each centre.

All the resource centres will support the production, maintenance and dissemination of information and knowledge to empower the local community towards a self-sustained growth.

The mobile ICT units will complement the centres and widen their reach in an efficient and profitable manner, providing services to rural zones that do not possess adequate ICT infrastructure. These mobile units, appropriately equipped with computers, telephone access, and a low cost bidirectional satellite link, should also serve as an ad hoc training platform for rural citizens, provincial public functionaries, and an Internet connectivity room, in events and campaigns as also the information campaigns about the prevention of HIV/SIDA and the activities of the public One-Stop-Shops, etc.

Table 8. *Priority projects for ICT development in the provinces*

Description	Short- & medium-term objectives	Implementing partners	Timing	
			Begin	**End**
Provincial Digital Resource Centres	2, 3, 4, 6	Cpinfo / provincial ministries	2002	2003
Mobile ICT units	3	CPInfo / CPRDs	2002	2003

4.8. Integration of Priority Projects

4.8.1. Framework

The programme framework addresses, among other things, constraints whose removal would speed up the use and deployment of ICTs as facilitators for development.

The critical areas include:
- ❑ the limited human resource base;
- ❑ the lack of an adequate national ICT infrastructure;
- ❑ the need to strengthen the review processes and the elaboration of policies and regulations currently in place as well as the dynamic relationship among these factors;
- ❑ regional disparities that require particular attention in the development of programmes in the provinces; and
- ❑ the need to address issues of timing, costs and results by identifying and phasing short-, medium- and long-term priorities and projects.

The classification of projects into short-, medium- and long-term priorities refers to the starting date of projects. Most projects will continue on a long-term basis with adjustments made as a result of programme monitoring and government programme cycles.

4.8.2. Priority Projects

The integrated programme provides a good framework to classify the projects that have been identified by national stakeholders as critical to the use and deployment of ICTs as an mechanism to achieve national development goals within the context of the government's programme, the ICT Policy, and PARPA.

4.8.2.1. Key Actors

The strategy for implementation defines the direct beneficiaries of the priority projects and the implementing organisations or institutions.

The central government is a key but not the only actor in the process. At the provincial level, the government, working hand in hand with civil society and the private sector, will be more effective in delivering the products of the planned initiatives. The installation of Provincial Digital Resource Centres, conceived as multi-sectoral and participatory entities, plays a fundamental role in bringing ICTs to very poor remote areas.

The local private sector at the provincial level can play an important role in taking over, in the medium term, those activities that have developed sufficient market capacity to encourage local entrepreneurs to invest. The CPRDs will enter into partnership with local entrepreneurs from the start, but the involvement of local NGOs and other development partners will be necessary until the market becomes mature.

Priority projects will be developed within ongoing initiatives and will identify synergies and benefits for all involved. This will help to concentrate scarce local capacity in specific "hubs" for more effective management and delivery of outputs, necessary for efficient allocation of financial resources.

4.8.2.2. Short Term Priority Projects (2002- 2003

The short-term priority projects focus on three critical areas: human capacity, infrastructure, and policy and regulation.

Building capacity in the ICT Policy Commission's Secretariat before the beginning of the projects is essential for the detailed elaboration of projects and the identification and mobilisation of resources necessary for its operationalisation.

The Commission's Secretariat will directly manage the following projects:
- ❑ The ICT Country Knowledge Base. This base will create the foundation for monitoring and adjusting the ICT Policy Implementation Strategy and for raising awareness of senior government officials of

the value ICTs can bring for realising the government's programme. The project will initially focus on the realisation of studies and the survey of public-sector data, which permit the identification of the basic requisites for the implementation of electronic governance projects or e?governance. Awareness campaigns will also target leaders who will support the deployment of the CPRDs. Once the CPRDs are set up and training content is developed, they can initiate additional awareness-raising campaigns. The CPRDs can also be used as information gatherers and deploy, when appropriate, a decentralised database system.

❑ The Professional and Technical ICT Curricula and Certification. This project will provide standardised certification for end users and people seeking professional specialisation in accredited institutions able to attest to their training and specialisation.

The Executive Secretariat of the ICT Policy Commission will work with the relevant ministries and other public institutions toward the implementation of projects for:

❑ the facilitation of local ICT businesses; and
❑ the Youth Programme to Produce Contents.

Both programmes will have provincial impact, the latter through partnerships with national and international organisations that can provide technical and substantive expertise through networks of volunteers, establishing a link, where possible, with the Distance Education initiative.

The Provincial Digital Resource Centres (CPRDs), to be launched with the support of the ICT Policy Commission and the donor community, will take advantage of the results of the VSAT project to secure affordable and reliable access to the Internet and other basic ICT services in support of essential centre operations.

The Mobile ICT Unit will serve as a channel to promote the use of ICT and extend the coverage area of CPRDs ICT services to poor and remote areas within the provinces.

Finally, the Universal E-mail Access project will provide affordable email access to users within the province by employing a series of low cost technologies such as store-and-forward and packet radio. All these projects will directly benefit from the large ongoing infrastructural projects, specially the National Transmission Network, VSAT Communications, the Digital Agencies, the Telecentres, etc.

4.8.2.3. Medium-Term Priority Projects (2003-2004)

Of the medium-term priority projects, emphasis will be on high-level ICT training through MICTI; conclusion of phase 1 of the National Transmission Network; the expansion of community access points through telecentres; digital agencies and other initiatives; information about HIV / AIDS; governance and facilitation of local business.

It is never enough to stress that the creation of national capacity to implement development programmes will always be a condition sine qua non for success. On the other hand, all the initiatives and projects must be based on the national telecommunications infrastructure, the backbone of the information society in Mozambique.

In this context, it will be possible to take advantage of the potentialities offered by ICTs for the national programme to combat HIV/AIDS, for the initiatives to elevate the efficiency of public institutions, for example, the Public One-Stop-Shop, the Identification System, and the State Financial Administration System.

The project for local ICT business facilitation will give much help to local entrepreneurs, adopting policies for incentives for the development of local companies, especially small and medium enterprises (SMEs). The projects for a Science and Technology Network, the System for Scientific Information, and the ICT Observatory will ensure that leaders and institutions have the informational support necessary for planning and decision making.

At the provincial level, the CPRDs will expand support to both the SchoolNet and the Community Access Points projects, focusing on human and institutional capacity building and the development of contents.

4.8.2.4. Long-Term Priority Projects (till 2005 and beyond)

Among the long-term projects, the most outstanding are the conclusion (Phase 2) of the National Transmission Network, high-level ICT training (phase 2 of MICTI), the expansion of Distance Education, the conclusion of the telecommunications sector reform, and the consolidation of the Government Electronic Network, which will be, so to say, the backbone or essential infrastructure for e-government.

The Provincial Digital Resource Centres will play a fundamental role in the extension of all the initiatives to the provinces.

Though the Strategy suggests specific projects and the years needed for their implementation within defined areas, it has enough flexibility to move projects between categories as long as the interconnection between infrastructure, human capacity, and policies is preserved and project sequencing is clearly spelled out. It is

also feasible to adapt the action plan to accommodate specific funding opportunities that will certainly emerge in the course of the overall implementation of all activities.

Table 9. *Projects of the Strategy for the Implementation of the ICT Policy*

■ Long term   ■ Medium term   ■ Short term

Areas	No.	Name of the project	2001	2002	2003	2004	2005+
Human resource development	1	ICT Curricula and Certification		Short	Short		
	2	SchoolNet: Internet for Schools	Medium	Medium	Medium	Medium	
	3	ICTs for Fighting Illiteracy		Short	Short		
	4	Mozambique Institute of Information and Communication Technologies (MICTI) - Phase I		Medium	Medium	Medium	
	5	Youth Programme for Content Development		Short	Short		
	6	Mozambique Institute of Information and Communication Technologies (MICTI) - Phase II		Long	Long	Long	Long
Infrastructure	7	National Transmission Network	Long	Long	Long	Long	Long
	8	Modernisation and Expansion of the Digital Trafic Centres (South, Centre and North)	Short	Short			
	9	Modernisation of the Maputo & Suburbs Transmission Network	Medium	Medium	Medium		
	10	VSAT Communication Network		Short	Short		
	11	Telecentres		Medium	Medium	Medium	
	12	Digital Agencies	Short	Short			
	13	VSAT Stations		Short	Short		
	14	Universal and Affordable E-mail Access		Short	Short		
	15	TeleMOZ: Provincial Gateways, Network and Internet Access	Medium	Medium	Medium	Medium	
Contents & Applications	16	Information System for HIV/AIDS		Medium	Medium	Medium	
	17	Knowledge Base for Science and Technology		Medium	Medium	Medium	
	18	Distance Education		Long	Long	Long	Long
	19	ICT Country Knowledge Base		Short	Short		
	20	Science and Technology Network (CITENET)		Short	Short		
Governance	21	Public Servant Information System (SIP)	Short	Short	Short		
	22	Government Electronic Network (GovNet)		Long	Long	Long	
	23	Civil Identification System	Medium	Medium	Medium		
	24	Electoral Processes Management System	Medium	Medium	Medium		
	25	State Financial Management System (e-SISTAFE)		Medium	Medium	Medium	
	26	Health Information System (HealthNet)		Long	Long	Long	Long
	27	Country Development Gateway		Short	Short		
	28	One-Stop Shop		Medium	Medium	Medium	
	29	Digital Land Register		Short	Short		
	30	ICT Survey in Public Instituitions		Short	Short		
Policies & regulations	31	Capacity Building: ICT Policy Commission Secretarial		Short	Short		
	32	Capacity Building in INCM		Medium	Medium	Medium	
	33	Telecommunications Sector Reform	Long	Long	Long	Long	Long
Entrepreneurial development	34	Facilitation of Local ICT Business		Medium	Medium	Medium	
	35	MICTI Incubator		Short	Short		
Provincial development	36	Provincial Digital Resource Centres (CPRDs)		Short	Short		
	37	Mobile ICT Units		Short	Short		

5. STRATEGIC PARTNERSHIPS

The materialisation of the ICT Policy Implementation Strategy will only be possible with the involvement of all interested participants: the public and private sectors, academic and research institutions, civil society, and international development organisations. Partnerships will be promoted not only at the national level but also within provinces where necessary for the successful management of the Provincial Digital Resource Centres, themselves key to stimulating the expansion of ICT throughout the country. The international development agencies and international business will be called upon to coordinate and reinforce their involvement in the implementation of this Strategy.

5.1. Government

Through the Implementation Strategy, the government not only establishes its vision and leadership for the process but also provides the framework within which such partnership and collaboration can succeed.

The government's responsibilities for the development of the information society include:

- ❑ establishment of policies, laws, institutions, projects and action programmes that ensure access of all sectors to ICT;
- ❑ encouragement for the financial sector to set up credit facilities to ICT businesses that want to expand their capacity through the introduction of ICTs;
- ❑ creation of financial instruments to encourage the creation of small and medium ICT businesses for the development of software and systems;
- ❑ establishment of procurement criteria that favour the national and local ICT private sector and help build their institutional capacities;
- ❑ exploration of innovative ways to support the development of ICT incubators and science parks of the type proposed by the Mozambique ICT Institute; and
- ❑ guarantee of affordable access to the Internet for schools, telecentres, Provincial Digital Resource Centres and other community access points.

Additional actions that the government will take to ensure that the private sector, civil society, and the academic and research institutions have an active role in the effort to implement the ICT Policy are outlined below.

5.2. Private Sector

The private sector, as an important engine of economic growth and of innovation, has a central role to play in stimulating and spreading the use of ICT in Mozambique as elsewhere.

Partnerships with the international private sector will facilitate:

- ❑ the substantial investments required to enable Mozambique to access and eventually produce services-distance education, electronic libraries, multi-media tools-on a scale that can permit most of the population to have access;

- ❑ the introduction of innovative business practices-for example, the franchising of community-access models-to support the extension of connectivity to the rural areas;

- ❑ the development of business incubation models that reflect Mozambican reality and lead to the development of marketable products and services;

- ❑ the implementation of science parks or similar arrangements that promote research and development in Mozambique and facilitate the transfer of managerial and technical knowledge related to the development and exploitation of ICTs; and

- ❑ the identification and development of niche products for which there is solid customer base.

As Mozambique moves toward more comprehensive knowledge and use of ICTs, the aspects related to intellectual property rights, privacy, and security inherent in the use of ICTs will emerge and hopefully the private sector will take on an increasing role in the area of standardisation and definition of policies and laws with a correct approach to these problems. For this, the government will:

- ❑ implement favourable tax regimes to attract in international partnerships, in particular, partnership with a large component of human-resource development; and

- ❑ provide incentives to encourage the local private sector to establish itself in the provinces, for example, by ensuring that local ICT businesses can bid on contracts to provide computers, training

and maintenance services to public sector projects (school networks, community access points).

As an active partner in the ICT Policy Commission the private sector will work closely with government to ensure an appropriate and equitable system of incentives.

❑ Encorajar parcerias entre o sector privado estrangeiro e empresas locais de ICTs que concorram para potenciar as últimas.

Como um parceiro activo na Comissão para a Política de Informática, o sector privado irá trabalhar em estreita colaboração com o Governo para assegurar que se aprove um sistema de incentivos apropriado e justo.

5.3. Civil Society

Civil society organisations have a unparalleled opportunity to spread knowledge and understanding of ICTs and the role these can play as a tool to promote their primary development goals. Their close links and proximity with the community equip them to:

❑ Promote ICTs at the grass roots level;

❑ Produce content and services that are directly relevant to the needs of the communities they serve-in education, health and other areas of activity;

❑ Provide ICT training opportunities; and

❑ Develop innovative development-oriented applications.

International NGOs should support their local counterparts in identifying and developing ICT solutions for local problems, adapting training materials, and organising training workshops.

5.4. Academic and Research Institutions

Mozambique will use its position as a key member of the UNICT Task Force and a participant in global discussions on the digital divide to encourage partnerships to build research and development capacities.

The academic institutions and the proposed Mozambique ICT Institute are candidates for programmes to develop cooperative projects with technology institutes in the North and South. Partnerships involving private universities will also be encouraged.

Internet connectivity can be particularly beneficial to the research institutes located in rural areas because, with access to the Internet, they can open up doors to other sources of knowledge and research networks in the country and other parts of the world. The Strategy aims to take advantage of the expansion of infrastructure and capacity to offer telecommunication services to build capacities in these institutes through collaborative arrangements.

6. COORDINATION OF THE IMPLEMENTATION STRATEGY

The Commission for ICT Policy will coordinate and, in general, direct the application of the ICT Policy Implementation Strategy and will be supported by the Technical Unit, whose specific competences will be defined by decree of the Council of Ministers.

The participation of various interested parties will be done through the National Consultative Forum made up of representatives from the government, the private sector, non-governmental organizations, academic research institutions, and development agencies.

At the provincial level, Provincial ICT Commissions, supported by a secretariat, will be formed. The functions of the Provincial Commissions may be carried out by the Provincial Digital Resource Centres whenever these are set up. Commissions or ICT groups may be established in cities that, though they are not provincial capitals, are developed enough to warrant such organs.
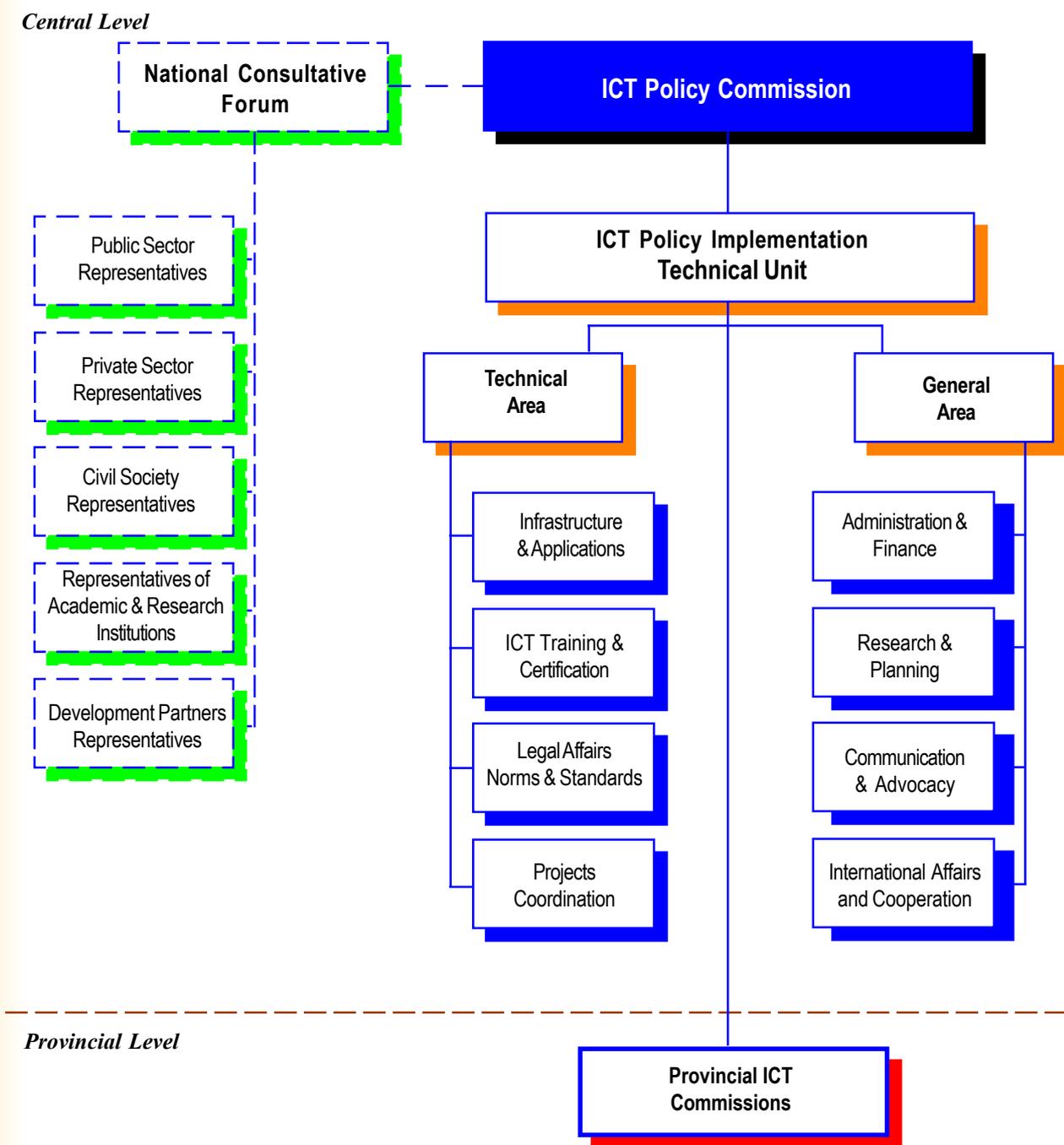
**Figure 3.** *Scheme for the coordination of implementation*

7. RESOURCE MOBILISATION

The ICT implementation strategy will be funded through a combination of mechanisms including:

- ❑ the government's regular budget;
- ❑ Universal Access Fund;
- ❑ Contributions from donor agencies and organisations;
- ❑ Loans from financial organisations;
- ❑ Joint public/private financing; and
- ❑ Other sources not prohibited by law.

To realize the various projects in the ICT Policy Implementation Strategy, it is necessary to raise US$ 280,525,000 of which US$ 160,283,000 is already guaranteed. The remaining US$ 120,242,000 (43%) must still be mobilised.
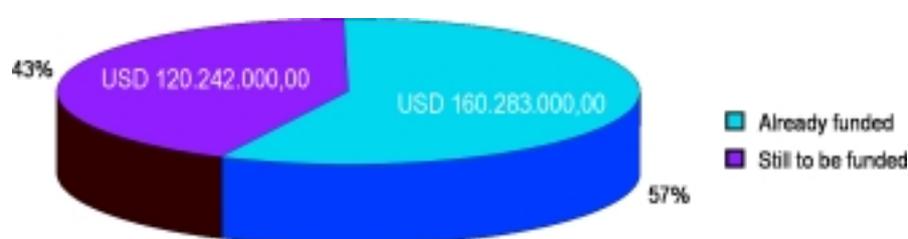
Figure 4. *Financial resources for the ICT Policy Strategy*

To support the effort to raise the funds necessary to realize the Strategy for ICT Policy Implementation, the ICT Policy Commission will adopt a Communication and Advocacy Strategy to be amply divulged among partners, cooperation and development agencies, the DOT Force of G-8, and the ICT Task Force of the United Nations as well as at innumerable international conferences about ICTs.

The ICT Policy Commission will support the Provincial Commissions in preparing ICT projects for submission to countries and donors especially interested in supporting certain provinces.

Table 10 summarizes the projects comprising the ICT Policy Implementation Strategy and identifies the short-, medium- and long-term projects, the cost for each project, as well as the total cost of implementation, the funds already assured and those yet to be obtained.

Considering that the projects and programmes for the computerisation of the country will not be exhausted nor are they constants within the Strategy, all sectors and institutions are urged to integrate into their development programmes an ICT component with concrete goals to be reached together with the required financial, technical and material means for their realisation.

Table 11. *Financial resources required to implement the strategy (US$)*

No.	Project	Time frame	Total budget	Total funds already raised	Total por Unfunded	Unfunded total %
	I. Human Resource Development					
1	ICT Curriculum and Certification	Short	5.480.000		5.480.000	
2	SchoolNet: Internet for Schools	Medium	9.180.000		9.180.000	
3	ICTs for Fighting Illiteracy	Short	2.100.000		2.100.000	
4	Mozambique Institute of Information and Communication Technologies (MICTI) - Phase I	Medium	2.500.000	125.000	2.375.000	
5	Youth Programme for Content Development	Short	1.244.000		1.244.000	
6	Mozambique Institute of Information and Communication Technologies (MICTI) - Phase II	Long	8.825.000		8.825.000	
	Subtotal		*29.329.000*	*125.000*	*29.204.000*	*99,6%*
	II. Infrastructure					
7	National Transmission Network	Long	100.000.000	100.000.000	0	
8	Modernisation and Expansion of the Digital Traffic Centres (South, Centre and North)	Short	6.000.000	6.000.000	0	
9	Modernisation of the Maputo & Suburbs Transmission Network	Medium	26.500.000	26.500.000	0	
10	VSAT Communication Network	Short	3.500.000	3.500.000	0	
11	Telecentres	Medium	2.500.000		2.500.000	
12	Digital Agencies	Short	1.000.000	1.000.000	0	
13	VSAT Station	Short	168.000		168.000	
14	Universal and Affordable E-mail Access	Short	500.000		500.000	
15	TeleMOZ: Provincial Gateways, Network and Internet Access	Medium	4.078.000	4.078.000	0	
	Sub-total		*144.246.000*	*141.078.000*	*3.168.000*	*2,2%*
	III. Content & Applications					
16	Information System for HIV/AIDS	Medium	2.780.000	2.780.000	0	
17	Knowledge Base for Science and Technology	Medium	500.000		500.000	
18	Distance Education	Long	2.000.000		2.000.000	
19	ICT Country Knowledge Base	Short	250.000		250.000	
20	Science and Technology Network (CITENET)	Short	400.000	100.000	300.000	
	Subtotal		*5.930.000*	*2.880.000*	*3.050.000*	*51,4%*
	IV. Governance					
21	State Personnel Information System (SIP)	Short	10.000.000		10.000.000	
22	Government Electronic Network (GovNet)	Long	30.000.000		30.000.000	
23	Civil Identification System	Medium	10.000.000	3.000.000	7.000.000	
24	Electoral Processes Management System	Medium	6.000.000	1.500.000	4.500.000	
25	State Financial Management System (e-SISTAFE)	Medium	20.000.000		20.000.000	
26	Health Information System (HealthNet)	Long	5.000.000		5.000.000	
27	Country Development Gateway	Short	700.000	100.000	600.000	
28	One-Stop Shop	Medium	2.000.000		2.000.000	
29	Digital Land Register	Short	1.150.000		1.150.000	
30	ICT Survey in Public Instituitions	Short	250.000		250.000	
	Subtotal		*85.100.000*	*4.600.000*	*80.500.000*	*94,6%*
	V. Policy & Regulation					
31	Capacity Building: ICT Policy Commission Secretariat	Short	250.000		250.000	
32	Capacity Building in INCM	Medium	150.000		150.000	
33	Telecomunications Sector Reform	Long	11.600.000	11.600.000	0	
	Subtotal		*12.000.000*	*11.600.000*	*400.000*	*3,3%*
	VI. Enterprise Development					
34	Facilitation of Local ICT Business	Medium	150.000		150.000	
35	MICTI Incubator	Short	370.000		370.000	
	Subtotal		*520.000*	*0*	*520.000*	*100,0%*
	VII. Provincial Development					
36	Provincial Digital Resource Centres (CPRDs)	Short	2.200.000		2.200.000	100,0%
37	Mobile ICT Units	Short	1.200.000		1.200.000	
	Subtotal		*3.400.000*	*0*	*3.400.000*	
	TOTAL		*280.525.000*	*160.283.000*	*120.242.000*	*42,9%*

8. ANNEX: PROJECT SUMMARIES

his annex contains the summaries of the 37 projects included in the ICT Policy Implementation Strategy, a crucial contribution for Mozambique to become an effective and dynamic member of the Global Information Society, which entails the integration not only in the political, economic and scientific space of the Southern Africa Development Community (SADC) but also in the much larger world space and economy.

As President Chissano pointed out, during the official opening of the International Symposium on the ICT Policy Implementation Strategy, "we live in an era in which developing countries are required to make ever-increasing efforts to integrate themselves into a world where information and communication technologies have become the tools par excellence to merge societies and markets into one and in which the nearest market is no longer that of our neighbour but that of lowest cost and fastest delivery."

President Joaquim Chissano adrressing the International Symposium on the ICT Policy Implementation Strategy, Maputo, October 2001

8.1. HUMAN CAPACITY

The Government, in close collaboration with its various partners, will adopt the following policy measures:

a) Define professional profiles for ICTs;

b) Standardise the activity and functioning of the training centres in this area;

c) Encourage in the country the generalisation of training and universally-recognised certification of informatics professionals;

d) Create centres of excellence for the training of ICT professionals as well as in the application of ICT solutions;

e) Establish methods for the recognition of ICT professionals;

f) Define minimal training programmes in informatics for government managers and community leaders;

g) Promote competitions and offer prizes for those who distinguish themselves by applying ICTs to solve problems that the country faces;

h) Promote ICT training by means of distance education; and

i) Define high-quality professional ICT training as a high priority and an indispensable condition for the development of the area of ICTs.

— ICT Policy, 6.2.

In a classroom: Youth vying to harness ICTs

Project 1: Professional ICT Curriculum and Certification

Short Term (2002-2004)

Description:

The rapid development and deployment of ICT has brought innumerable benefits to both the state and non-governmental sectors. But at the same time it has introduced new challenges that directly impact on human capacity. The shift from traditional business processes to ICT based solutions entails a corresponding shift in the work force - from traditional manual employees to knowledge workers. An ICT curriculum and certification process at the various levels is required to ensure that private and public personnel can effectively absorb and use the new ICTs. A programme similar to UNESCO's International Computer Driving License (ICDL) is required to allow for worker certification based on standard curriculums and regardless of the specific training provider. Only certified entities are thus entitled to provide certified titles that are nationally recognized and accepted. The aim of the project is to create a critical mass of qualified trainers, examiners, ICT users and technicians. At the provincial level, the CPRDs could be one of the initial certified entities to bring the programme to the local and remote areas. In the urban centres and provincial capitals, the project can be complemented by specialised training and certification on commercial applications provided by the private sector, and Open Source Software certification for the various technical levels.

Main Activities	Outputs/Deliverables	Scope
❑ Identification of adequate curriculum and partners ❑ Identification of local entities for certification ❑ Continuous adminstration of exams ❑ Identification of Private Sector/OSS partners/curriculum	❑ Specialized content packages based on common standards/exams ❑ A series of certifying organizations ❑ A critical mass of certified end users and technical personnel ❑ A critical mass of certified personnel in commercial/OSS applications	National, provincial

Area	Duration	Implemented by	Duration	Status
Human Capacity, National R&D	2 Years	CPInfo, MT, CPRDs, Private Sector	US$5.480.000,00	Still to be financed

Project 2: SchoolNet

Medium Term (2001-2004)

Description:

This project builds on experience with the existing SchoolNet programme. Under the present arrangement MINED is responsible for operational as well as substantive aspects of SchoolNet for secondary schools. MINED is attempting to build decentralised maintenance and support capacities. In the next phase the division of responsibility for connectivity and content will be reviewed. MINED will consider establishing procedures for organisations donating computers to schools, including the definition of a computer package for school computer labs, computer specifications, training, maintenance arrangements with local organisations and means for covering connectivity costs for a minimum period. MINED will focus on content rather than the ICT components of the programme: monitoring implementation, incorporating ICT education into the curriculum, and proposing ways of using ICT to improve the quality of education in other subjects. Once support programmes are in place the School Network can be rolled out as fast as computers and connectivity can be made available - as long as donors meet MINED's project requirements. FDC (Foundation for Community Develoment) is developing a related programme to connect upper primary schools which addresses content and connectivity. MINED and FDC programmes are complementary.

Main Activities	Outputs/Deliverables	Scope
❑ Design parameters for school connectivity projects:, number and configuration of computers and related equipment; ❑ Training and maintenance requirements; project duration; costs of connectivity ❑ Create unit in MINED with responsibility for negotiating projects and monitoring results ❑ Create unit in MINED with responsibility for provision of ICT training materials and development of ICT-enabled support for other components of the curriculum	❑ ICT curriculum ❑ Curricula materials drawing on ICTs ❑ Teachers trained ❑ Students trained and tested for ICT competence	Pre-university schools, technical institutes, teacher training schools

Area	Duration	Implemented by	Duration	Status
Human Capacity	4 years	MINED, FDC	US$9.180.000,00	Partially funded

Project 3: ICTs to Promote Literacy

Short Term (2002-2003)

Description

A high percentage of the population in the country is illiterate. Major efforts to address this critical development issue are ongoing and are relatively successful. The use of ICT to complement these efforts is now feasible thanks to the development of new multi-media technologies. Computers with customized software in local languages and CD-ROMs can be used, within a non-threatening environment, as an effective tool to entice people to learn basic literacy. Students will be provided a simple tutorial program that will show on a screen the letters and sounds of the alphabet, the way to correctly write them on paper and the composition of basic words. The student will be required to provide minimal input (even using voice commands if required) and work on a self-paced basis under the supervision of a facilitator. CPRDs, Telecentres, Schoolnets and Community Access Points will be used to distribute the software and applications and private sector telecentres. Cyber cafés will also be targeted for distribution. India has very successful models and software packages that should be seriously considered for adaptation, application and replication in Mozambique, fostering South-South cooperation in the process. The programme can also be extended to teach students more formal subjects such as math, science, and foreign languages and can also target those with various disabilities to help them integrate into the productive sector. Use of Open Source Software (OSS) will facilitate both deployment and additional local R&D while reducing costs substantially.

Main Activities	Outputs/Deliverables	Scope
❑ Identification of the right partner ❑ Design/adaptation of software application in local language ❑ Deployment of Application	❑ Signed cooperation agreement with partner ❑ A working literacy application in Portuguese ❑ Students able to do basic reading/writing	Provincial, rural and urban poor

Area	Duration	Implemented by	Duration	Status
Human Capacity, local R&D	2 years	MINED, Schoolnets, CPRDs, etc., with support from international partners	US$2.100.000,00	Still to be financed

Project 4: MICTI Phase II - High Level Training

Medium Term (2002-2004)

Description

A Mozambican ICT Institute will create the intellectual foundation and knowledge base required to support progress towards the global information economy and society. The programme will: build upon identified research strengths in Mozambique; develop expertise in newly emerging fields of technology; identify research programmes with potential for commercialization; and develop a cadre of teachers able to impart high level skills to students in the local environment. The programme will be structured to accommodate graduates of secondary schools as well as people working in business and the public sector. The programme will provide an integrated environment in which researchers and students interact with the business sector and government agencies to take on the challenges and opportunities for developing the economy and improving quality of life. Planning is underway to identify and phase components of the research and teaching/learning programmes and appropriate management and partnership structures. The Research and Learning programme is part of a larger vision Mozambique ICT Institute vision, which includes incubation and science park components.

Main Activities	Outputs/Deliverables	Scope
❑ Complete initial business plan ❑ Review/refine with strategic academic partners ❑ Identify teaching and research partnerships ❑ Review/refine with donor partners ❑ Identify financial partners ❑ Develop detailed planning document	❑ Initial business plan ❑ Detailed business plan ❑ Courses delivered ❑ Research Projects underway ❑ Research results transferred to incubation facility ❑ Graduates - course and programmes	National

Area	Duration	Implemented by	Duration	Status
Education, human resource development	phased over 5 years	UEM, MICTI	US$ 2.500.000,00	Still to be financed

Project 5: Youth Programme for Mozambican Content

Short Term (2002-2004)

Description

This partnership between Mozambican and international volunteers will create a corps of young people knowledgeable in ICTs to be deployed in Maputo and to the provinces to repackage and develop content, solve connectivity problems, disseminate information and train ngos, small business and individuals in basic ICT skills. The foreign volunteers can be drawn from any country but Brazil and Portugal would seem to be obvious candidates to reduce the need for language training. The volunteers will be deployed in teams to institutions in Maputo, to the provincial digital resource centres as they come on stream, and to schools and school network support centres. Demand from other organizations could be assessed through a call for expressions of interest although priority should go to organizations whose services best match priority areas identified through the provincial workshops.

Main Activities	Outputs/Deliverables	Scope
❑ Define profiles of local and expat volunteers ❑ Source volunteers locally and through the donor community ❑ Identify target numbers for initial programme ❑ Recruit volunteers ❑ Define and implement training/sensitization workshop ❑ Identify postings ❑ Post to provincial centres and other institutions	❑ Repackaged content in priority areas: eg education, health, agriculture, tourism in use in the provinces ❑ Content in CD form and posted on Web site ❑ Connectivity problems solved ❑ Records of information use in provincial centres, including ❑ Dissemination to district level	Provincial, rural, urban poor

Area	Duration	Implemented by	Duration	Status
Human capacity, content and applications	2 years	CPInfo, MESCT, MINED, Provinces	US$1.244.000,00	Still to be financed

Project 6: Mozambique Institute of Information and Communication Technologies - Phase III

Long Term (2002-2005+)

Description:

In 2001 the Universidade Eduardo Mondlane (UEM), in association with the Mozambique Acacia Advisory Committee Secretariat (MAACS) embarked upon developing a plan for the Mozambique ICT Institute (MICTI) that would sit at the centre of the governments ICT human resource development program. This Institute has three key components:

- **A Research and Learning Institute** aimed at developing the ICT skills of secondary school leavers and members of the working population. It will supplement rather than replace existing university based courses
- **A Technology Park** that will house both national and international ICT businesses in a tax friendly environment, providing jobs for those people with ICT skills
- **An ICT Business Incubator** that will aid the development of small businesses in the ICT space focused on the ICT requirements of Mozambique.

At the end of 2001 a coordinating team was established, terms of reference for each component of the Institute project defined and agreed, and project teams contracted. An integrated business plan will be available later in 2002; a project to implement a pilot phase of the Incubator is a short-term component of the Strategy; in the medium term work will begin on the Research and Learning Institute.

Main Activities	Outputs/Deliverables	Scope
- Research to identify models - Appropriate to the three components - Detailed planning and integration - Identification of partnerships - Identification of space and facilities - Phased implementation plans for each component	- Research and Learning facility adapted to Mozambican needs - Students working on development applications - Business incubator with links to the R&L Institute - Science Park with international companies linked to the Incubator and supporting R&L functions	National

| Area	Duration	Implemented by	Duration	Status
Human Capacity, Enterprise, Applications	3 Years	U E M	US$8.825.000,00	Partially funded

8.2. Infrastructure

With a view to consolidating and expanding the supporting infrastructure of ICTs, the Government, in close collaboration with its partners, will intervene both at the level of sectoral policies and at the operational and technological level, namely in:

b) Designing a modern architecture for the backbone of the national telecommunications infrastructure, which will ensure the transport and availability of advanced telecommunications services;

c) Modernising the national electricity supply infrastructure in order to ensure a good quality mains supply to both the rural and urban areas;

d) Creating a road network which will contribute to community development, particularly in the rural zones;

e) Promoting the expansion and use of digital radio and television;

f) Creating a favourable environment for the participation of the private sector in the development of the telecommunications infrastructures, electrical supply, road system and other value-added services; and

g) Attracting international investors and partners to participate in the development of the national infrastructure to support ICT use.

— ICT Policy, 6.5
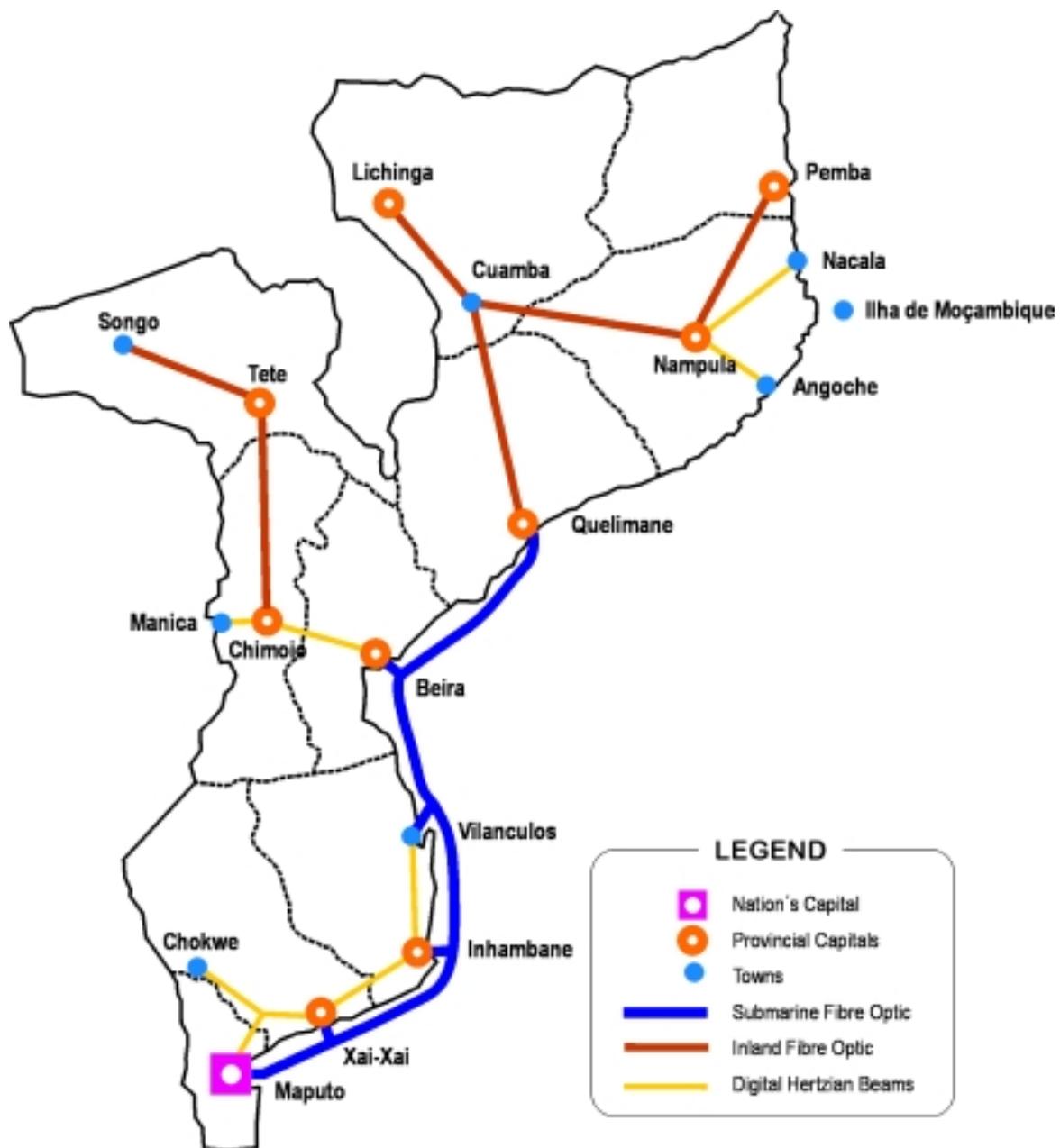
Backbone of the national transmission network

Project 7: National Transmission Network

Long Term (2001-2007)

Description:

This project envisions the gradual substituting the present network for linking via satellite the provincial capitals and other development centres, with a high capacity infrastructure based on a fibre optic land and marine network possessing modern systems of digital Hertzian beams capable of accommodating the long-term needs for the development of ICTs.In the project's first phase of implementation (2001-2004), linkage will be established between the following provincial capitals, including the town of Nacala:

- ❑ Maputo - Beira;
- ❑ Beira - Chimoio;
- ❑ Beira - Quelimane;
- ❑ Chimoio - Tete; and
- ❑ Nampula - Nacala.

In the second phase, extensions will be made to the following cities:

- ❑ Cuamba - Nampula - Angoche;
- ❑ Angoche - Nacala;
- ❑ Nacala - Pemba; e
- ❑ Cuamba - Lichinga.

Main Activity	Outputs/Deliverables	Scope
Installation of the fibre optic network	Networks installed in provincial capitals and some cities	National

Area	Duration	Implemented by	Duration	Status
Infrastructure	6 years	TDM	US$1.000.000,00	Fully Funded

Project 8: Modernisation and Expansion of Traffic Centres (South, Centre and North Regions)

Short Term (2001-2003)

Description:

Modernisation and Expansion of Traffic Centres is a project based on the ongoing fast-moving technological migration of the national telephone networks and their conversion to digital systems. The project aims at extending this process by:

- ❑ expanding and modernising existing capacities;
- ❑ supporting integrated systems in districts and towns;
- ❑ reconfiguring the network architecture in some locations; and
- ❑ introducing new functionality and applications.

Main Activity	Outputs/Deliverables	Scope
❑ Migration from the old telephone traffic centres to the modern, digital systems	❑ Digital telephone traffic centres operational in southern, central and northern Mozambique	National

Area	Duration	Implemented by	Duration	Status
Infrastructure	2 Years	TDM	US$6.000.000,00	Fully Funded

Project 9: Modernisation of the Transmission Network for Maputo and Surrounding Areas

Medium Term (2001-2004)

Description:

Maputo City and surrounding areas are characterized by rapid population growth. The provision of telecommunication services is a determining factor for the socio-economic development of the city and thereby improvement in the living standards of its inhabitants. Aspects such as the introduction of new services and the expansion of the backbone of the present transmission network into a support infrastructure for information technologies are fundamental for improving the quality of services presently offered. From a technical viewpoint, this project will respond to the present and future needs of the market through:

- ❑ simplification of the telephone network infrastructure;q   increase in the levels of security and availability of the networks;
- ❑ introduction of intelligent platforms;
- ❑ migration to a network for sending packets;
- ❑ installation of new, fibre optic based topologies; and
- ❑ creation of proper conditions for linkage with new operators.os operadores.

Main Activity	Outputs/Deliverables	Scope
Introduction of new services and expansion of the backbone of the transmission network	An expanded network and new services provided in Maputo and surrounding areas	Maputo City and surrounding areas

Area	Duration	Implemented by	Estimated budget	Status
Infrastructure	3 years	TDM	US$26.500.000,00	Fully funded

Project 10: VSAT Communication Networks

Short Term (2002-2003)

Description:

Access to information in rural zones has been hindered by the huge geographical expanse, together with the present limitation of network infrastructure. In this context, TDM plans, with this project, to overcome the difficulties in accessing telecommunication services in remote rural zones by installing communication networks via satellite using VSAT technology, thereby realizing the government's principal goal of providing universal access throughout the country.

Main Activity	Outputs/Deliverables	Scope
Installation of VSAT networks in remote rural areas	Telecommunication services offered to remote rural areas	Nacional

Area	Duration	Implemented by	Estimated budget	Status
Infrastructure	3 years	TDM	US$3.500.000,00	Fully funded

Project 11: Telecentres

Medium Term (2001-2004)

Description:

The Telecentres Project envisions installing, by 2004, at least another 25 telecentres in diverse districts and rural zones. The decision about where to locate them will be based on viability studies taking into account the different infrastructures that now exist or would need to be created, the technological conditions that need to be provided, and the accumulated experience in the installation of the presently existing seven telecentres. The telecentres will contribute to district level development, test various models and technologies with a view to replication, improve quality of public service delivery at the district level, stimulate local business, improve information flows within the districts, and encourage other private sector and civil society organisations to develop similar models.

Main Activities	Outputs/Deliverables	Scope
- Set up models and conduct studies of the localities where the telecentres will be installed - Develop partnerships for operating the telecentres - Create relevant content - Provide training courses and creating a user base - Create a network between district centres - Identify management models that guarantee the sustainability of the telecentres that are set up	- Established telecentres - Increase in the user base in the districts - Improvement in the information base for local services - Improvement in the communication between districts - Increase in knowledge about the relationship between ICTs and development - Income levels sufficient to guarantee the sustainability of the telecentres	Provincial, Rural and suburban

Area	Duration	Implemented by	Estimated budget	Status
Human resource, infrastructure, enterprise, content and applications	Till 2004	UEM	US$2.500.000,00	Sill to be financed

Project 12: Digital Agencies

Short Term (2001-2003)

Description:

Digital Agencies are posts for attending the public and provide all the various services offered by the company TDM, which will have two stations for clients to access the Internet with the objective of popularising Internet usage, facilitating a closeness between our national citizens and the outside world, and promoting universal access and the dissemination of information. By creating digital agencies, TDM aims to make its service to the public more uniform, improve the operational efficacy in satisfying the clients' needs, and improve the control and management of the services offered by such agencies. The project envisions the creation of 36 digital agencies in some districts, and rural and suburban areas. These will not only allow popular access to ICTs but will also reduce the asymmetries between country and city, enhance the dynamism in economic and social activities, and contribute toward the growth of business, reducing in this way the poverty in these zones. The installation of digital agencies will occur in three phases:

Phase 1: till 31-03-2002 - 9 agencies in the provinces of Maputo, Sofala, Manica, Tete, Zambézia and Nampula.
Phase 2: till 30-09-2002 - 14 agencies in 10 provinces in the country
Phase 3: till 30-03-2003 - 12 agencies in the provinces of Gaza, Manica, Inhambane and Niassa

Main Activity	Output/Deliverable	Scope
Integration of Internet access points in TDM shops	Local population with Internet access in 23 districts	National, provincial, rural and suburban

Area	Duration	Implemented by	Estimated budget	Status
Infrastructure	18 months	TDM	US$1.000.000,00	Fully funded

Project 13: VSAT Stations

Short Term (2002-2003)

Description:

A geographically dispersed country like Mozambique requires innovative connectivity solutions for remote areas. This project will deploy new, low-cost Very Small Amplitude Satellite Terminal (VSAT) for providing connectivity to such areas. Low-cost VSAT can provide data and voice at a fixed cost anywhere in the country being the ideal solution to develop a wide user base and increase exposure to ICT. The project will also explore additional uses of this technology and complemented with last mile solutions such as Wi-Fi and Wireless Local Loop (WLL) around CPRDs, SchoolNets and Community Access Points to provide affordable access to nearby organizations and communities. This project is critical for the successful deployment of the CPRDs.

Main Activities	Outputs/Deliverables	Scope
❑ RFP/Tender for VSAT providers ❑ Deployment of VSAT ❑ Identification of Wi-Fi/WLL technologies	❑ VSAT provider Contracted ❑ Operational CPRDs ❑ A functioning Wi-Fi/WLL network	Provincial, rural and urban poor

Area	Duration	Implemented by	Estimated budget	Status
Infrastructure	2 Year	CPRDs in partnership with VSAT provider	US$168.000,00	Still to be financed

Project 14: Universal and Affordable E-mail Access

Short Term (2002-2003)

Description:

The continuous development and introduction of new ICT has brought into the playing field new applications which, based on the convergence of several technologies, are for the first time available on a global scale at relatively affordable costs. Examples here range from multi-media CD-ROMs and training materials to tele-health. But at the same time, this continuous innovation process has reduced the access costs to basic technologies to virtually zero. Although the World Wide Web and related applications are perhaps the best known and sought technologies at this point in time, access to e-mail is still the "killer" application representing over 50% of all Internet traffic. As a matter of fact, e-mail is now starting to acquire the status of a public good, similar to traditional snail mail, which can be provided at almost no cost. The purpose of this project is to capitalize on the above and provide affordable access to email services to the Mozambican population. Initially, the project will be launched in the CPRDs which, working with local partners, will provide the connectivity services required to provide email services to registered users. Legacy technologies such as store and forward email systems and packet radio networks will be used to move email between the end users located in provincial capitals and remote locations and the Internet. Users will be provided free email accounts in an environment where privacy policies will be transparent and directly managed by end users. The project will also benefit with the introduction of Wi-Fi and WLL technologies into the provinces.

Main Activities	Outputs/Deliverables	Scope
❑ Installation of store-and-forward systems ❑ Training of local end users ❑ Deployment of packet radio systems ❑ Design of basic privacy policy	❑ A working store and forward network with access to the Internet ❑ A broad user base capable of accessing email, increased email traffic ❑ A functional packet radio network linked to store-and-forward systems ❑ A privacy policy which entices end users to use email, prevents spam	National

Area	Duration	Implemented by	Estimated budget	Status
Infrastructure, Human Capacity	Years	CPRDs and partners	US$500.000,00	Still to be financed

Project 15: TeleMOZ: Provincial Gateways, Network and Internet Access

Medium Term (2001-2004)

Description:

The project aims at the expansion of Internet access in the country on the premise that this will be benefitial for national development. TeleMoz integrates all ongoing USAID funded Internet activities. It has four main components:

- ❑ Deployment of gateway infrastucture in secondary cities;
- ❑ Deployment of a policy unit within MTC;
- ❑ Installation of provincial networks; and
- ❑ Overall expansion of Internet and IT use.

Main Activities	Outputs/Deliverables	Scope
❑ Installation of planned Gateways ❑ Creation of a telecommunications policy unit within MTC ❑ Installation of provincial networks to ensure Internet access	❑ Gateways installed and fully operational ❑ Regulations and policy guidelines issued by MTC ❑ Networks installed and Internet access in Provinces	National

Area	Duration	Implemented by	Estimated budget	Status
Infrastructure, Human Capacity, Content and Applications	4 Years	MTC and USAID	US$4.100.000,00	Fully funded

8.3. Content And Applications

With a view to ensuring or improving the protection of the public against different forms of electronic abuse and crime, the Government, in collaboration with its partners, will take the following policy measures, inter alia:

a) Guarantee the protection of personal data in the national infrastructure of information;

d) Stimulate and support the production and dissemination of content that reflect the values of Mozambican society;

.....

— *ICT Policy, 7.3*

Searching the Internet for the information needed!

Project 16: Information System for HIV/AIDS

Medium Term (2002-2004)

Description:

AIDS has become a major threat to national development. The basic objective is to create within one year a national portal with content relating to both prevention and treatment of HIV/AIDS, including

- a database of best practices;
- information on local access to treatment/prevention resources;
- regularly updated information on HIV/AIDS and related issues;
- dissemination and exchange of content generated by specialists and non-governmental organizations working on HIV/AIDS;
- progress reports on public strategies to control HIV/AIDS; and
- public consultations on related issues.

Direct benefits would include improved information availability that can be used by schools, public campaigns, media and the general public. This project is also viewed as the first phase in what would become a more comprehensive national health information system. It should therefore be designed as a test phase for this larger objective.

Main Activities	Outputs/Deliverables	Scope
Design and Implementation of a national system for the gathering, organization and dissemination of information on HIV/AIDS	Portal with updated databases and links to maximize acquisition and dissemination of useful information	National

Area	Duration	Implemented by	Estimated budget	Status
Content/Applications	5 years	MISAU	US$2.780.000,00	Fully funded

Project 17: Knowledge Base for Science and Technology

Medium Term (2002-2004)

Description:

With this project, a framework will be in place for the coordination of academic and scientific research and technological development. The project includes four programme components:

- Transformation of the archive of the Ministry of Higher Education, Science and Technology into a management and decision support tool;
- Development of a national knowledge base through a network of digital and virtual libraries;
- Development of R&D projects and partnerships; and
- Definition of a structure for library and information science education.

The project encompasses the planning phase for a long-term strategic initiative.

O projecto compreende a fase de planificação de uma iniciativa estratégica de longo prazo.

Main Activities	Outputs/Deliverables	Scope
- Set up MESCT decision-making information system for use by entire structure - Develop R&D project for MESCT web page, including database access and on-line query - Developvirtual digital libraries for HE and ST, including OPACS in every library - Workshop for information professionals to review experience and plan way forward	- Improved access to and use of MECST archive - Web support for database access, on-line data input, search and navigation as prototype Higher Education portal - Report on needs of provincial research centres - Network design	National, provincial

Area	Duration	Implemented by	Estimated budget	Status
Content and applications, human capacity	3 years	MESCT	US$500.000,00	Still to be financed

Project 18: Distance Education

Long Term (2002-2005+)

Description:

Technical-scientific transformations in recent times have significantly altered productive processes and social organization thereby making knowledge a fundamental factor in sustainable development for a society. In this context, open and distance teaching becomes an alternative for the expansion of opportunities and the widening of access to higher education, contributing thus to bettering the education of Mozambicans and lessening regional, social and other inequalities.

The distance education project will also open up possibilities to diversify and improve the quality of the supply of educational services in public and private institutions, through professional training courses, especially in strategic areas, preparatory courses for candidates for higher education, informal courses with a unique set of courses, formal university-level courses for baccalaurate, licenciatura, and masters degrees, and courses for continual education.

For the project's implementation, models will be defined for alternative ways to offer distance education courses since at the moment no Mozambican higher education institutions do this. The models to be defined will take into account the need to rationalize the use of resources, the installation of processes for the interaction, articulation and complementarity between higher education institutions and other levels of education in order to use well the scarce human and material resources available for running a complex, wide-scope programme.

Main Activities	Outputs/Deliverables	Scope
❑ Studies to define the distance education model to be implemented in the country ❑ Definition of the operational structure for the functioning of distance education ❑ Training of specialists in distance education ❑ Development of pilot projects for distance education	❑ Models defined and implementation points selected ❑ Strategies and subsystems defined for distance education ❑ Pilot projects for distance education to be developed ❑ Provision of pilot projects for distance education	National and Provincia

Area	Duration	Implemented by	Estimated budget	Status
Content and applications	5 years	MESCT	US$2.000.000,00	Still to be financed

Project 19: ICT Country Knowledge Base

Short Term (2002-2003)

Description:

Accurate information about the state of ICT applications in the country as a whole is a crucial requirement for the implementation and ongoing revision of a national ICT for Development strategy. UNDP's Human Development Report 2001 lists Mozambique as one of the "marginalized" countries in its adoption of ICTs and the lowest on the list of 72 countries for which information was available. In order to support strategic judgments and target additional priorities and initiatives, the ICT Policy Commission will develop a more comprehensive set of criteria and information base-an ICT "knowledge base". This vital source should include not only more detailed understanding of the network infrastructure and capacity in different areas of the country, but also information about government, academic, private and NGO sectors regarding the penetration of basic ICT applications, the levels of ICT expertise, and the types of networks and technology being applied. It should incorporate information about the training programs and number of people being trained by academic, government and private sector organizations. Creating and maintaining such a knowledge base will require both routine reporting of basic information by relevant ministries, academic institutions, private companies, and other NGO's (which might require a statutory mandate), as well as active monitoring of available sources and intensive research and interviewing by the Commission Secretariat to confirm the accuracy and continued relevance of the information. Phase One of this project will focus on an e-assessment which includes the identification, systematisation and analysis of information about the information systems existing within government as an essential first step towards the development of an e-government strategy.

Main Activities	Outputs/Deliverables	Scope
❑ Definition of Indicators and criteria of relevant information; ❑ Research & surveys to test and supplement information; ❑ Publication and updating	❑ National standards and reporting procedures for information; ❑ Analyses and summaries of the information developed	Nation-wide & multi-sector

Area	Duration	Implemented by	Estimated budget	Status
Content/Applications	2 years	ICT Policy Commission Secretariat	US$250.000,00	Still to be financed

Project 20: Science and Technology Network (CITENET)

Short Term (2002-2003)

Description:

This project aims to establish an infrastructure for the communication of data that interlinks public and private academic and research institutions. It will set up a physical network linking not only higher education institutions but also research institutions and other that have information useful to research, such as libraries, museums and centres of scientific interest. CITENET will serve as a platform for communicating and sharing databases and knowledge between these institutions, contributing thereby to improving the quality of education, learning and research.

Besides furnishing a national link, this network will be linked to the world and will investigate the possibility of creating extra solutions to permit the realisation of research in the most advanced areas of ICTs that require broadband communication, such as multimedia, distance education, telemedicine and other areas.

Main Activities	Outputs/Deliverables	Scope
❑ Planning, conceptualisation and installation of the network ❑ Expansion of the initial network's coverage	❑ Networks linking all higher-education institutions in the country ❑ Networks linking educational institutions outside the capital with other relevant institutions	National and Provincial

Area	Duration	Implemented by	Estimated budget	Status
Content and Applications	2 years	MESCT	US$400.000,00	Partially financed

8.4. E-Government

Every effort should be made to disseminate the best national and international practices and experiences as to the unparalleled opportunities that the effective use of ICTs can offer to improve the operations of governments at both central and local levels. In this way, citizens would be offered better and more rapid services that put information at the disposal of the people and facilitate communication between them and those who govern them… the attraction of investment, the improvement of the business environment, and a rise in the level of competitiveness.

In order to get the most out the opportunities that ICTs can offer, the Government will, in collaboration with its partners:

a) Adopt a plan for introducing ICTs into State services;

b) Define a general plan and profile of basic training in ICTs for public sector managers at all levels, and for members of assemblies, municipal authorities and community leaders;

c) Set up a network to connect the organs and central departments of the State both internally and with its directorates or delegations in the provinces;

d) Make it mandatory for organs and central departments of the State to have a presence on the Internet;

e) Make available to citizens, through the Internet, the most sought-for information, including application forms and similar documents needed to be filled-in by the public;

f) Encourage contact between leaders and citizens through electronic mail and the Internet, though without this denying the need for live contacts;

g) Gradually introduce electronic voting and other forms of dealing automatically with electoral processes; and

h) Create electronic decision-support systems.

R-L: Prime-Minister Pascoal Mocumbi with Minister Stanca (Italy) and Prime Ministers of Ivory Coast and Albania, during the International Conference on e-Government for Development in Palermo, which adopted important recommendations regarding e-Government (April 2002)

Project 21: State Personnel Information System (SIP)

Short Term (2001-2003)

Description:

Through the National Directorate of Public Service and in collaboration with the Planning and Finance Ministry and the Administrative Tribunal, the Ministry of State Administration (MSA) is developing a new State Personnel Information System (SPI), presently being installed in all state institutions with the principal objective of helping to manage human resources.

The new system will contain different databases with biographic registries and historical censuses through which it will be possible to obtain personal data, information about professional career, category, literary skills, admission and progression in public service, vacation periods taken, professional courses attended, languages spoken, and other details. For obtaining and using the recorded information, different modules will be developed, some to allow the creation, alteration, elimination and attribution of different levels of access for different users of the system, others to backup the system, import information from different sectors into the general database or to import data from subordinate institutions into the database of the central institution.

The SPI will permit MSA and all institutions where it is installed to calculate the service time of its functionaries, evaluate their potential, monitor the promotion and automatic progress in professional careers in an efficient, effective manner.

Main Activities	Outputs/Deliverables	Scope
❑ Definition of information to be included in the system in coordination with the MPF and the Administrative Tribunal ❑ Conception and development of the databases ❑ Conception and development of modules for granting levels of access, system security, and information retrieval as required ❑ Installation of the system in different state institutions ❑ Training of a technical team and system users	❑ Data fields defined ❑ Idealisation of the database ❑ Accessible information in accordance with the security levels defined for different users of the system ❑ Institutions with an operational system ❑ Users and technicians able to work in different institutions ❑ Data fields defined	National

Area	Duration	Implemented by	Estimated budget	Status
e-Government	3 years	MAE in collaboration with other state institutions and the Administrative Tribunal	US$10.000.000,00	Partially funded

Project 22: Government Electronic Network (GovNet)

Long Term (2002-2005+)

Description:

One of the rights of Mozambican citizens is to have access to information and knowledge obtainable through ICTs. To guarantee the enjoyment of this right, the government and the state need a technological infrastructure for the rapid, efficient and effective transportation of information. The infrastructure is also necessary to permit rapid communication between diverse state and governmental entities and institutions in order to facilitate the sharing of information and the coordination of activities and services that they provide. The GovNet project has as its objective the establishment of a high capacity electronic communication infrastructure that is reliable and safe and is highly available for state institutions for communication within the public sector or with the productive sector or with citizens.

This infrastructure will support the implementation of information systems and the installation of all the technological applications for supporting governmental coordination and the activities of other organisms or sectors useful to the public that are included in the following governmental processes:

❑ Government to government;
❑ Government to the productive sector; and
❑ Government to the public.

The Strategy for the Implementation of ICT Policy envisions a set of priority projects whose implementation depends on the existence of the technological infrastructure herein proposed, that can l link the diverse state and governmental institutions. Thus, this project possesses an important strategy that serves as the cornerstone for the majority of the projects defined by it.

Main Activities	Outputs/Deliverables	Scope
❑ Detailed conception of the project ❑ Creation of a central entity to administer the project ❑ Installation of a network and information systems ❑ Training of system administrators	❑ Central Unit created and studies initiated for project planning ❑ Design of a logical technological infrastructure and the security protocols for data that will circulate on the established network ❑ Physical infrastructure and information system installed and thereby guaranteeing the linkage and communication between central organs and departments and between these and those and the provinces ❑ Teams of network administrators working in the various institutions	National

Area	Duration	Implemented by	Estimated budget	Status
e-Government	5 years	CPInfo, MAE and state organs	US$30.000.000,00	Still to be financed

Project 23: Civil Identification System

Medium Term (2001-2004)

Description:

The project "Civil Identification System" aims, as its principal objective, to make the activities of the National Directorate for Civil Identification (DNIC) more productive through the use of more appropriate information-processing technologies and human resources with the ability to respond to the exigencies for using and taking full advantage of systems for manipulating huge volumes of data.

With this project, DNIC plans to establish an electronic registration system based on a single alphanumeric identifier containing, among other data, personal identification, photographs, digital impressions, and the civil status of all Mozambican citizens. This system will permit the registry services such as the emission of identification cards, personal bills, criminal registries, and birth, marriage and death certificates, lessening in this way the time required to issue these documents to citizens.

Besides improving the quality of DNIC's services, this registry will be used later by the Migration and Consular Services to issue passports and visas, by the National Health Service for the identification of patients by the same unique number, by the National Road Institute in the issuance of driving licenses, by STAE for managing electoral processes, and by other institutions that, by the nature of their services, use personal information about citizens.

Main Activities	Outputs/Deliverables	Scope
❑ Consolidation of the existing system ❑ Gradual expansion of the system to the provincial capitals and later to the districts	❑ New identification documents for all citizens ❑ Reduction in the time require to emit identification cards and other documents, better control of those who enter and leave the country and, consequently, better security ❑ Existence of a national database for the registry of all citizens ❑ District directorates with installed systems for the issuance of identification cards	National

Area	Duration	Implemented by	Estimated budget	Status
e-Government	4 years	CPD in collaboration with the DNIC and other institutions	US$10.000.000,00	Partially financed

Project 24: Electoral Processes Management System

Medium Term (2001-2004)

Description:

To reinforce and consolidate the democratic process, the Mozambican state needs a system to enable it to manage efficiently and transparently the electoral processes and speed up the publication of results.

This project consists of the conception, development and implementation of various databases interlinked by the system for the management of electoral processes. The databases to be created will store not only information about electors but also information about candidates in urban, legislative and presidential elections.

To ensure that electors with reading and writing difficulties will be able to vote without difficulties, the database will be designed to store images, finger prints, and other types of relevant data besides just the elector's or candidate's identification.

Main Activities	Outputs/Deliverables	Scope
❑ Conception and design of a database for electors ❑ Management of the created database ❑ Elections management ❑ Database designed and functioning	❑ Updating the data and calculation of results ❑ Updating the data and calculation of results ❑ Production of reports about elections ❑ Production of reports about administrative processes	National

Area	Duration	Implemented by	Estimated budget	Status
Governance	4 years	Technical Secretariat for Electoral Administration (STAE)	US$6.000.000,00	Partially financed

Project 25: State Financial Management System (e-SISTAFE)

Medium Term (2002-2004)

Description:

The current System for State Financial Administration incorporates procedures whose legal format derives from legislation from the end of the 19th century. Some examples of such legal procedures include the Regulation of Public Accounting of 1881 and the Regulation for State Finances of 1901.

The new System of State Financial Administration — also designated as e-SISTAFE and currently under design and implementation — tries to take advantage of the capabilities offered by ICTs and it is proposed to provide some financial administration services through the Internet.

With e-SISTAFE, MPF should achieve on time its objectives for state financial administration, namely, to

- ❑ present the annual State Financial Report before March 31st of the next year;
- ❑ present each three months the report about the execution of the budget;
- ❑ submit to the Parliament of the Republic the proposed State Budget before September 30th each year.

This project should also demonstrate that government transactions — for example, G2G (government-to-government), G2B (government-to-business) and G2C (government-to-citizen) — become more effective and efficient when availed electronically so long as all the security mechanisms are taken. This demonstration will serve as an example for other initiatives of this type that might occur.

The implementation of this project will be executed under the continual coordination of UTRAFE and will comprise, in the first phase, provision of the financial management system for MPF and the respective Provincial Directorates plus the Administrative Tribunal and some other central organs such as MISAU, MINED and MADER.

Main Activities	Outputs/Deliverables	Scope
❑ Evaluation of the existing components of the state financial management system; ❑ Conceptualisation, design and development of e-SISTAFE ❑ Integration with the information system of the controlling entities.	❑ Evaluation of the installed components of the system ❑ In the first phase, an installed and functional e-SISTAFE in MPF and, later, the system's expansion to all state organs ❑ Integration into the system of the information held by the Administrative Tribunal and the General Inspectorate of Finances	National

Area	Duration	Implemented by	Estimated budget	Status
e-Government	3 years	CPD in collaboration with UTRAFE	US$20.000.000,00	Still to be financed

Project 26: Health Information System (HealthNet)

Short Term (2002-2002)

Description:

Health Information System (HealthNet) is a project aimed at creating a technological infrastructure capable of interconnecting the country's main health units, the electronic management of patients' profiles and the management of pharmaceutical stocks. The implantation of this project will permit central, general and rural hospitals around the country to be interconnected, thus making it possible for all information, administrative and clinical alike, to be exchanged online. Under this system, health care requests and services can be centralised, which will facilitate monitoring the evolution of patients' condition, even when they are transferred from one health unit to another, and give access to patients' profiles irrespective of where they were first recorded.

A computerised ID card for patients will be introduced, which will make access to patients' profiles to be standardised, thus avoiding delays and inaccuracy in the provision of information regarding medical check-ups and analyses as well as ensuring the delivery of secure and reliable services.

Through this system, it will also be possible to know the level of medicinal stocks nationwide, thus expediting access to them and allowing for substitution of out-of-stock drugs by others as needed.

Main Activities	Outputs/Deliverables	Scope
❑ Definition of technological platform to be used ❑ Standardisation of patients' profiling and introduction of the digital ID card for patients ❑ Gradual installation of a management system for patients' records and pharmaceuticals ❑ Definition of the system's security parameters and access levels	❑ Technological platform defined ❑ Patients databases in place ❑ Management system for patients profiles in use ❑ System's access levels established	National

Area	Duration	Implemented by	Estimated budget	Status
e-Government	4+ years	MISAU	US$5.000.000,00	Still to be financed

Project 27: Country Development Gateway

Short Term (2002-2003)

Description:

Country Development Gateway: This project will create a large web portal with information of public interest, produced by different governmental institutions, and create mechanisms through which it will be possible to set up communication, in real time, between the public and government institutions or representatives.

The ICT Policy Implementation Strategy points toward improvement in the efficacy and efficiency of the services of state and governmental institutions for the general public, the provision of information to key sectors, the promotion and expansion of the use of ICTs in the basic areas of development in the country and all government institutions and public and private sectors, which are specific objectives to be taken into account by the Country Development Gateway.

As a component of the e-Government programme, the Country Development Gateway will furnish information about business opportunities in Mozambique to prospective national and foreign investors alike.

Besides the objectives specified above, in the gateway's conceptualisation and development, electronic discussion fora will be set up on themes related to the country's development, thus contributing to the creation of a well informed society, with high levels of cultural, economic and social knowledge that will contribute toward the citizens' participation in governance through dynamic and democratic interventions.

Main Activities	Outputs/Deliverables	Scope
❑ Definition of content and services to be included in the gateway ❑ Definition of the technological platform to be used for the gateway's development ❑ Definition of guidelines to guarantee the gateway's sustainability ❑ Conceptualisation and development of the gateway	❑ Contents and services identified ❑ Technological platform defined ❑ Information and services provided electronically	National

Area	Duration	Implemented by	Estimated budget	Status
e-Government	2 years	SISLOG and CPInfo, with the participation of all interested parties	US$700.000,00	Partially funded

Project 28: One-stop Shop

Short Term (2002-2004)

Description:

One-Stop-Shop: a project whose chief objective is to promote the use of ICTs to facilitate the provision of services in high public demand by citizens and the business sector. This will require the establishment of synergies and harmonisation of services that are presently not related and will permit that, through a single contact point, people or institutions obtain responses that, up to now, have required travel to many posts and much waiting time. Some of these services will be provided virtually over the Internet on the One-Stop-Shop site or on the sites for different public institutions with hyperlinks between them.

Examples of services to be provided by the One-Stop-Shop include the payment of bills for water, electricity, telephone; requests for certificates, identity cards, drivers' licenses, passports, visas; the filling out of forms to pay taxes and other fiscal fees; the identification of business and investment opportunities, etc.

One of the big benefits from this project will be increase in efficiency and efficacy of the services availed by state institutions, faster decision making, lower corruption, increased satisfaction for citizens and consequently the attraction of national and foreign investment, through the provision of current, reliable and safe information and the reduction of technical and administrative barriers, reduction of the costs and time required for decision making.

Main Activities	Outputs/Deliverables	Scope
❑ Proposal of a strategy for consultation and coordination with main agencies ❑ Design and production of a portal for access to public services ❑ Identification of the infrastructure required for the installation of One-stop Shops	❑ A strategy for consultation and coordination with the main agencies ❑ Virtual provision of public services ❑ Existence of public one-stop-shops throughout the nation for getting any type of service or information from public institutions	National

Area	Duration	Implemented by	Estimated budget	Status
e-Government	4 years	MAE and other ministries	US$2.000.000.00	Still to be financed

Project 29: Computerised Land Register

Short Term (2002-2004)

Description:

The Computerised Land Register is a project executed by the National Directorate of Geography and Register (DINAGECA), a central organ of the Ministry of Agriculture and Rural Development responsible for the administration and management of lands, the mapping of national territory, production of geo-reference information, and management of the entire process for the implementation of usufruct of land and the right to its exploitation.

With this project, DINAGECA plans to produce a computerized land registration, whose principal objective is the creation of an integrated system for the administration and management of land, accessible through the Internet, encompassing all the geographic information that feeds the process for authorization of requests related to the right to use and benefit from land.

Through this system, it will be possible to provide, within a useful period of time, information about the economic and legal situation of land, the types of permitted occupation, use and exploitation (for agriculture, residence, urbanisation, reserve, etc.). DINAGECA will also be able to provide to various users and public and private sectors statistics from the evaluation of soil fertility, forest spots, water reserves, animal and vegetation reserves, mineral exploitation zones, and tourist zones, in order to help them plan their programmes and projects for investment and development.

Main Activities	Outputs/Deliverables	Scope
❑ Identification of priority areas for action ❑ Study of the requirements for the integration of alphanumeric information with graphical functions ❑ Study of the requisites for equipment and possible cooperation with producing institutions ❑ Design and implementation of a multifunctional database linked to principal and secondary users	❑ Areas of action identified ❑ A system linked to the network, provision and registration of electronic information ❑ Solutions for information systems encountered in or outside the country ❑ Provision of geo-referenced information to different users	National

Area	Duration	Implemented by	Estimated budget	Status
e-Government	2 years	National Directorate for Geography and Census	US$1.150.000,00	Still to be financed

Project 30: ICT Survey in Public Institutions

Short Term (2002-2003)

Description:

The installation and development of ICTs in Mozambique now occupies an eminent position in the national development plans drawn up by the government. Proof of this is the approval of the ICT Policy, which shows that determination exists, at a high level in the state, to make ICTs a decisive instrument to support the activities for the production of wealth in the country. For this policy to be implemented successfully, the government took a second step, approving the implementation strategy that will allow the realization of the policy's objectives. Of recognized importance is the creation of an Information Society in Mozambique because, besides other advantages, this will contribute to the country's participation in the world economy.

Since the government is seriously engaged in promoting an Information Society, it should be a model user and promoter of new technologies in public institutions at all levels. This requires rigorous planning of the architecture and most adequate applications, based on knowledge of the existing situation, as proposed for the Government Electronic Network.

The project "Survey of the ICT Survey in Public Institutions" points the way to follow and, in relation to public institutions, tries to furnish data and information about the
- number of computers in use (desktops, laptops, servers, clients)
- operating systems usedq quantity and type of peripheral devices in use
- programmes used and for what purpose
- networks and types of networks in use
- sharing of information and the types of that informationq ICT technicians working and their qualifications
- maintenance and assistance systems
- training schemes and the upgrading of functionaries in the use of ICTs
- volume of investment in ICTs and the return on investment, etc.

Main Activities	Outputs/Deliverables	Scope
- Definition of the basic structure for the database - Development of the database - Collection of necessary information to be included in the database - Insertion of data into the defined base - Production and provision of technical reports on ICTs	- Structure of the database - Information provided about the status of ICTs in state institutions	National

Area	Duration	Implemented by	Estimated budget	Status
Governance	1 year	CPInfo in coordination with all state organs	US$250.000,00	Still to be financed

8.5. POLICY AND REGULATION

With a view to ensuring or improving the protection of the public against different forms of electronic abuse and crime, the Government, in collaboration with its partners, will take the following measures, inter alia:

a) Instituting a juridical legal framework which will ensure a balanced and equitable development infrastructure of support to the ICTs;

b) Adopt solutions and cryptographic codes less susceptible to violation;

c) Combat the violation of citizens' rights and attempts against public order and social and cultural values, especially pornography, abuse and violence against women and children via the Internet;

e) Work with non-governmental organisations and other civil society institutions to bring transgressors to justice, either civil or criminal.

— ICT Policy, 6.5 and 7.3

Part of the delegates to the 2ⁿᵈ National Seminar on ICT Policy

Project 31: Capacity Building - ICT Policy Commission Secretariat

Short Term (2002-2003)

Description:

The ICT Policy Commission Secretariat will play a key role in the mobilization of resources for the implementation of the ICT Policy Implementation Strategy, in supporting the development of detailed project documents and in facilitating implementation. This will require intensive work in the short term to finalise project proposals with partner organisations in Mozambique and with funding agencies.

It also has a broad advisory role with respect to issues related to information society development. These include privacy and security related to digital information and the use of the Internet, e-commerce and electronic signatures, the identification and implementation of standards and intellectual property. The Secretariat will need to collect information in these areas and identify key sources of expertise (both institutions and individuals), which can be tapped to participate in specialized workshops organized in Mozambique and to host study visits. It will also need to identify which institutions in Mozambique need training in these specialized technical areas.

This project will build capacity within the Secretariat to develop the expertise and networks necessary to increase understanding in Mozambique of key information society issues.

Main Activities	Outputs/Deliverables	Scope
❑ Identify key issues ❑ Identify sources of expertise ❑ Build networks linking external sources and internal users/clients ❑ Develop dissemination strategy aimed at practitioners and policy makers	❑ Tailored information disseminated to Mozambican policy-makers and practitioners on key issues ❑ Workshops organised in the country ❑ Participation in specialised workshops organised outside the country	National

Area	Duration	Implemented by	Estimated budget	Status
Policy and Regulation	2 years	CPInfo	US$250.000,00	Still to be financed

Project 32: Capacity Building in INCM

Short Term (2002-2003)

Description:

This program would provide resources to INCM for a series of institutional linkages, targeted workshops and research relationships to support the Regulatory Authority and his staff in implementing their regulatory mandates. As telecom liberalization proceeds, the Regulatory Authority will have responsibility for the implementation and oversight of a series of proceedings to elaborate, clarify and revise detailed regulations and to issue findings and decisions on complex and sometimes contentious matters. To assist INCM in fulfilling these responsibilities, this program would establish and support relationships with a set of institutions in other countries that would commit to providing expert advice and opinions to clarify options and support decisions. Such a network of relationships and focused consultations would be designed and organized to the specifications of the Regulatory Authority and his staff and engaged at such time and manner as they determine to be most helpful in the exercise of their responsibilities.

Main Activity	Outputs/Deliverables	Scope
Consultation with regulatory authorities and experts in other countries	❑ Workshops of experts ❑ Background memoranda ❑ Alternative draft approaches	National

Area	Duration	Implemented by	Estimated budget	Status
Policy and Regulation	3 years	INCM and MTC	US$150.000,00	Still to be funded

Project 33: Telecommunications Sector Reform

Short Term (2001-2005+)

Description:

Strengthening the capacity of the Ministry of Transport and Communications: this is what this project is all about. The ministry must be ready to address issues related to: regulatory structures in the context of liberalisation; privatisation of TDM; rural connectivity; reform of the postal sector; institutional capacity; and the social implications of privatisation of TDM. The project is underway.

Main Activities	Outputs/Deliverables	Scope
❑ Establishment of appropriate regulatory framework ❑ Implementing a liberalisation policy in the telecommunications sector ❑ Restructure existing institutions to promote competition and ensure clarity of rules and roles ❑ Staff capacity building	❑ Regulatory framework in place and functioning ❑ New licenses issued ❑ Universal Service Fund operating ❑ Privatisation of TDM underway	National

Area	Duration	Implemented by	Estimated budget	Status
Policy and Regulation	5+ years	MTC	US$11.600.000,00	Fully funded

8.6. ENTERPRISE

The Internet today is not only the major worldwide telecommunications network but also a truly global electronic market.

If the country wishes to be active and relevant in the Global Information Society, there is no alternative to adopting the new paradigms and new forms of business relations in the Information Era. With this in mind and within the scope of this Policy, the Government, in collaboration with its partners, will:

    a) Take action to clarify and educate persons in the nature, benefits and risks associated with e-business;
    b) Support initiatives of firms, especially small- and medium-size ones, that wish to engage in e-business;
    ………………………..
    f) Implement security mechanisms for Internet transactions.

— ICT Policy, 7.4

Participants in the International Symposium on the ICT Policy Implementation Strategy debate over the business opportunities offered by information and communication technologies

Project 34: Facilitation of Local ICT Business

Short Term (2002-2004)

Description:

A comprehensive study to develop a set of statutory and regulatory codes or amendments that promote ICT businesses and electronic commerce.   Areas of focus would include licensing and company approval processes, taxation, customs procedures and import duties, commercial lending, foreign investment limitations, intellectual property protection, immigration and repatriation of income. The study would combine research into existing legal and administrative rules and practices with surveys and intensive interviews with existing small and large businesses to determine the practical constraints and opportunities under existing conditions. The findings and proposed amendments would also be based on comparative studies of the legal/administrative practices of selected African and other developing countries, as facilitated by consultations with international organizations and NGOs. The study should form the basis of a longer term programme of support to small ICT businesses developed in collaboration with international associations of employers or chambers of commerce.

Main Activity	Outputs/Deliverables	Scope
Research and consultations into the legal and practical constraints and opportunities for ICT-related businesses	Statutory and regulatory amendments	National

Area	Duration	Implemented by	Estimated budget	Status
Enterprise	3 years	CPinfo, with concerned ministries and business organisations	US$150.000,00	Still to be financed

Project 35: MICTI Phase 1 - Incubator

Short Term (2002-2004)

Description:

A key factor to the expansion of developing economies is the growth of small and medium sized private sector businesses; such businesses are at their most vulnerable in the early stages of their existence. To be competitive in the global information economy of the 21st century countries need an efficient and effective ICT sector. The MICTI Incubator has as its central aim: To assist small and medium sized ICT businesses, through the provision of high quality facilities and services, to develop into successful and economically viable entities that will contribute to the economic and employment growth of Mozambique. The incubator will provide a select group of local entrepreneurs with a maintained and secure facility, a range of administrative and value added services, through sponsored training, and through the provision of day-to-day mentoring. The first pilot phase of the project will be implemented on the premises of Universidade Eduardo Mondlane.

Main Activities	Outputs/Deliverables	Scope
❑ Rehabilitate building site Identify ❑ Define legal structures - including venture capital fund - on basis of existing business plan ❑ Identify management ❑ Identify means of selecting first occupants (maximum 5) ❑ Select tenants	❑ Building renovated and equipped ❑ Management structure established ❑ Businesses operating on site ❑ Businesses graduating from site	National

Area	Duration	Implemented by	Estimated budget	Status
Enterprise, Human capacity	3 years	UEM (MICTI)	US$370.000,00	Still to be financed

8.7. DEVELOPMENT IN PROVINCES

Having noted that more than 50% of the country's ICT infrastructure is concentrated in the capital city of Maputo, the ICT Policy, in paragraph j) of section 4., sets out, as one of its objectives "To contribute to the reduction and gradual elimination of regional imbalances, the differences between city and countryside, and between the various segments of society in respect of access to development opportunities."

Even though most of the projects included in the ICT Policy Implementation Strategy have as their scope the entirety of the national territory (e.g. the National Transmission Network, the Telecentres, the SchoolNet, etc.), the projects listed in this section were thought out specifically having in mind the creation of such basic conditions that would allow the rapid ICT development at the provincial level, in terms of infrastructure, human capacity and business opportunities.

Many consultations and debates were held at both national and provincial levels in search for the best ways in which to promote ICT development all over the country

Project 36: Provincial Digital Resource Centres (CPRDs)

Short Term (2002-2003)

Description:

CT human resource and infrastructure constraints in the country are more acute at the provincial level and rural areas where the majority of the population resides. Although there are several pockets of provincial ICT development, they are widely dispersed and disconnected. There is thus room for an organizational mechanism that can help concentrate ICT infrastucture, skills and investment and provide a single entry point for ICT activity in the provinces, stimulate local demand for ICT services by all sectors and support capacity building, content and application development for widespread deployment of ICT. The Provincial Digital Resource Centres (CPRDs) are designed to accomplish this goal by operating as local hubs on the basis of a multi-sectoral and multi-functional approach.

The CPRDs will foster the development of both intra and inter-provincial networks by supporting other organizations to run their own operations in an autonomous fashion while deploying their own sectoral applications and addressing local development targets.

Main Activities	Outputs/Deliverables	Scope
❑ Installation of a sound connectivity platform ❑ Cross-sectoral and cross-thematic training workshops ❑ Content and applications development	❑ Access to ICT infrastructure and the Internet to the community at large ❑ A large communtiy of qualified end users ❑ Increased information exchanges among users and organizations	Provincial, rural and urban poor

Area	Duration	Implemented by	Estimated budget	Status
Development in Provinces	2 years	CPInfo and CPRDs	US$2.200.000,00	Still to be financed

Project 37: Mobile ICT Units

Short Term (2002-2003)

Description:

Mobile ICT Units will expose teachers and students to computer literacy, as well as provide a mean for decentralized E-Government campaigns. This project will complement the CPRDs, SchoolNets, Community Access Points and related in an efficient and cost-effective manner and provide services to those sub-urban and rural areas lacking adequate ICT infrastructure. The MICTU will be properly equipped with computers and communication facilities, including phone and fax and be connected via low-cost two-way satellite link. It will also serve as an ad-hoc training platform for rural citizens, public servants at provincial-level and as an Internet connectivity room for ad-hoc events and campaigns, such as information campaigns on HIV prevention, Government one stop-shop activities, etc. The MICTUs will also provide local network access to basic content materials available to users from a selected library of multi-media CD-ROMs.

Main Activities	Outputs/Deliverables	Scope
❑ Design the ICT MU ❑ Assemble the MICTUs ❑ Campaigns/Training	❑ A blueprint for a functioning MICTU ❑ MICTUs ready to roll ❑ Citizens trained, increased citizen participation in local campaigns/issues	Provincial, Rural, Urban Poor

Area	Duration	Implemented by	Estimated budget	Status
Development in Provinces	2 years	CPRDs	US$1.200.000,00	Still to be financed