



Republic of Mauritius

**National Telecommunications Policy 2004  
(NTP – 2004)**

Ministry of Information Technology and Telecommunications  
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# MINISTRY OF INFORMATION TECHNOLOGY AND TELECOMMUNICATIONS

## NATIONAL TELECOMMUNICATIONS POLICY (NTP – 2004)

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## 1. PREFACE

Info-communications is the most dynamic industry in the world today and is evolving as the modern trade route. The development of that industry relies to a large extent on the telecommunications sector being competitive, with many service providers offering quality telecommunications facilities on demand. Mauritius is well set to be on the Information highway within the rapidly developing global information infrastructure. In view of the rapid advancement in telecommunications, there is a need to act quickly to meet the challenges facing telecommunications business over the coming years by restructuring the Information and Communications Technologies (ICT) sector.

Government, having recognized the potential of the ICT sector to become the fifth pillar of the economy to provide more remunerative employment, and to place Mauritius in the league of top performers in the global economy, has accelerated the liberalization of the telecommunications sector by an early termination of the exclusivity of the incumbent operator as from 1<sup>st</sup> January 2003. Government is also aware that policy formulation for the reform of the telecommunications sector must take into consideration the short- and long-term national objectives and the ever-changing social, economic, political, and technological conditions.

The current policies have thus to be revisited to make them more responsive to the new opportunities and challenges of the telecommunications sector through technological convergence and interoperability.

This document outlines the overall policy objectives and targets for the telecommunications sector and spells out the strategies to be adopted. It also sets out the methodology to ensure fair, effective and sustainable competition for the new market paradigm.

The salient features of this policy comprise the following:

- Transformation of the telecommunication market structure and regulation towards a more liberal, technologically-neutral and competitive one
- Creation of a conducive environment to attract new investments and players
- Establishment and promotion of the National Information Infrastructure
- Consolidation of the independence of the regulatory authority
- Provision of adequate info-communications services access at affordable prices
- Development of management strategies for the use of scarce resources
- Introduction of code of practice for service providers.
- Promotion of technology innovation and competition

The major pillars of the NTP-2004 include implementing and fostering competition in the telecommunications services market, over the coming years and paving the way for the adoption of the concept of convergence of Information Technology, media, telecommunications and consumer electronics.

The Ministry of IT and Telecommunications is responsible for the elaboration of policies to ensure that challenges facing telecommunications businesses are adequately dealt with. Government recognizes the importance of continuously monitoring its policies and the value of the national ICT assets in linking to the sector reform programmes.

To achieve this objective, a new IT strategy for an innovative and coordinated implementation of Government IT initiatives and other IT projects will be announced shortly by this Ministry.

## **2. OVERVIEW**

The 1988 Telecommunications Act established a legal and regulatory framework that was well suited to the provision of core telecommunications services by a Government-owned monopoly. This was subsequently replaced by the Telecommunications Act in 1998, which later on, due to the convergence of Information and Communications Technologies, was further restructured into the Information and Communications Technologies Act of 2001. As an outcome of this new legislation, the Information and Communications Technologies Authority was set up to replace the former regulatory body (Mauritius Telecommunications Authority).

Mauritius Telecom (MT) being the incumbent Public Fixed Telecommunications operator had as at December 2003 a fixed lines penetration of 348,232 over 1.228 million inhabitants. In the public mobile telecommunications sector, the two mobile operators, Cellplus and Emtel have fully digitalized networks operating on the GSM standard in the 900 MHz and 1800 MHz band with a customer base of 325,800 and 140,000 respectively in year 2003.

In terms of international connectivity, Mauritius Telecom (MT) currently has 1,327 international circuits to some 32 countries via satellites and the SAFE fibre optic submarine cable. At the end of 2003, MT had 65 Mbps of symmetrical international Internet bandwidth in use. MT has a well-developed national backbone consisting of several fibre optic rings with a few microwave radio links. It connects Rodrigues and Agalega through satellite.

There are three active Internet service providers, Telecom Plus, Africa Digital Bridges, and Data communications Ltd. offering dial-up and digital subscriber line (DSL) access to customers. There was an estimated 210,000 Internet users in the year 2003, with 58,000 dial-up access shared between the operators.

In accordance with the Central Statistics Office data reported in the 2002 household survey, the household fixed telephone penetration was 80 per cent in year 2002. The household survey of 2002 also revealed that 18 per cent of Mauritian households own a computer and that 13 percent of households had an Internet connection.

## **3 VISION AND MISSION**

### **Our Vision**

To create a telecommunication environment that allows optimal opportunities for all, citizens and businesses alike, to participate fully in the modern global information economy.

### **Our Mission**

The National Telecommunications Policy (NTP) purports to provide the means to achieve such growth and development in the telecommunications sector to make it a modern and dynamic component of the economy

#### **4. OBJECTIVES**

- To promote Mauritius as a key info-communication hub in the region
- To create a modern, secure, robust and efficient telecommunication infrastructure taking into account the convergence of info-communications, media, telecommunications and consumer electronics
- To ensure ubiquitous access to affordable info-communications services
- To provide wider consumer choice
- To promote smooth entry of new operators in the telecommunications sector
- To attract private investment for the development of the telecommunications sector through effective competition
- To ensure equitable access to scarce national resources
- To reinforce national security interests in the new liberalized telecommunication environment
- To encourage research and development (R & D) to facilitate the absorption of new technology and to upgrade the telecommunication facilities and services

In order to achieve the above objectives, it will be necessary to consolidate mechanisms and build upon market-oriented policies to create an enabling framework for the development of this industry as follows:

- To create the conditions for the adoption of cutting-edge and convergent info-communications technologies.
- To introduce by the end December 2004 a Convergence Act, which will combine information technology, media and telecommunications.
- To create conditions for sustained private investment in the telecommunications sector by ensuring transparent policies.
- To ensure the efficient management of scarce resources, including the radio frequency spectrum, telephone numbering, and info-communications infrastructure
- To expand the telecommunication services in a systematic and comprehensive manner to foster the development of innovative services.
- To ensure reasonable quality of service at affordable prices.
- To promote mechanisms of low-cost access to info-communications including wireless services.

#### **5. TARGETS**

In order to ensure that measurable progress is made in the achievement of these objectives, specific targets have been identified as set out hereunder:

- Increase fixed telephone density from 28% to 35% by 2005
- Increase mobile cellular telephone density from 37% to 50% by 2005
- Extend broadband connectivity to all business hubs within the country by 2006
- Provide at least 30% of household with broadband connectivity by 2008
- Provide at least 50% of household with Internet connectivity by 2008.

## **6. NATIONAL INFORMATION INFRASTRUCTURE (NII)**

It is the policy of the Government to ensure that the National Information Infrastructure (NII) provides gilt-edged services that engender optimal performances in the rapidly emerging info-communications sectors. Mauritius currently has a relatively good telecommunications infrastructure that forms the basis for its own information highway and connectivity to the rapidly evolving Global Information Infrastructure (GII). Further development of NII will depend on the use of appropriate info-communications services, modern equipment and the availability of qualified manpower.

Some key features which will help in the further development of NII are:-

- Provision of broadband capacity
- Availability of services at affordable costs
- Establishment of international reliability and redundancy standards
- Ensuring adequate capacity to provide service on demand
- Accessibility of services by the large majority of consumers
- Facilitating the delivery of a wide range of value-added services

### **6.1 Info-communications services**

The development of the Info-communications services will be focussed both on the continued attraction of investment in this sector and the creation of information infrastructure making use of emerging technologies. These services include *inter alia* fixed services, mobile cellular services, international services, cable services, data services, Internet telephony services, Internet services, value-added services, broadband and multimedia services.

A monitoring mechanism for coordination among all stakeholders shall be established by Government to facilitate policy formulation regarding the different aspects of info-communications services and related activities of the NII.

### **6.2 Info-communications equipment**

The basic requirement of the NII is to develop state-of-the-art technologies to facilitate the rapid deployment of info-communications equipment and accessories. To the greatest extent possible, access to all types of info-communications equipment and accessories shall be facilitated in a cost effective manner. Government will also take other measures to promote affordable ICT equipment which could include national manufacturing of ICT equipment, reduced customs tariffs and duties, and end-user loans to foster affordability of ICT equipment.

### **6.3 Capacity building**

Government will set the example as a model user of communications and information technology especially in areas like Education, Health, Tourism, Finance and Corporate Affairs. Mauritius will use its information superhighway for educational curricula and re-training programmes for the workforce to transform itself into a highly sophisticated, knowledge-based, and technology driven society. Government shall continue to give high priority to capacity building to meet the needs of the new economy, particularly those of the emerging info-communications sector.

In this context, the University of Mauritius and other educational institutions will be encouraged to introduce new and appropriate courses to produce info-communications qualified personnel. In addition, Government will promote advanced training in info-communications for professionals and strengthen cooperation for the exchange and training of personnel and the conduct of research studies with friendly countries, as well as regional and international organizations.

## **7. ENABLING ENVIRONMENT**

Government shall endeavour to pursue the creation of an Information Society to maximize the economic and social benefits and shall establish a trustworthy, transparent, and non-discriminatory legal, regulatory and policy environment, capable of promoting technological innovation and competition. This will favour the necessary investments, mainly from the private sector, in the deployment of infrastructure and development of new services.

Traditional limitations or barriers to market entry will be reduced or eliminated to enable a wider range of innovative, high-quality and cost-effective services to be offered in a liberalized environment. This will include the use of such new technologies like Internet Protocol (IP) telephony. The issues such as cross-media competition, access to networks, and technology neutral regulation will be placed at the center of the convergence policy.

Government will facilitate fair and effective competition in all market segments, while maintaining economic incentives and ensuring trust and confidence for business activities.

### **7.1 Market environment**

A new market environment will be developed to guide the sector towards accelerated development taking into account technological neutrality, openness and convergence. This will be achieved by the introduction of services-based competition in the short term, culminating in facility-based competition.

### **7.2 Liberalisation**

Government will ensure that the liberalisation of the telecommunications sector allows greater access to available technologies and services for businesses and consumers. This will encourage innovative action and promote more investment within the telecommunications sector.

### **7.3 Competition**

Government shall intervene, as and when necessary, to ensure that market liberalization facilitates fair, effective and sustainable competition, and shall take appropriate measures to tackle market failures and curtail abuses of market power to improve the overall efficiency and performance of the telecommunications sector.

#### **7.4 Positive discrimination in regulations**

It is the policy of Government to promote the rapid development of telecommunications sector in order to establish economic growth. To reach this objective, Government believes that industry will be most rapidly developed through the fostering of competition. It is expected that competition will encourage private capital investments, which will facilitate large-scale infrastructure deployment.

The transition of the telecommunications sector from non-competitive to competitive environment may be complicated by the influence of dominant/incumbent or another operator with significant market power and their control of infrastructure and networks essential for development of competition. These two factors may permit a dominant/incumbent to act independently of competitive market forces and to adopt business practices that may constrain the development of the sector.

In these situations, Government will ensure that, where appropriate and for certain types of services, introduce a degree of “positive discrimination” in the regulatory framework in order to facilitate the development of the sector.

#### **7.5 Self-regulation and industry co-regulation**

Government anticipates goodwill and cooperative spirit between the operators and the regulatory authority, for instance in the form of industry agreements (self-regulation) and cooperative fora endorsed by the regulatory authority.

In some areas, industry agreements (self-regulation) are used to ensure the best possible regulatory framework. Such agreements shall be adopted in the areas of access to the ‘raw copper’, co-location, service provider agreements, and carrier pre-selection constituting the basis for interconnection agreements between operators.

The regulatory authority will also involve the operators in the regulatory process by means of cooperative fora. This will ensure industry participation in the development of regulation and initiatives.

### **8. POLICY FRAMEWORK**

There are current international trends that influence the value drivers within a given market, such as:

- Reduction of international accounting rates
- Implementation of WTO agreements
- Introduction of calling card services
- Emergence of UMTS or third generation (3G) and beyond mobile cellular networks
- Ability of satellite to deliver multimedia and IP Services
- Coming into operation of the South Africa Far East (SAFE) fibre optic submarine cable
- Emergence of Internet telephony
- Emergence of digital broadcasting

Government will therefore, focus its policy on creating an environment which will allow new entrants to adopt networks, systems and facilities of their choice for different types of services, regardless of the type of technology. Towards this end, continued consideration will be given to the deployment of the following telecommunications services;

### **8.1 Global mobile personal communications by satellite (GMPCS) services**

Internationally, although GMPCS services have not yet delivered their promise, mobile cellular providers would be allowed to include such services as part of their product, through agreements with the GMPCS provider & the International provider. GMPCS operators, with the proper regulatory support will be allowed to provide voice, non-voice messages and data services.

### **8.2 Internet telephony services**

The provision of Internet telephony service is permitted at this stage to promote voice/fax services to the public subject to terms and conditions stipulated by the regulatory authority, commensurate with the objectives stated in this policy document.

### **8.3 Mobile Cellular services**

Early in the liberalization process, the regulatory authority made a reservation in the frequency range 1800 MHz band for GSM (Global system for mobile communications) services in Mauritius, with a view to opening this sector for further competition. To ensure a smooth transition towards UMTS or third generation (3G) and beyond Mobile Cellular Networks, the regulatory authority shall conduct an extensive study of the info-communication landscape with respect to the need for migration.

### **8.4 Internet services**

Government will promote E-mail proliferation and low cost PCs and give a boost to applications such as e-commerce, web hosting and Virtual Private Networks (VPNs) where Internet will reach every nook and corner of the country with connectivity at an affordable price. Government will also encourage Internet access points in schools, Universities and other educational Institutions, Post Offices and in Community Centres for a wider dissemination.

Government will ensure that the following measures are implemented:-

- Permitting Internet Service Providers ( ISPs ) to set up their own international gateway subject to specific licence conditions
- Issuing licences to ISP with a nominal licence fee
- Permitting, to the extent possible, ISP to set up a national Internet exchange point
- Reduction of access charge for Internet dial-up customers
- Creation of adequate bandwidth for Internet access
- Introduction of flat rate tariff for Internet dial-up customers.

### **8.5 Wireless fixed services**

Government will support measures for the continued expansion of the wireless technologies and will encourage operators/service providers to utilise wireless local loop (WLL) and spread spectrum techniques to offer voice, non-voice and data services.

## **8.6 International services**

Government shall encourage entry of eligible operators in the International Long Distance (ILD) sector so that international rates can be made affordable at more competitive prices.

## **8.7 Multimedia services**

The expansion of digitalisation and the rapid development of new technologies have resulted in the integration of voice, image, video and binary data. In order to achieve the benefits of full multimedia platforms and applications, Government will allow new regulatory framework to be established to address the issue of convergence of information technology, media and telecommunications without limiting the offerings provided by any player.

## **8.8 Value-added services**

Government will encourage value-added service providers in areas such as electronic data interchange, data base creation and access, business process outsourcing including call centre services, management of data networks, introduction of new paging applications such as internet messaging. Government recognizes the need to simplify the current regulatory procedure to provide a more competitive market environment and will prevent practices such as preferential access and predatory pricing.

## **8.9 Cable Services**

In view of convergence, it is highly probable that info-communications (including voice, video, data and any other appropriate services) through cable networks will emerge in a significant way in future. Government will encourage these services through cable networks, which will provide last mile linkages and switched services. This will promote rapid expansion of multimedia information and entertainment services, in particular the growth of cable television systems and other multimedia broadband networks that provide interactive services.

## **9 CONVERGENCE IN INFO-COMMUNICATIONS MARKETS**

Government is cognizant of the challenges of convergence in the field of information technology, media, telecommunications and consumer electronics. In order to achieve convergence, Government will introduce legislation for the creation of a single regulator for Info-communications.

## **10 COMPETITION POLICY & ECONOMIC REGULATION**

### **10.1 New licensing framework**

A new licensing framework has been introduced in July 2003 to provide full and open competition in the telecommunications sector. In order to encourage new entrants, the regulatory authority shall accordingly adopt simple, open, non-discriminatory and transparent evaluation criteria and procedures in granting licences. Each licensee shall be a company incorporated under the Mauritius Companies Act.

The regulatory authority will monitor the status of various market segments and issue licences to operators and service providers to ensure that an effectively competitive market is emerging. The

number of licences to be issued will depend on radio frequency availability, market and other physical considerations.

The regulatory authority shall adopt a technology-neutral approach regarding the licensing of operators and service providers to ensure that licensees continue to innovate and respond competitively to meet the needs of users.

The new licensing regime allows a licensee to undertake activities that are market specific. This creates opportunities for expansion into the industry and provides for a more effective utilization of network infrastructure.

Under the new regulations effective from July 2003, there are four categories of licensable activities :

- (i) Category A : Network Infrastructure Provider
- (ii) Category B : Networking Services Provider
- (iii) Category C : Network Application Services Provider and
- (iv) Category PVT : Private Networks

Within the first three categories listed, there are two types of authorizations as provided for:

- Class licenses granted for networks and services which do not require access to scarce resources and carry a limited number of rights or obligations; and
- Individual licenses granted for networks and services which require access to scarce resources and where strict regulatory control is required.

## **10.2 Competitive Safeguards**

The essential characteristics of abuse of dominance including a broad range of anti-competitive conduct occurs when an operator has a dominant market position in the relevant market and uses its position to engage in 'abusive' conduct which is or is likely to be harmful to competition.

The concept of abuse of dominance covers many specific types, such as

- Refusal to supply essential facilities
- Cross-subsidization
- Predatory pricing
- Tied sales or bundling
- Excessive pricing.

To properly investigate and remedy abuse of dominance complaints, the regulatory authority will issue and review code of practice for good conduct of business of operators with a view to preventing such anti-competitive practices.

### **10.3 Structural separation**

For the proper regulation of the telecommunications sector, the regulatory authority shall ascertain the financial viability and true conditions of the affairs of operators and service providers. Proper regulatory reforms will be put in place so as firstly, to guard against risks of cross-subsidization, predatory pricing, anti-competitive use of information and discriminatory practices and secondly, to create sufficient separation and minimize the potential for cross-subsidization, collusion or other anti-competitive actions between the separated companies.

### **10.4 Resolution of operator disputes**

The ICT Appeal Tribunal has been set up by Government in accordance with ICT Act 2001 and will shortly become operational. Any party that feels aggrieved by a decision of the regulatory authority shall have the right to appeal to the Tribunal.

### **10.5 Strengthening Interconnection regime**

Interconnection of telecommunications networks is considered as one of the most important factors for open network provision. Interconnection requires application of the principle of open networks- transparency, objectiveness, non-discrimination, proportionality, and priority to commercial agreements between the parties, interconnecting their networks within rules established by the regulatory authority.

Such interconnection arrangements shall be non-discriminatory between systems in terms of overall functionality, price, quality and performance of the interconnection between the systems and treatment of calls. The regulatory authority will make it a high priority to establish and administer an interconnection regime, and will promote fair and effective competition for all operators.

The measures for the provision of access and interconnection are based on maximum elimination of bureaucratic barriers and are related to application of necessary secondary normative basis and its procedures. It shall be mandatory for public operators to publish a Reference Interconnection Offer (RIO) which includes all terms and conditions (financial, administrative and technical etc) on which the public operator will enter into such agreement with other service providers. This RIO shall conform to the general guidelines set out by the regulator and would be reviewed periodically. The operators will be free to hold commercial negotiations with parties leading to the conclusion of an agreement on the basis of a RIO. In the event that no agreement can be reached, the regulatory authority will arbitrate over any disputes.

### **10.6 Access to networks & services**

The ability to access the networks and services of competing network infrastructure service providers and other service providers, particularly to originate and terminate traffic, is essential to the development of competition in telecommunications. The access regime will be revamped in order to allow any-to-any network connectivity at reasonable costs, thus enable the country to benefit from piggy-backing on the current network in place. The regulatory authority shall determine which networks and services would be considered for the purposes of the access regime, in keeping with the goals of this policy document. While commitments and restrictions in current licences will be honoured, this policy requires and proposes a rapid transition away from market entry barriers, toward a more open, liberalized environment.

## **10.7 Broadband access**

Government recognises emerging interactive broadband products as being a key component of telecommunications business in the promotion of a wide range of high speed and broadband access options. The regulator will tailor proper regulatory framework to facilitate the establishment of alternative infrastructure in the access network.

## **10.8 Unbundling of Network elements**

Generically, “unbundling” refers to the provision of components on a stand-alone basis so that interconnection carriers can obtain access to single unbundled components as part as an interconnection package. This obligation can apply to any network components including international connectivity by any means. The local loop, on the other hand, can be defined as the transmission path linking the customer’s site to the local telephone exchange. It generally consists of a pair of copper wires. A generic definition of unbundled local loop is the process in which incumbent carriers lease, wholly or in part, the local segment of their telecommunications network to competitors.

The regulatory authority shall determine which portion of an operator’s network would be considered for the purpose of unbundling in keeping with the goals of this policy document to the extent this is technically and economically feasible. Thereafter, the regulatory authority shall establish appropriate regulations for the deployment of proper schemes and models to ensure that these markets are effectively and rapidly opened to new entrants.

## **10.9 Last mile access**

The last mile or drop section defines accessibility to network services within a telecommunication network with several services. With emerging technologies being made available at affordable costs, Government will promote alternative last mile access through Digital Subscriber Line (xDSL), wireless access systems, cable modems, fibre- to- the- home and fibre- to- the- office network technologies and any other appropriate technologies.

# **11. TECHNICAL REGULATION**

## **11.1 Radio spectrum management**

The Radio Spectrum Management committee will continue to advise and assist the regulatory authority to ensure that radio spectrum is used efficiently and where licensing arrangements are flexible and are responsive to the changing needs of the users. The National Radio Spectrum Allocation Plan, which is already established by the regulatory authority, will be amended from time to time, as required to cope with state-of-the-art technologies of radio regulations made under the International Telecommunications Union (ITU). Such a plan will be rendered public. Government recognizes the importance of radio spectrum monitoring and will honour its commitments to conform to the regulatory principles of the ITU Convention by ensuring the establishment of a Radio Spectrum Monitoring Station by the regulator.

## **11.2 Telecommunications numbering management**

Advanced telecommunications services cannot be developed and delivered without a suitable numbering scheme that provides an adequate supply of numbers for new services and service providers.

The regulatory authority shall introduce a new eight-digit national numbering scheme where numbers are categorized in various services according to the first digit. The regulatory authority will further promote the introduction of number portability, to the extent this is technically and economically feasible. Furthermore, the regulatory authority shall plan the convergence of voice and data services by developing universal interoperable schemes for naming and addressing.

## **11.3 Internet domain names and IP addresses**

With the growth of commercial use of the Internet, there is an inherent value attached to domain names and some disputes may arise where 'cyber squatters' register well-known names and then try to exact high prices for selling them to the rightful owner. Internationally it is recognized that there is a need to integrate the national trademark registration with domain name registration to provide complete protection for consumer and intellectual property owners. In close coordination with country code top-level domain names management sphere, the regulatory authority shall contribute to making available to the public the information and mechanism of administration and management of domain names.

In view of the above, a smooth transition process will be planned to transfer the responsibilities to the regulator so that administration of this resource is carried out in a non-discriminatory and transparent manner. In administering this resource, the ICT Act 2001 assigns responsibility for its domain name administration to the Internet Management Committee within the regulatory authority.

## **11.4 Type approvals**

The regulatory authority is empowered through the ICT Act 2001 to specify technical standards relating to items of customer premises equipment and devices. The aim is to protect personal health and safety, facilitate access to emergency services, protect the integrity of public networks, enable interoperability of voice telephony services, and contain interference to and from a range of radio communications and non-radio communications devices.

Pursuant to fulfilling this legislative responsibility, the regulatory authority will introduce a broad standards framework. This framework will encompass regulatory arrangements to simplify the type approval procedure.

## **11.5 Co-location and sharing of facilities**

In the process of liberalization and entry of new players on the market, co-location will be encouraged. The operators and service providers will be required to comply with sharing of facilities such as telephone posts, access roads, underground ducts, international cable landing station, towers, radio base stations, mobile cellular switching centres etc., subject to the technical and economical expedience of co-location. Such a measure will go towards promoting fair competition, cut down costs, health and safety of people and protect the environment.

All facility users must co-ordinate and co-operate with the Network Infrastructure Provider (legal owner) in such manner and on such terms and conditions as stipulated in the RIO. The legal owner of the facility will be responsible for maintenance and security of the installations, access roads, equipment and accessories. The related costs for sharing of such facilities will be allocated equitably among all operators.

The terms of facility sharing will be determined through inter-operator commercial and technical negotiations, subject to review of the regulator and intervention when disputes arise. The regulatory authority will exercise its functions to ensure smooth sharing of installation, plant or system in a timely manner.

#### **11.6 Telecommunications directory database**

Government shall encourage operators and service providers to produce their own telephone directories for the convenience of customers. The public fixed and public mobile telecommunications operators will be required to contribute to the maintenance of a universal directory database to be managed by the regulatory authority. The universal directory database shall be operated on a shared, non-discriminatory basis and data will be available to all telecommunications operators and customers on terms and conditions to be determined by the regulator in accordance with governing provisions of the law.

#### **11.7 Space segments**

The regulatory authority is responsible for granting authorization to any space segment with regional and global satellite operators, and shall make it transparent and non-discriminatory for all licensed operators. However, any licensee will have to comply with the relevant rules, regulations and procedures imposed by the satellite operator for station access, booking and fees.

#### **11.8 Internet Protocol (IP) telephony**

Government considers that Internet Protocol (IP) telephony is an emerging technology which has the potential for development of new services and applications for future convergence. IP telephony can be subdivided into two major subsets, VoIP (Voice over IP) and Internet telephony. The difference lies in the nature of the underlying IP network. VoIP utilises managed, private IP-based networks, while Internet telephony primarily uses the public Internet.

In case of IP telephony, there is wider potential of IP-based networks to carry data, text and video traffic along with voice. Worldwide there is a tendency for future mobile networks and fixed networks to grow utilizing IP technology. Moreover, the technological convergence has proved that all forms of communications will eventually merge onto one platform. It is the policy of the Government to encourage the use of IP telephony (both the VoIP and Internet telephony) for voice, subject to, if any, international agreements and procedures defined by international organizations such as the International Telecommunication Union (ITU).

#### **11.9 Technical standards**

With regard to technical standards, the implementation of international standards or recommendations such as adopted by the ITU is encouraged.

## **12. CONSUMER PROTECTION**

### **12.1 Quality of service**

The regulatory authority has a primary role to measure the minimum performance levels by setting quality of service standards for a range of services such as time taken for new services, fault repair, and keeping customer appointments and such other indicators to monitor service quality. The regulatory authority would make public such findings. This ensures that customers will enjoy competitively-priced services without compromising quality of service. The operators and service providers are obligated to furnish periodic reports of their service quality to the regulatory authority. In addition, surveys will be conducted by the regulator to monitor customer satisfaction and to get feed back from customers on how improvement could be made. Information generated by such surveys will enable the regulator to follow up matters with the operators and service providers and to correct the areas of weakness. The findings will then be used to upgrade the average set standards maintained by the regulatory authority, ensuring a gradually higher level of service quality to the customers. If the minimum performance levels are not met, the regulator shall exercise powers to impose sanctions for violation of compliance by operators and service providers including monetary penalties.

In addition, operators and service providers will be required to enter into service level agreements with their customers to implement a new innovative way to provide service guarantees and quality of service.

### **12.2 Resolution of consumer disputes**

The regulatory authority is mandated to investigate consumers' complaints against service providers/operators for violation of terms of service, disputed bills, maintenance and repairs. The regulator shall establish formal complaint review procedures, and shall require all licensed operators and service providers to establish their own procedures to respond to consumer complaints.

### **12.3 Rate Regulation, charges & tariffs**

The regulatory authority shall determine tariffs for services provided by operators and service providers on the basis of the charges filed by them as market forces are still ineffective in providing reasonable prices to consumers. The current practice adopted by the regulator in its tariff regulation process is to establish cost-based prices for all regulated services. Where current tariffs are significantly out of balance with respect to costs, the regulatory authority shall continue the process of rebalancing through a phased approach so as to establish ultimately a Long Run Incremental Cost (LRIC) model.

However, under a fully competitive environment, market forces are more effective than regulation in providing consumers with a wide choice of services at reasonable prices. Hence, Government recognizes the vital role of protecting consumers by promoting the competitiveness of business in Mauritius and proper legislative authorization will be made for price regulation only on dominant operators that have the potential of Significant Market Power (SMP) in a fully competitive environment. The regulatory authority shall establish from time to time clear guidelines for the determination of significant market power within each service market and market segment.

To ensure ongoing protection for consumers, it is the responsibility of the regulatory authority to review periodically and update its analysis of the balance of costs and tariffs.

## 12.4 Universal access/service policy

In this telecommunications policy, the traditional concept of universal service has been revised to place the emphasis on universal access. This involves the extension of the network and facilities to within reach of all persons in the service area. The emphasis here is not merely on access to fixed telephone service by all households, but rather on contact with the network in a meaningful way – being able to use the public access services (voice/fax services, the internet, electronic mail, text message services) whether it is located within a household or not. Access to these services must take account of different needs among the user population, including all citizens, regardless of gender, ethnicity, socio-economic level or geographic location, in national universal access/service objectives.

The main elements of universal access include:

- Expand and maintain the availability of affordable telecommunications and ICT services to the public.
- Access should be available at high transmission speeds, utilising state-of-the-art technologies.
- Educating the local people on the benefits of ICTs
- Access to operator assistance and directory information
- Access to the emergency services free; e.g. Fire brigade, Cyclone warnings.
- Access to network by persons with disabilities.
- Full range of public access to payphones, shop-like telecentres. Community telephone Centres, Community Internet terminals, Teleboutiques who market mobile phone service on a per-call basis.

The Universal Service Obligation (USO) is the obligation placed on operators and service providers to ensure that standard voice/fax services, payphones, Internet services, text message services, E-mail, and prescribed info-communications services are available to the whole population in Mauritius at affordable and reasonable prices. The regulatory authority will be responsible for prescribing and developing specific indicators of info-communications access that reasonably meet the social, industrial and commercial needs of Mauritius. The appropriate targets will be identified by the regulatory authority to ensure that universal service/access is offered within a reasonable time frame and shall evaluate the progress periodically.

The universal service funds can be viewed as an option that compliments regulatory reform and developed as a mechanism within a broader market-oriented approach to achieving universal access. The resources for meeting the USO would be raised through a Universal Service Fund (USF) which would be a percentage of revenue earned by all operators under various licences. Such annual contributions to the USF will be paid by all operators in addition to the license fees payable.

The USF will be established and administered by the regulatory authority. .

The regulatory authority shall take steps to determine:

- The scope of the universal access/ service
- The formula for calculating the Net universal service cost
- The methodology for establishing the USF contribution, and
- The methodology for allocating the USF

The implementation of USO for providing more and better services to the public would be undertaken by all facility-based carriers who will be reimbursed from the USF. Other service-based carriers will also be encouraged to participate in USO provision subject to technical feasibility and they will also benefit from reimbursement from the USF.

In the implementation of USF, the regulatory authority will establish a USF advisory group which will represent public operators, industry representatives, consumer associations and government officials to advise on the most efficient and effective utilization and operation of the USF. This advisory group shall also be responsible to explore the possibility of utilizing these funds for other ICT based public service projects in fields such as education, health and social welfare.

### **12.5 Consumer safeguards and information**

Consumers are faced with many new telecommunication products and services with a wide variety of packages and prices. In such a situation, they need information to make decisions so that they can have access to growing variety of services at reduced prices, and obtain better quality of services. There are also other issues such as billing, complaint handling, calling number display, protection of personal information and consumer information on tariff. Government recognizes that consumers are regulator's primary client, and the importance of obtaining consumer views is a top priority. The regulatory authority will be responsible to arrange for public education and awareness programs on key issues affecting consumers.

Information on telecommunication issues such as regular bulletins and publications produced by the regulatory authority will be distributed to target audiences. The regulatory authority will continue to maintain a comprehensive website of information, including all its media releases. This approach of ventilating the actions/decisions of the regulator and explaining key issues will place the consumer at the centre of the regulatory process.

## **13 OTHER ISSUES**

### **13.1 International and regional cooperation**

The rapidly changing nature of info-communications and rapid growth of the industry worldwide has led to increasing sensitivity being attached to international and regional relations. Government, through the Ministry responsible for ICT sector and the regulatory authority shall fully participate in international and regional fora in matters related to Information and Communications Technologies with a view to promoting international and regional cooperation in such fields. When participating in such fora, Government shall ensure that all stakeholders including the private sector are consulted as appropriate.

### **13.2 Multilateral trade negotiations**

Government is fully committed to promoting global trade in services particularly telecommunications services in line with its obligations towards the World Trade Organisation (WTO). Government will pursue the liberalization of the info-communications sector to strengthen the potential of the local operators and service providers to export their products and services and foreign companies to participate to the greatest extent possible in the development of the telecommunications sector. In order to further attract international expertise and resources, Government will participate in the trade process of multilateral fora that are leading efforts at reform, for example the GATS negotiations on telecommunications in the Doha round.

### **13.3 Communications support for emergency management**

Government recognizes the importance of public protection and disaster relief communications and will honour its commitments to conform to the Tampere Convention (ICET-1998) by ensuring disaster preparedness and response.

In this context, Government shall ensure that regulatory barriers and other restrictions on the provision of telecommunications resources which are required for disaster mitigation and relief operations are minimised or removed.

The regulatory authority shall be mandated in disaster communications to promote the adoption of measures that would ensure safety and security of life through uninterrupted telecommunication services.

The operators and service providers shall participate in the establishment of a national disaster and emergency communications system that will support the work of Emergency Service Organizations (ESOs). The regulatory authority shall facilitate the planning and implementation of this system, in coordination with both public fixed and public mobile operators, as well as radio amateur, and national emergency and security agencies.

### **13.4 Research and development**

Government will encourage those involved in the telecommunications sector to carry out Research and Development (R & D) to support local industrial growth and to speed up transfer of technology.

In this context, the requirements to carry out research and development will be part of the conditions under which licences will be issued. These conditions shall be encouraged to allocate a certain percentage of their annual expenditure for R & D activities and to provide incentives to their employees for promoting such activities.

## **14 CONCLUSION**

This National Telecommunications Policy (NTP-2004) is a summary statement of the philosophy, objectives, targets, strategies and the methodology to ensure equitable and judicious execution of the business of telecommunications in the country. However, Government may from time to time make changes, modifications, additions to this policy and may review and update it at certain intervals to meet the changing needs of the sector. The general guidelines embodied in this policy document emphasize faster development of the telecommunications sector coupled with rapid technological changes. It further highlights the need to optimize quality of service through competition in line with the national development, thereby fulfilling the vision and aspiration to take Mauritius to a position of honour in the comity of nations in the 21<sup>st</sup> century.

## Table of Glossary, Acronyms and Abbreviations

<b>Accounting rate</b>	Agreed accounting rate to forward calls between telecommunications Administrations/operators.
<b>ADSL</b>	- Asymmetric Digital Subscriber Line. A high speed transmission technology.
<b>Broadband</b>	- Broadband services are those which are delivered over bandwidth that is more than 384 Kbps.
<b>Cable TV</b>	- Cable Television.
<b>DNS</b>	- Domain Name System.
<b>Dominant</b>	- The regulatory authority shall establish from time to time clear guide lines for the determination of dominance and significant market power within each service market and market segment
<b>ENUM</b>	- Acronym of the protocol integrating the International numbering system under recommendation E.164 of ITU-T with a recommendation of DNS.
<b>Flat Rate</b>	- A monthly or yearly usage fee instead of charging on a per minute basis.
<b>GSM</b>	- Global System for Mobile Communication.
<b>GMPCS</b>	- Global Mobile Personal Communication by Satellite.
<b>ICT</b>	- Information and Communication Technologies.
<b>ICTA</b>	- Information and Communication Technologies Authority.
<b>Incumbent</b>	- Mauritius Telecom.
<b>ISP</b>	- Internet Service Provider.
<b>IP</b>	- Internet Protocol.
<b>IT</b>	- Information Technology.
<b>ITU</b>	- International Telecommunication Union.
<b>LAN</b>	- Local Area Network – computer network.
<b>LRIC</b>	- Long Run Incremental Cost.
<b>MITT</b>	- Ministry of Information Technology and Telecommunication.
<b>Mbps</b>	- Megabits per second.
<b>PSTN</b>	- Public Switched Telephone Network refers to local and International telephonic system.
<b>R &amp; D</b>	- Research and Development.
<b>RIO</b>	- Reference Interconnection Offer.
<b>Scarce national resources</b>	- Finite resources required in the operation of a telecommunications service such as radio spectrum, telecommunications numbers, telecommunications infrastructure and public rights of way
<b>SMP</b>	- Significant Market Power.
<b>Tariff</b>	- Telecommunication charges.
<b>VoIP</b>	- Voice over Internet Protocol.
<b>UMTS</b>	- Universal Mobile Telecommunication System.
<b>US</b>	- Universal Service.
<b>USF</b>	- Universal Service Fund.
<b>USO</b>	- Universal Service Obligation.
<b>VPN</b>	- Virtual Private Network
<b>WAN</b>	- Wide Area Network – computer network decimal for large geographical area.
<b>WLL</b>	- Wireless Local Loop.
<b>WTO</b>	- World Trade Organisation.
<b>xDSL</b>	- A generic term used for Digital Subscriber Line Equipment and Services, including ADSL.

