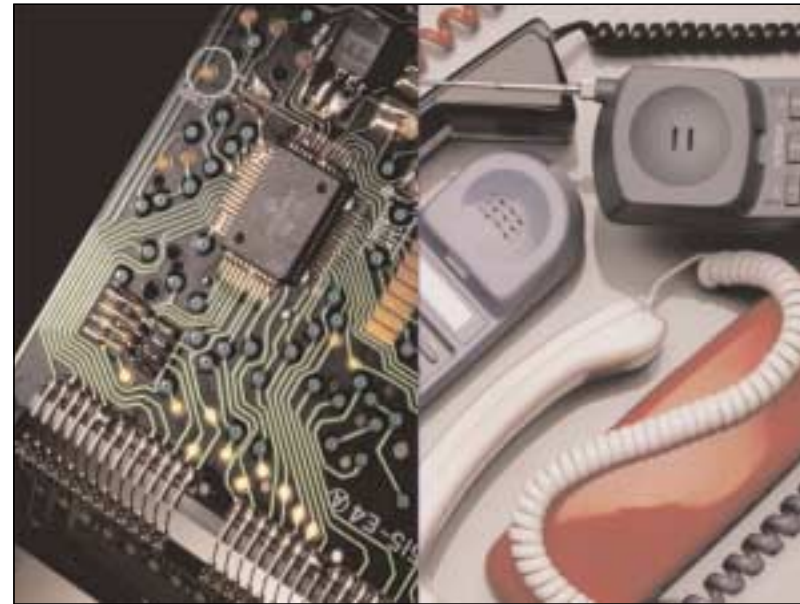## PART THREE

INFORMATION COMMUNICATION TECHNOLOGY PLAN

INTRODUCTION

There is an urgent need for the Department of Foreign Affairs to transform its current ICT infrastructure and to develop common information technology applications, networks, databases, security and network management capabilities to facilitate the achievement of its strategic objectives.

The ICT plan encapsulates the strategic vision for the ICT technological environment that the Department of Foreign Affairs would like to establish over the next three years. The purpose of the plan is to create a consensus vision of how information technology can best be used in supporting the Department's strategic goals.

The ICT plan will also provide guidance and information on adopted and proposed standards that will lead the Department to an open systems environment. The plan is therefore designed to assist the Department in making informed decisions when choosing appropriate system specifications to meet current and planned requirements.

The department has fallen behind in the development and growth that has changed and improved the methods that information is managed, transmitted, shared, and used to enhance the capabilities and performance of individuals, business units and organisations.

To address these gaps, the Department commissioned the development of a Master Systems Plan (MSP) that is scheduled to be completed by end May 2003. The Department needs to continue pursuing a concerted and co-ordinated effort to deploy modern office automation platforms, and local area networks at all overseas posts, as well as an improved fast, reliable and secure global communications network that is centrally managed to support the users.

THE FUTURE

Whilst the Master Systems Plan is being developed, the Department is positioning itself for a radical new information-based world where its ICT environment will:

- Allow missions and Head Office to benefit from the new technologies used
- Take full advantage of information access and tools
- Streamline operations to improve service and enhance the productivity of the workforce
- Provide secure, yet broad-based access to a large quantity of internet information while reducing enclaves (or silos)
- Provide flexibility to embrace emerging technologies and respond rapidly to new and changing requirements

STRATEGIC PRIORITIES

To make the most of the emerging capabilities of technology in order to further the achievement of the Department's foreign policy objectives, six technological priorities will be pursued. These priorities will establish a technological framework for the conduct of international affairs, known as e-Diplomacy.

These priorities, of equal importance, are:

- The finalisation of the Information Communication Technology Master Systems Plan
- A secure, managed, global network based on commercial products and technologies while using approved security devices
- Expanded suite of systems that supports the substantive work of foreign policy applications
- Modern integrated messaging and document management i.e. Knowledge and Information Management (KIM)
- Streamlined administrative applications that increase productivity
- A trained and productive workforce

PRIORITY 1 : FINALISATION OF A MASTER SYSTEMS PLAN

THE PROCESS

A consortium was appointed to establish the master systems plan. The project is being managed by the Department and monitored and verified by SITA

PROJECT SCOPE

- The project will provide the Department with a strategic Business and Information Technology review that will enable the Department to deploy solutions that will facilitate the achievement of its strategic objectives.
- The assessment will include the need for knowledge and information management and will ensure that the model developed is of world class standard.
- Internal Audit will provide input to ensure that the correct processes and procedures are followed

THE MSP WILL PROVIDE:

- An evaluation of the existing ICT infrastructure
- Identify technology gaps between the current infrastructure and the strategic vision of the Department.
- Identify candidate technologies
- Evaluate and update the existing ICT strategy
- Establish standards
- Provide a functional description of the envisaged technology infrastructure
- Provide an analysis of the requirements needed to develop, implement and maintain the applications and systems required in the Department
- Cost estimate for the deployment of the proposed systems
- Risk analysis and impact assessment
- A management summary that provides a high level, holistic view of the ICT environment

PRIORITY 2 : A SECURE GLOBAL NETWORK

BUSINESS REQUIREMENTS

The global network will meet the following business requirements:

- Command and Control Messaging – un-interruptible, secure, highly reliable network services for mission critical traffic
- Applications and Data Access – web-based and data-processing applications for diplomatic activities, administrative and other business processing
- Full Internet Access –access to the wealth of information sources on the Internet with secure departmental e-mail facilities.
- Integrated Financial Systems – Scaleable applications at missions, update of foreign currency conversions and access to BAS
- Voice – secure and open voice communication
- Innovative Business Applications – video conferencing, distance learning and other applications.

CHARACTERISTICS OF THE NETWORK OF THE FUTURE

- Reliability and availability – minimise interruptions and disruptions
- Scaleable capacity on demand – accommodate the growing and changing needs for networking services and bandwidth
- Security – protect information and internal IT assets whilst providing access to open communications
- Consistency with industry direction – capitalise on commercial trends to keep up with user demands
- Manageability – provide a single converged network infrastructure for data and voice communications that can be managed and supported.

TARGET SOLUTIONS

- The Department intends to use VSAT satellite services and open standards and protocols to ensure that capabilities remain current as technology and industry trends evolve. Virtual Private Networks (VPNs) will be established across VSATs and other commercial circuits to meet the Department's networking requirements.
- Security will be addressed, as we do now, by using encryption to ensure data integrity and firewalls to protect the Department's network from attack.
- Classified information will be carried on a separate high security Intranet network that will be isolated from the open network to prevent access from unauthorised sources.
- The Department is working closely with other Government Agencies such as SACSA, SANDF, NIA, SITA and the GTOC to design and implement appropriate levels of network security with risk management procedures.

The open network of the future will be capable of full access to the Internet for all users at all locations. The Internet will provide a vehicle for collaboration and partnerships among members of the international affairs community. Through the Internet, Departmental staff will be able to interact with their counterparts in foreign governments, other RSA agencies, non-government organisations and the South African public.

IMPLEMENTING THE GLOBAL NETWORK

ICT, guided by the MSP, will undertake the planning and development of this much-needed global network. As resources permit, and in accordance with priorities, missions will be provided with access to the network. Departmental Branches and Missions will be provided with both secure Intranet and open Internet accesses. Full global connectivity will be assured, with scaleable circuit capacity provided initially through the Internet and VPNs. Thus, users need not wait until the target solution satellite based very small aperture terminal (VSAT) network is fully deployed to begin reaping the benefits of global networking. With appropriate security techniques, the Internet and other commercial services available at various locations will be used to create secure VPNs.

HARDWARE REPLACEMENT

In order to ensure that the Department is not caught in the technology trap again it is essential that a sustainable plan be developed and implemented. Equipment and applications must be replaced or upgraded in a progressive manner.

- Hardware must be replaced over a three-year cycle, with a minimum replacement of one third of the Department's equipment per year.
- Operating systems (OS) must be replaced in a manner that will ensure that it is transparent to the user. Specialist applications must be supported.
- Application software must be upgraded to keep abreast of the systems in place. This upgrade must be done regionally to ensure compatibility within that region and the users must be trained in the new systems.

PRIORITY 3 : GLOBAL ACCESSIBILITY

- Departmental databases will be made accessible to any authorised user, regardless of location. Information management tools will enable users to search, retrieve and analyse information from any source, without requiring specialised knowledge of either the technology or individual databases.
- With the ever-increasing importance of multilateral diplomatic efforts and global initiatives, the Department's substantive information technology systems must be re-tooled to support changes in emphasis to those broader activities.
- Authorised Officials will have access to:
  - Databases on global issues
  - Tools and information that support strategic planning, economic analyses and policy formulation
  - Multilateral and bilateral treaties and economic agreements
  - Research information available from a wealth of sources
- Powerful tools are available and are becoming increasingly cost effective for supporting collaborative processing in a highly dispersed global environment. Technologies such as GroupWare, video conferencing and workflow management will be used to enable teams to work together on projects, documents, tasks and issues (the Cluster approach).

PRIORITY 4 : KNOWLEDGE AND INFORMATION MANAGEMENT (KIM)

- The Department's messaging system, which is extremely important to virtually all substantive and administrative activities, is in a stage of transition. Efforts are underway to standardise on a single mail package.
- The current concept of informal mail messaging and formal cable messaging will be replaced in the near future with a document management and information exchange system based on encryption, authentication and strong digital signatures. Officials will then be able to create messages and multi-media documents at their desks and will be able to share them with individuals and other organisations as needed. Technology will enable teams to work together on a document or be able to share a set of documents regardless of where they are located.
- Commercial products are available and could easily be used to standardise on electronic mail, image management, document storage and retrieval and workgroup computing.
- The benefits of an information messaging exchange will allow officials to search local and central archives (databases) and retrieve messages consistent with their access privileges. Authorised Intranet users will have access to a separate high security database for classified messages.

PRIORITY 5 : STREAMLINED OPERATIONS

- We have already pursued different opportunities to improve the workflow efficiency of administration
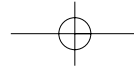
operations. Many of the labour-intensive operations have been automated, such as the automation of message transmission and reception. However, streamlining is especially critical at overseas posts, where administrative and technical staff is limited and scarce resources must be focused on mission priorities.

- The technical support at missions has not kept pace with the expansion of services. Installation and maintenance of outdated equipment and software has become more complex. If the current computer technology life-cycle of approximately three years continues, demands for technical support will increase. Even with advanced communication networks and applications, the role of administrative staff at missions cannot be scaled back.

- Commercially available products and services, once customised, could almost support administration and routine tasks. The use of standard software and products will ease the training and support burdens and will allow officials to capitalise on rapid advances in software technology. By means of the Internet and Web technology, the Department can centrally maintain administrative applications for such functions as finance, human resources and logistics while providing rapid access to the information from any mission in the world.

PRIORITY 6 : TRAINED WORKFORCE

- The Department faces an ongoing challenge in the recruitment and retention of skilled technical and data processing professionals needed to support its global operations. Human Resource Development (HRD) will be approached to develop an ICT specific HRD plan to address development of existing staff and recruitment of additional staff.

- The ICT specific training programme will be for all levels of technical and support staff. The elements of the programme will be benchmarked against Human Resources models available in the market. This training will be provided through a variety of means and technologies. All entry-level staff will receive a standard set of information technology and technical training to prepare them for the start of their careers as knowledge workers.

- In line with this, it will be essential for all users to undergo skills training in the use of the system applications and facilities. This training will include:

- The use of the Intranet
- Searching databases
- Accessing secure and open networks
- Use of office packages
- Security awareness

ICT PROJECTS AND ESTIMATED COSTS

A list of ICT projects, estimated time frames and costs is attached as an Addendum.

RISKS

THE FOLLOWING POTENTIAL RISKS ARE IDENTIFIED:

- Master Systems Plan not completed on time
- Human Resources: Recruitment and retention of staff
- Mission Support Centres not adequately capacitated.
- Project plans not approved timeously.

CONCLUSION

- For its effective functioning, the Department must explore and utilise the full benefits of information technology provided by the converged infrastructure of voice and data hardware and software platforms, network facilities and associated services, including the following features:
  - Centralised information centres
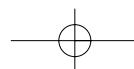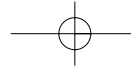
to store and provide access to information through knowledge and information management
- A secure, robust global network to support end-to-end connectivity
- Real-time financial reporting
- An integrated solution for enterprise network management to

ensure cost effective support and maintenance
- Standards based infrastructure services to promote interoperability and ease of maintenance
- Modern hardware platforms, including standard user desktops, thin client workstations and computers for mobile computing.

- The infrastructure will have inherent attributes of reliability, scalability, flexibility, availability, manageability and maintainability. All these attributes presuppose commonality across the entire architecture from the user platforms to the infrastructure required to support the Department's mission.