GOVERNMENT OF JAMAICA

Information and Communications Technology (ICT) Policy

Prepared by

Information and Telecommunications Department

Office of the Prime Minister

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EXECUTIVE SUMMARY

The Information and Communications Technology (ICT) Policy has been formulated through horizontal and vertical consultation; the analysis of primary and secondary data and resolution of core issues. The Policy rests in the main on the following principles that:- ICT is a developmental tool that should be widely accessible and utilized by the general population; there will be a neutral approach in technology selection and regulation and competition as well as innovation will be promoted for the benefit of consumers, producers and service providers. In providing a comprehensive framework for the ICT Sector, the Government of Jamaica (GOJ) aims to facilitate investment, strengthen all productive sectors and create a knowledge-based society.

In furtherance of the above, considerable treatment is given to the creation of a converged regulatory structure for the ICT sector, owing to the shortcomings of a variegated approach and the concentrated focus required to provide flexible, responsive and specialist regulation to meet the demands of the fast growing ICT Sector. A phased approach is therefore being taken to establish a Converged Regulator to ensure seamless implementation. Notably, the Policy also provides for the separation of content regulation given the range of technical content issues in the digital age and the challenges being encountered at this stage of Jamaica's socio-cultural development. This notwithstanding, the work of the Content Regulator will complement that of the ICT Regulator. Strategically, an Inter-Regulators Forum will be established and made to comprise the Content Regulator, the Competition Regulator and the ICT Regulator, as also a framework to facilitate the sharing of information among them. An appropriately constituted independent ICT Appellate body will also be provided for in new ICT legislation and a National ICT Advisory body will be created.

As an administrative measure, the ICT Regulator will be required to adopt and adhere to rules and procedures which facilitate the highest standard of procedural efficiency, transparency and responsiveness to technological changes.

The need for demarcating the jurisdiction for ex-ante and ex-post regulation was also assessed with a determination made that the ICT Regulator will have jurisdiction for ex-ante matters and the Competition Regulator for ex post regulation. The continued existence of, or the degree to which both ex ante and ex post regulation are applied to the ICT Sector however, will be the subject of review, having due regard to the principle of regulatory forbearance.

Necessarily, consideration was given to the inadequacies of the current legislative framework within the context of convergence and a decision taken to harmonize all existing laws relevant to ICT providing the necessary tools for effective regulation. Features of new legislation contemplated will include periodic review of the legal framework. As part of the legislative review it was also considered that the deployment of ICT networks capable of delivering a range of services raises critical issues relative to quality of service and protection of personal information. In this context, legislative provision is also to be made for (inter alia) minimum quality of service standards; the publishing of industry performance reports; the intervention of the ICT Regulator and

redress for the customer, where carriers and service providers are not sufficiently responsive to customer complaints. It is also envisaged that to prevent unauthorized access to customer's personal information (with exceptions made for matters of national security and defence) a legal requirement is to be imposed in companion legislation on custodians of web-based databases to maintain system integrity through physical and logical security on the technology deployed; sanctions for invasion of privacy, unauthorized access and use of customer information and establish protocols to treat with requests for access to personal information.

In turning attention to resource management of national (ICT) assets, policy focus was given to matters relative to the efficient, flexible and equitable use of the Radio Frequency Spectrum and Number Administration taking into account international best practices, protocols and standards.

Additionally, the critical issue of the extant digital divide was examined and it was seen that the current definition of universal service should be expanded beyond physical access to networks, to encompass enabling elements such as information literacy and financing to enable Jamaicans to create and use content and applications. The Government will address these matters through Universal Service strategies relative to availability, accessibility and affordability. The GOJ will also make Universal Service interventions (on the basis of economic and technical feasibility among other principles) where the market has not supplied solutions for access, availability and affordability. It is also considered important to establish an appropriate mechanism for expanding and securing the continuity of the funds for universal service. The Government also commits to advancing its e-Government agenda to enhance delivery of public services through model use of ICTs to include integration of its services. The expected outcome is greater public engagement in national decision making, reduced bureaucracy, improved transparency and accountability in government, increased social inclusion and the creation of a knowledge based society.

The Policy also provides for the enhancement of ICT infrastructure to include high capacity networks noting that access to same would stimulate and facilitate entrepreneurship and improve the provision of public and private e-services, as well as allow for interconnection to international networks. Attention was also given to developing physical infrastructure to facilitate the establishment of ICT related businesses such as business process outsourcing, software development and hardware manufacturing and repair.

In recognition that innovations in ICT solutions will continue to develop at a rapid pace and that an environment which promotes technology neutrality will ultimately redound to the benefit of the sector and the consumer, the Policy makes provision for the fostering of a regulatory framework in which services can be offered utilizing a range of technologies. Innovation and research will be a focus as a means of increasing Jamaica's competitiveness. The establishment of Centres of Excellence and encouraging the development of knowledge networks are seen as essential both locally and regionally. Funding ICT research and innovation and the deployment of local ICT innovations are also areas on which the Government plans to focus its attention.

The Government will also develop appropriate strategies and standards with respect to the disposal of ICT waste and type testing and/or verification of manufacturer standards of ICT equipment to be widely deployed. Recycling of equipment will be encouraged as well as the establishment of businesses to repair/rehabilitate/upgrade ICT equipment. Keen attention will also be paid to the levels of emission from ICT equipment to avoid possible harm to consumers.

This Policy, supported by the contemplated new legislative framework, is considered the catalyst necessary to successfully advance Jamaica's vision of regional leadership in ICTs.

INTRODUCTION

Advancements in ICT have resulted in new methods of transmitting voice, data and video. Traditionally, there were separate types of networks used for the provision of these services; specifically telephone (fixed and mobile), radio and cable television networks. Technological Conversion has transformed these traditional networks however into advanced Internet Protocol (IP) based networks capable of providing a full range of products and services that are accessible via a wide range of devices from any location.

These innovative ICT products and services are creating both opportunities and threats for established players; new entrants in the telecommunications and related industries; public and private institutions that rely on telecommunications and Jamaican consumers and citizens. These developments are challenging the relevance of some aspects of the current legal and regulatory framework and need to be addressed to improve the international competitiveness of the Jamaican economy.

In early 2001, the Jamaica Telecommunications Advisory Council (JTAC) conducted a study on Telecommunications Reform which was completed in 2002 yielding a report which made several recommendations for the reform of the sector. Two other studies were conducted by the GOJ in 2004 and 2006. The 2004 study, which was conducted by Dr. Peter Stern, reviewed the legal, institutional and regulatory framework of the sector. The Nordicity Group Limited study of 2006, analyzed the options for the Single Regulator for Telecommunications in Jamaica. The Cabinet Office also commissioned a Regulatory Impact Assessment Study that included telecommunications and was completed in 2006.

The reports all referenced for consideration, a converged regulatory framework for telecommunications and also a new Telecommunications Act. A number of related issues were also raised, including:

(i) the convergence of telecommunications services on diverse media;

(ii) new technologies and the resulting competition issues arising out of the liberalized market;

(iii) management and potential governance of content;

(iv) the existence of multiple regulatory agencies as a constraint to cost-effective and efficient regulation of the sector; and;

(v) the need to review the role of JTAC.

This Policy approaches the mentioned issues holistically, accommodates technological advancements and establishes a framework for ICTs to enable economic and social

development. It is envisioned that this Policy is to be complemented by, inter alia, an Electronic Media and Content Policy and a Spectrum Policy.

SITUATIONAL ANALYSIS

A contextual overview of ICT developments in the country is provided herein, with analysis which seeks to examine the nature of current market conditions whilst identifying:

- areas of policy successes
- areas for policy review and legislative strengthening
- areas in which GOJ policy is currently silent.

1.1 Economic Overview

Jamaica is a middle income island nation with a Gross Domestic Product (GDP) per capita of approximately: - $378,918 *(2008 Statistical Institute of Jamaica estimate)* or US$4,268 *(2008 IMF estimate)*. Projections based on the 2001 census indicate that Jamaica's population is approximately 2.6 million and is growing at approximately 1% per annum. Major trading partners include the United States of America, Canada, the European Union, Trinidad and Tobago and other Member States of Caribbean Community (CARICOM). The island is a signatory to many international Agreements including; the Agreements establishing the World Trading Organization (WTO) and the CARIFORUM[1]-EC Economic Partnership Agreement. Jamaica is also a member of the International Telecommunications Union (ITU), Universal Postal Union (UPU), Caribbean Postal Union (CPU), Commonwealth Telecommunications Organisation (CTO), Caribbean Telecommunications Union (CTU), Inter-American Telecommunication Commission (CITEL), and International Telecommunications Satellite Organization (ITSO).

Since the early 1980s, the country has sought to implement structural reform aimed at fostering private sector activity and increasing the role of market forces in resource allocation. These initiatives have invariably included programmes targeting privatization, economic liberalization and the removal of restrictions on investment and capital flows. Notably, as part of the thrust towards greater private sector participation in the economy, in 1990, the Government sold its controlling interest in the island's sole telecommunications company, Telecommunications of Jamaica Limited (TOJ) to Cable & Wireless PLC.

The liberalization of the telecommunications industry began in 1999 with the signing of a Heads of Agreement with Cable & Wireless and the GOJ and the subsequent promulgation of the Telecommunications Act (the Act) in 2000. The Act provided a legislative framework which enabled, *inter alia*, the introduction of competition in the provision of voice and data services.

[1] CARIFORUM countries include all CARICOM member states and the Dominican Republic.

In an effort to boost economic performance, the GOJ has actively sought to implement policies and initiatives aimed at driving investments toward key economic sectors. The overall strategic goal is to modernize, expand and enhance the global competitiveness of the investment recipient sectors. Data provided by the 2008 World Investment Report illustrates the success of this programme. For the period 1990-2000 Foreign Direct Investment (FDI) flows to Jamaica averaged US$246 million. However, since 2001 average FDI flows have been significantly higher with the highest amount of US$882 million being recorded in 2006 before falling to US$779 million in 2007. The average annual rate of growth of FDI flows over the period 1990-2007 is approximately 44%. Further, FDI contribution to Gross Fixed Capital Formation (GCF) has averaged 22.05% while the average for Latin America and the Caribbean is 15.5%. Whilst the data does not discretely account for investments in ICT infrastructure such as computers, data storage equipment and software applications, data from the Planning Institute of Jamaica (PIOJ) indicates that the country spends approximately US$80.9 million per annum or 12% of total FDI flows on ICT related infrastructure. These projects include telecommunication network infrastructure build out, statistical instruments for mining and petro-chemical/geological investigations as well as purchases of computers, data storage and network equipment.

Since the introduction of regulatory architecture for the Subscriber Television (STV) market in 1998 and the liberalization of the telecommunications industry in 2000, the ICT sector has become a major contributor to government revenue. The total fees collected for Spectrum Licences by the GOJ from 2000 to March 2009 was J$5.15 billion. Further, funds under management at the Universal Access Fund Company Limited (UAFCL) are approximately J$6 billion (these represent total receipts from the Universal Service Levy on international calls terminating in Jamaica. The levy is US$0.02c per minute terminating on mobile networks and US$0.03 per minute terminating on fixed networks). Additionally, the sale of the first island-wide wired STV license netted the Broadcasting Commission J$32 million. The Government has projected that General Consumption Tax (GCT) returns from the levy on the telephone and communications sector netted approximately $4.8 billion in FY 2007 and $6.4 billion in FY 2008 (applicable GCT rate for the sector is 25%). Notably, all of the agencies currently mandated to regulate the ICT industry are self-financing and do not receive subvention support from the Consolidated Fund.

The GOJ's Medium Term Macroeconomic Framework targets economic growth of 0.5% in FY2010 and 2% in FY2011; as well as a reduction in the Debt to GDP ratio to 120% from 140%. As part of the programme to achieve these targets the Government has embarked on a comprehensive public sector modernization programme. Additionally, it has been noted that a key component of the drive toward the deepening of economic growth is to increase exports through a combination of productivity and broadening of the export base. Within this context, it has been recognized that increased use and deployment of ICTs within the public sector is a necessary component of the modernization and cost reduction process. Further, 2009 Jamaica Promotions Agency (JAMPRO) market research studies indicate that Jamaica has exploitable comparative advantages in the Business and Knowledge Process Outsourcing industries.

Consequently, it is expected that investments by both public and private sector in ICT will remain stable over the medium term.

Sector Analysis

Telecommunications

The availability of reliable telecommunications services forms the backbone of ICT development. Currently the island has a total teledensity rate in excess of 100%, indicating near universal access to voice telephony. This is largely a result of the liberalization of the telecommunications market in 2000, and the resultant competition for market share amongst mobile service providers.

Emerging technologies which are facilitating convergence have shown the capacity to revolutionize the Plain Old Telephone Service (POTS) business model. It is also expected that infrastructural developments in both landline and mobile services will cause a deepening of internet penetration levels, and the development of applications that will modernize local business processes whilst providing support to the development of knowledge based exports. Table I below shows the different classes of licenses issued by the Office of Utilities Regulation (OUR) since the liberalization of the telecommunications industry.

Table I: TELECOMMUNICATIONS LICENCES (10 Year Period 2000-2009)

Licenses	00	01	02	03	04	05	06	07	08	09		Total Issued
										Renewal	New	
ISP		45	12	3	14	2	4	9	2	1	2	94
ISP (STVO)		7										7
IVSP		31	10	6	5	1			3			56
DC		11	8	8	7	2	3	2	1			42
DVSP		17	8	13	6	2	2	5	1		1	54
DSP		22	2	5	1	2	1	2	2			37
FTZC	1	6	2	1								10
FTZSP	1	6	1									8
IC				48	20	5	3	3	1		3	83
INTL.SP				41	21	7	3	4	2		1	78
Total Issued	2	145	43	125	74	21	16	25	12	1	7	471

Source: Information and Telecommunications Department

Key

DC	= Domestic Carrier
DSP	= Data Service Provider
DVSP	= Domestic Voice Service Provider
FTZC	= Free Trade Zone Carrier
FTZSP	= Free Trade Zone Service Provider
IC	= International Carrier
ISP	= Internet Service Provider
ISP STVO	= Internet Service Provider - Cable Operators
INTL.SP	= International Service Provider
IVSP	= International Voice Service Provider

Currently there are three providers in the mobile market, namely Digicel, Cable & Wireless Jamaica Ltd (trading as LIME), and Oceanic Digital (trading as Claro). OUR data as at the end of the second quarter of financial year 2009 indicates that the total subscriber base of the mobile telecommunications sector is 2,820,442 of which 2,734,418 represents pre-paid customers, with the remainder comprising post-paid subscribers. Given the high percentage of mobile cellular subscribers within the general population, indications are that the market has plateaued and that future inter-firm competition will be based on the provision of cutting edge services and the development of attractive pricing regimes.

Having regard to the foregoing developments, the regulatory impetus has shifted from liberalization and the expansion of voice connectivity to ensuring effective competition as well as expanding broadband connectivity. In particular there is a need to revise the existing competition rules with a view to ensuring adequate and timely enforcement mechanisms and ultimately, strengthening the regulatory framework.

Notwithstanding the growth in the mobile cellular market locally, there has been a corresponding decline of approximately 8% per annum in fixed lines over the period 2003 - 2008. This is indicative of a trend towards technology migration as persons choose mobile cellular service in preference to a fixed line solution. This situation is consonant with what obtains within the Caribbean region as Table II below demonstrates. NB. Barbados, Guyana and the Dominican Republic are the only countries captured which have shown growth in fixed telephone lines. Additionally, the global picture shows growth in fixed lines of only 1.2% compared with 23.3% for mobile subscriptions. The decline in Jamaica is however faster than the rate of contraction amongst the CARIFORUM trading partners and Mauritius (the international country

used in the table for purposes of comparison). With the exclusion of Haiti from the tabulation, the average rate of contraction of fixed line users is in the region of 4%, which is approximately 50% below Jamaica's rate.

Table II: Key Demographic, Economic, Telecommunications and Internet Indicators

Country	Population (000,000)	Per Capita GDP	Fixed Teleph-one Lines per 100 inhabit.	% Change Telephone Lines per 100 inhabit. 2003-2008	Mobile cellular subscriptions per 100 inhabit.	% Change Mobile cellular subscriptions 2003-2008	Internet users per 100 inhabit. 2008	Broadband Subscribers per 100 inhabit. 2008
Bahamas	0.34	21,684	39.32	-1.1	106.04	24.0	31.54	10.08
Barbados	0.26	13,393	58.78	2.0	159.09	23.7	73.67	21.77
Belize	0.30	4,336	10.35	-3.4	53.23	21.5	11.31	2.56
Dominican Republic	9.95	4,179	9.90	0.2	72.45	28.1	21.58	2.27
Guyana	0.76	1,407	16.37	6.2	36.84	42.8	26.85	0.26
Haiti	9.88	356	1.09	-6.6	32.40	58.5	10.13	-
Jamaica	2.71	4,268	11.69	-7.7	100.58	11.6	56.88	3.59
Mauritius	1.28	5,916	28.48	0.1	80.74	17.4	29.69	7.17
Suriname	0.52	4.733	15.82	-0.7	80.76	19.8	9.71	0.53
Trinidad & Tobago	1.33	16,269	23.02	-1.1	112.87	34.9	17.02	2.67
World	6,772.51	8,257	18.88	1.2	59.62	23.3	23.77	6.09

Source: International Telecommunications Union

Despite the decline in fixed line subscriptions, indications from the OUR, are that the stock of numbers for assignment amongst all operators is fast depleting. The OUR data indicates that of the 8 million telephone numbers allotted to Jamaica under area code 876, approximately 6.4 million are currently assigned to operators. Consequently, there are only 1.6 million numbers that remain unassigned. Continued efficient regulatory management of this scarce national resource is therefore paramount.

Electronic Media

Throughout its history, the (Electronic) Media in Jamaica has proven to be a corner stone of the vibrancy of the island's culture and democratic expression. Notably, the electronic media is a key portal through which Jamaican culture is delivered to local and

international audiences and plays the role of a senior partner in the evolution of national social norms and mores.

Like its global counterparts however, the traditional business model of local media firms has had to undergo review owing to; the emergence of New Media and technological convergence. This revolution in media is primarily driven by the use of ICT to broadcast content digitally over diverse platforms, thus allowing entities to operate in a borderless world. Further, the convergence of technology now allows traditional STV companies to diversify income streams and become both suppliers of high speed internet services and voice telephony. It is highlighted that post telecoms-market liberalization, there are no longer policy barriers to entry into the electronic media market or the telecommunications market.

Broadcasting Commission (BC) data as at January 2010, indicates that the electronic media landscape includes: 25 Broadcasting licensees (of which 22 are radio stations and the remaining 3 represent free-to-air television stations), and 40 (Wired) STV Operators. Additional broadcast licences have been granted but at January 2010 those services were not yet operational. In addition to wired STV licences there is also provision for wireless STV services to be deployed over the Ultra High Frequency (UHF) band of the spectrum. Notably, in December 2010, a wireless STV licence was also issued to Digital Media and Entertainment Limited, which is a subsidiary of LIME. The entity now offers Mobile TV services utilizing the LIME cellular network. There are also several privately operated cable channels which will be brought into the regulatory framework in 2011 consequent on an amendment to the Broadcasting and Radio Re-diffusion Act which has created a new category of licences for Independent Programme Providers (IPPs).

With the growth in radio broadcasting a challenge has arisen regarding the availability of spectrum for island-wide Frequency Modulation (FM) broadcasting. It is recognized, however, that this issue may be overcome through the emergence of digital broadcasting. This subject will form a critical component of the wider Electronic Media and Information policy being developed.

Prior to 2007, the STV sector was dominated by small regional based firms. However, with the award of an island-wide STV licence (wired) to Columbus Communications Jamaica Limited (FLOW), some consolidation has occurred in the sector. This has been primarily driven by FLOW's acquisition of some small operators. Owing to the acquisition of players within the market, and FLOW's business model of offering triple play services (voice, video, data), competition has decreased. This is, however, indicative of an evolving market which now favours larger players that can exploit economies of scale and are able to deploy a wider range of services to consumers.

In 2007, the regulatory framework governing the pricing of STV licences was modified to introduce economic valuation of licences. The amendment introduces a formula which takes account of:

- The topography of the zone being applied for, that is, whether it is easy, difficult or moderate for the roll out of services,

- The economic make up of the zone, that is, whether the zone is characterized by upper middle income, middle income, lower middle income or poor households,

- The degree of market competition present in the zone

With the projected increase in investment in the ICT sector; the deepening of technological convergence and government's commitment to digital switchover in the medium to long term, the sector is positioned for further growth. The developments that have occurred in the deployment of infrastructure and technology make it imperative for new regulatory arrangements to deal with content across all platforms.

Universal Service

As at June 2009, the mobile penetration rate was approximately 104.66%; where as that for fixed line was approximately 11.53%. In spite of the high population access to telephony, internet penetration remains low at 4%. In 2009, broadband internet penetration is slowly growing from 3.46% in 2007 to 3.88 % in 2009, reportedly.

Currently, most internet subscribers receive service through fixed-line networks. However, this is changing due to the deployment of Broadband Wireless Access (BWA) technologies; for example, 3G and WiMax. New BWA technologies are expanding consumer services and choice. These technologies are easier to deploy and therefore allow for comparatively affordable access to unserved and underserved areas.

There still exists a digital divide, between communities and income groups, which is being addressed through Universal Service strategies comprising the following:

Availability:	There should be ubiquitous coverage of telecommunications and internet services.
Accessibility:	The opportunity for everyone to use the services without discrimination or preferential treatment among any class of users.
Affordability:	Though rates/prices should generally reflect their economic cost, basic ICT services (as determined by Government Policy from time to time) should not be prohibitive.

The features of these elements include:

(a) Physical build-out of the network to cover unserved/underserved areas in both rural and urban areas;

(b) Ability to utilize the network (knowledge/expertise to use the network effectively);

(c) Availability of access devices;

(d) Access to the emergency services e.g. Fire Brigade, Police, Air and Sea Rescue; and

(e) Access to the network by vulnerable persons inclusive of those with disabilities.

The GOJ makes Universal Service interventions (on the basis of economic and technical feasibility among other principles) where the market has not supplied solutions for access, availability and affordability.

1.2 ICT and the Environment

The use of ICT forms a significant part of modern business processes and is an integral part of daily life. As a consequence, both its use and the treatment of its waste products help to determine an organization's environmental impact. In particular, it has been recognized that ICT can play a valuable role in reducing an entity's carbon footprint, an example being a reduction in business related travel through the use of videoconferencing. Conversely, ICT equipment may also expand an organization's carbon footprint owing to energy consumption requirements. Further, ICT equipment contains toxic substances such as: lead, mercury and cadmium and as such, if not disposed of using specialized techniques, can be hazardous to human health and pose a threat to ground water supplies.

"In a 2005 study published by the Economist, the E-waste stream was noted as the fastest growing municipal waste stream (globally), accounting for 8 percent of municipal waste in the European Union. In the United States, it is estimated that approximately 14-20 million personal computers become obsolete every year"[2]. Statistics are not available for Jamaica; however the Government has recognized the need for a coherent policy aimed at:

- Reducing ICT energy use and emissions;
- Reducing and managing ICT waste;
- Embracing flexible and mobile working environments to cut transport requirements;
- Using technology systems including computer software and hardware to reduce other emissions and waste.

Jamaica has acceded to the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal which "represents the only global framework on the control and management of hazardous and other forms of waste. The overarching goal of the Convention is to protect human health and the environment against the adverse effects, which can result from the generation, transboundary movement and management of hazardous wastes and other wastes. A central policy instrument of the Basel Convention is that of "Environmentally Sound Management

[2] Dr. Katharina Kummer Peiry, Executive Secretary- Secretariat of the Basel Convention/UNEP

(ESM)", aimed at protecting human health and the environment by minimizing hazardous waste production wherever possible. This concept represents a cradle-to-grave approach, which involves strict controls from the generation of a hazardous waste to its storage, transport, treatment, reuse, recycling, recovery and final disposal"[3].

Within the domestic context, the National Environmental and Planning Agency (NEPA) classify all waste, including hazardous waste and material. In an effort to comply with the Basel Convention the GOJ is developing a national framework for the storage and treatment of ICT and other hazardous wastes.

1.3 Existing Legal Framework

The ICT sector is governed by several pieces of legislation including the:

- Telecommunications Act (2000)
- Post Office Act (1941)
- Radio and Telegraph Control Act (1973)
- Broadcasting and Radio Re-Diffusion Act (1944)
- Electronic Transactions Act (2006)
- Fair Competition Act (1993)
- Consumer Protection Act (2005)
- Office of Utilities Regulations Act (1995)

Attention is drawn to the Telecommunications Act, which has made specific provisions for a three phase liberalization process of the telecommunications sector. The period for each phase and attendant key elements are set out below:

(i) Phase I (March 1, 2000 – August 31, 2001)

- Opened the market to wireless telecommunication.
- Opened the market for the provision of customers' own equipment.
- Allowed companies with single entity free zone status to provide their own telecommunications services.

[3] Ibid

- Opened the market to the resale of data, international voice and Internet access.

(ii) Phase II (September 1, 2001 – February 28, 2003)

- Competition in domestic facilities and services.
- Cable TV providers being allowed to become Internet service providers (ISPs).

(iii) Phase III commenced March 1, 2003

- All telecommunications facilities, including international voice and data services, were opened to competition.

At present aspects of the ICT sector are regulated by the OUR, the Spectrum Management Authority (SMA), the Consumer Affairs Commission (CAC), the BC and the Fair Trading Commission (FTC). In light of convergence and overlapping jurisdiction in the legal and regulatory framework, there are concerns about the currency, efficiency and effectiveness of regulation.

In order to effectively address current and future developments it is seen as necessary to give focus to areas such as: converging platforms and services; access and Infrastructure sharing; determination of Termination Rates (TR); the efficient management of radio frequency spectrum and other specific competition issues.

1.4 Links with other Policies and Programmes

The ICT Policy will complement the following GOJ policies, the:

- National Information and Communications Technology Strategy 2007-2012;
- National Development Plan 2030 (Vision 2030 Jamaica);
- National Energy Policy;
- National Telecommunication Numbering Plan; and
- National Solid Waste Management Policy.

Other relevant Policies being developed such as:

- Rights of Way Policy
- Disposal of ICT and Hazardous Waste

- Draft Electronic Media and Content Policy
- Spectrum Policy (to be developed)

The long-term strategic vision for the ICT sector, as elaborated in the National Development Plan 2030, is the overarching ethos under which ICT policy and plans will be developed and is built on a number of fundamental elements, including the following,:

i) An ICT sector that achieves sustained global competitiveness in industry and market segments where Jamaica has competitive advantages;

ii) An ICT sector that is driven by private sector investment within a policy and regulatory framework that fosters competition and transparency;

iii) An ICT sector that is accessible to all Jamaicans and contributes to greater ICT literacy;

iv) An ICT sector that enhances the productivity and competitiveness of Jamaica's productive sectors;

v) An ICT sector that is environmentally sustainable with minimal harmful environmental impacts;

vi) An ICT sector that supports improved governance at all levels; and

vii) An ICT sector that contributes to the science, research and innovation capabilities of the country.

POLICY FRAMEWORK

2.1 Policy Vision

A knowledge-based and educated society which is globally competitive and productive; giving rise to the strategic placement of Jamaica as the key ICT hub within the region.

2.2 Policy Mission

- To achieve greater social and economic development for the people of Jamaica, through increased application of ICT in all sectors facilitated by affordable ICT services and effective management of all national ICT assets.

- To advance Jamaica's vision of regional leadership in ICTs by enabling connectivity over multiple and diverse platforms

2.3 Policy Goals

The main policy goals are:

(i) Improved National Productivity

ICTs will be utilized to increase overall efficiency and productivity

(ii) Increased local and International Investments

The establishment of world-class high capacity ICT infrastructure and services across the island will facilitate increased investments in the country.

(iii) Support for all sectors

The Government is committed to the use of ICT as a key enabler to develop all sectors, with a. focus on the creation of a knowledge based society.

2.4 Main Principles

The ICT Policy is anchored on four fundamental principles:

(i) ICT as a developmental instrument

ICT will be utilized as a key enabler for human, social and economic development and to improve the quality of life of all Jamaicans (as Benchmarked by the Human Development Index).

(ii) Universal Service

ICT is to be widely available and utilized by the general population.

(iii) Technological Neutrality

There will be a neutral approach in technology selection and regulation.

(iv) Competition within the ICT Sector

The focus of this policy is to promote competition and innovation for the benefit of consumers, producers and service providers.

POLICY ISSUES, OBJECTIVES AND STRATEGIES

The above considerations inform the issues, objectives and strategies outlined below.

3. LEGAL, REGULATORY, INSTITUTIONAL & ADMINISTRATIVE FRAMEWORK

3.1 Policy Element – Legal Framework

a. Policy Issue

The ICT industry as a whole is undergoing a potentially disruptive phase of development due to the convergence of ICTs and the rapid diffusion of internet-related applications. The need to address convergence and other developments in the ICT industry requires an appropriate legal and regulatory framework that:

- Addresses existing fragmentation, current and future developments and the market dynamics in a liberalized and converged environment.
- Recognizes the evolving nature of telecommunications, traditional and emerging media in this digital era as well as new business opportunities and services.
- Addresses issues such as data/privacy protection and the criminal misuse of data.

The current legislative framework is inadequate and inappropriate for regulating across multiple platforms and the new issues which are emerging such as relevance and enforcement of existing sanctions for breaches or offences. In many instances, suspension of the right to provide service (disconnection) or termination of a licence is the only remedy for a breach.

b. Policy Objective

To harmonize, rationalize and strengthen the existing legislative framework, taking into account international best practices and unique national circumstances, in order to adequately address current trends and emerging technologies; promote and support competitiveness and the long term development of the ICT sector.

c. Policy Strategies

The Government shall ensure that:

(i) All existing laws relevant to ICT are harmonized and that new legislation will be promulgated to give effect to this policy.

(ii) Government shall enact ICT legislation which will provide for:

- Appropriate sanctions and penalties to address breaches.
- Periodic review of the legislative framework to address developments in the sector.
- Establishing, monitoring, enforcing and reporting on performance standards.

3.2 Policy Element – Regulatory and Institutional Framework

a. Policy Issue

There is overlapping jurisdiction in the sector which impedes its efficient regulation and increases the regulatory cost. Convergence is pointing to the need for a single point of entry into the sector to engender certainty and eliminate unnecessary delays thereby enabling a regulatory environment that facilitates investment and competition. Notwithstanding the foregoing it is recognised that content and competition issues require specialized treatment to address specific local and evolutionary challenges.

b. Policy Objective

To establish a converged ICT regulatory framework through:

- Drafting new ICT legislation and establishing cross agency protocols to minimize fragmentation and jurisdictional overlap.
- Rationalizing the various regulatory functions and re-engineering processes.
- Establishing/operationalizing a converged institutional and regulatory framework inclusive of determining the governance structure.

c. Policy Strategies

The Government shall focus on the following initiatives:

(i) Establishment of a converged standalone ICT Regulator;

(ii) Establishment of a designated Content Regulator to complement the ICT Regulator;

(iii) The establishment of an Inter-Regulators Forum between the Content Regulator, the Competition Regulator and the ICT Regulator;

(iv) Establishment of a framework to facilitate the sharing of information among regulators;

(v) The establishment of a National ICT Advisory body to provide ongoing advice to the Minister with responsibility for ICT related issues;

(vi) Encouragement of self regulation within the ICT sector;

(vii) The promulgation of new ICT legislation which will make provision for:

- An appropriately constituted independent ICT Appellate body capable of responding, in a timely manner, to the range of issues under the jurisdiction of the Regulator(s). The functions of, and funding for the appellate body will be elaborated in the legislation;

- The grounds for appeal, as well as the process and period for addressing appeal;

- The establishment of an appropriate governance structure for the ICT Regulator; and

(viii) A coherent framework to focus e-Government strategies.

3.3 Policy Element - Administrative Framework

a. Policy Issue

Currently, there is a lack of effective performance in relation to the receipt and disposal of regulatory matters. The ICT sector requires an efficient and responsive administrative framework to ensure that decisions of the ICT Regulator are transparent and timely in order to provide certainty of action.

b. Policy Objectives

(i) To promote a high standard of performance and responsiveness in administration in order to increase efficiency and enhance competitiveness within the ICT sector.

(ii) To ensure that the administration of the regulatory mandate is effected through policies and procedures which are transparent and effective.

(iii) To simplify the licensing processes to promote growth and encourage investment.

c. Policy Strategy

The ICT Regulator will be required to adopt and adhere to rules and procedures which facilitate the highest standard of procedural efficiency, transparency and responsiveness to technological changes.

4. SPECTRUM: A National Resource

a. Policy Issue

The Radio Frequency Spectrum is critical for any application that requires wireless technologies, including broadcasting, subscriber television, aeronautical and maritime guidance systems and emergency services. The rapid increase in the provision of mobile services and the introduction of new broadband wireless technologies has increased the demand for spectrum dramatically over the last few years. This makes the Radio Frequency Spectrum a valuable national resource which must be managed efficiently on principles of equity and flexibility, taking account of international protocols, innovation and market dynamics. Existing anomalies in the licence fee regime will need to be addressed.

b. Policy Objectives

To have efficient spectrum planning, allocation and assignment in accordance with international best practices, protocols and standards, taking account of the need to:

(i) Facilitate the deployment of existing and emerging wireless technologies;

(ii) Derive maximum economic benefit and promote development;

(iii) Attract investments; and

(iv) Establish a protocol for the declaration and treatment of licence exempt spectrum.

c. Policy Strategies

(i) Provision will be made in the ICT legislation for:

- Government to determine the framework by which Spectrum is assigned and for the ICT Regulator to administer the process.

- The suspension and revocation of the right to use the spectrum allocated, in the interest of national security or defence upon a

directive from the Minister with portfolio responsibility for spectrum issues.

- The ICT Regulator to have enforcement powers to deal with the illegal use of spectrum. The relevant section of the Post and Telegraph Act will be repealed.

- Recovery and "refarming" of previously assigned spectrum that is underutilized and/or used inefficiently, taking account of domestic imperatives, ITU Radio Frequency Plan, licensing terms and conditions and international best practices.

- The 'use or lose' principle to be applied.

- The declaration of licence exempt spectrum bands.

- All users of non exempt spectrum bands to be licensed.

- The ICT Regulator to waive licence fees for certain specified services in accordance with Government policy.

- All licensees to contribute to the cost of regulation unless otherwise exempted in keeping with domestic imperatives and taking account of international best practices.

- The allocation of radio spectrum to accommodate law enforcement, public safety, emergency and other services of national interest.

- Continued use of regulatory mechanisms that empower the Regulator to ensure the most efficient use of the spectrum and to enhance and facilitate competition.

(ii) Licence fees will be computed taking account of the nature of the use, or change in the use, of assigned bands.

(iii) Provision will be made for the promulgation of a new Spectrum Management Policy to include regional harmonization and technological evolution.

5. COMPETITION

Competition attracts investment, facilitates innovation and benefits consumers. Provision must therefore be made to promote and protect competition through appropriate legislation on mergers and acquisitions.

Under the current arrangement, sector-specific ex-ante regulation is treated in the Telecommunications Act and coexists with ex-post enforcement of general competition law. Moving forward, the ex-post approach is expected to be the dominant means by which competition is regulated. In the short to medium term however, provision has to be made for ex-ante regulation to deal with issues such as terms and conditions of interconnection, and to safeguard against (*inter alia*) the misuse of shared information.

5.1 Policy Element – Competition Regulation

a. Policy Issue

(i) The fair competition legislation does not make provision for the regulation of mergers and acquisitions. However, it is necessary to prevent the concentration of market power that can result in the manipulation of prices or stifling competition.

(ii) The existing regulatory arrangements do not clearly delineate the responsibilities of the Competition Regulator and ICT sector regulator(s). As a consequence there is uncertainty in the ICT sector as to the authority responsible for resolving critical competition issues.

b. Policy Objective

To provide an adequate, efficient, effective and equitable regulatory regime to resolve competition issues in the ICT sector having particular regard to its dynamic nature.

c. Policy Strategies

(i) Provision will be made in the ICT legislation:

- For the prescription of Competition Rules and to empower the ICT Regulator to intervene where there is discriminatory conduct on the part of the carriers and service providers

- To empower the Regulator to approve the terms and conditions pursuant to which a carrier or service provider may discontinue Specified Services to either party or to consumers; and to enforce compliance with such terms and conditions.

- For the ICT Regulator to have jurisdiction for ex ante matters to include but not be limited to:

  - ✓ Non-access anti-competitive issues inclusive of matters pertaining to change of ownership and control and ex-ante competitive safeguards;

- ✓ Terms and conditions of interconnection and other forms of access; and

- ✓ Facility Sharing.

- The Competition Regulator will retain jurisdiction for ex post matters which affect competition in the ICT sector. The Competition Regulator will notify and have regard to any recommendations made by the ICT Regulator.

- The legislation will make provision for Rules of Procedure to govern the foregoing.

- The continued existence of, or the degree to which both ex ante and ex post regulation are applied to the ICT Sector, will be the subject of review, having due regard to the principle of regulatory forbearance.

- The Inter Regulators Forum will be the mechanism for resolving any uncertainties in jurisdiction.

(ii) Legislative provision will clearly state Sector specific definitions.

(iii) Access obligations will be grounded in the 'equality of access' principle.

5.2 Policy Element – Number Administration

a. Policy Issue

Telephone numbers constitute a finite national resource which must be administered in the public interest. To respond to these developments, there is a need to expand the authority of the Regulator to effectively manage this resource to ensure equity and fair allocation of numbers to all carriers, service providers and new services, as appropriate. There is also a need for inclusion of new numbering options and adoption of number portability subject to economic viability and market demand.

b. Policy Objective

The optimal allocation and management of telephone numbers and codes to all existing and new service providers and to allow for the application of new numbering schemes as deemed suitable.

c. Policy Strategies

(i) The ICT Regulator will, consistent with international best practices, have responsibility for:

- Managing a numbering system to meet current and future demands for telephone numbers and codes;

- The allocation of numbers and codes on an equitable and commercially reasonable basis;

- Cost effective management of the numbering plan;

- Developing and promulgating standards for the utilization of numbering; and

- Ongoing interaction with the appropriate international bodies engaged in telephony management and switching to ensure that local numbering plans are known to the international telecommunications sector.

(ii) The ICT legislation will make provision for an efficient method of administering the numbering system, inclusive of:

- The recall and reallocation of number resources to promote efficient management of the numbering system, as required;

- Number portability; and

- New numbering options.

(iii) Provision will be made for recovery of administrative costs.

5.3 Policy Element – Jamaica's Country Code Top Level Domain Administration (.jm ccTLD)

a. Policy Issue

The .jm ccTLD is an integral component of the ICT infrastructure. It must be developed taking account of the need for adequate security measures and management protocols in order to usher in a new wave of innovative technologies and products to increase economic development and further encourage an open competitive environment.

b. Policy Objective

The Government will facilitate management of the ccTLD registry to ensure that this economic resource reaps the maximum benefits for all Jamaicans.

c. Policy Strategies

The Government shall make provision for:

(i) Administrative and technical management of ccTLD;

(ii) Policies and procedures for the registration of the ccTLD Domain Name;

(iii) The .jm ccTLD to be administered by an entity with the requisite capacity;

(iv) Promotion of the .jm ccTLD as a unique branding opportunity for Jamaican entities and individuals;

(v) Automated and shared registration systems to allow registrars and designated entities to register .jm names and facilitate local and global distribution of registrations; and

(vi) Development of a Dispute Resolution Policy to resolve cyber squatting.

6. UNIVERSAL SERVICE

6.1 Policy Element – Universal Service

a. Policy Issue

The existing definition of universal service is restrictive and needs to be expanded beyond physical access to networks. Universal service must encompass enabling elements such as information literacy and financing, bearing in mind that ultimately Jamaicans will be empowered and enriched not simply by technology but by the capacity and opportunity to create and use content and applications.

b. Policy Objective

To achieve a thriving, digital economy and knowledge-based society with opportunities for accelerated growth and which includes every Jamaican.

c. Policy Strategies

The Government shall redefine universal service in the relevant legislation, as inclusive of the following elements:

(i) Physical Access through connectivity to local/regional and international networks;

(ii) Resource Access (financial and human) which takes account of the need for financial support to enable small and medium enterprises (SMEs) to acquire ICTs for entrepreneurial and business development, particularly SMEs' involved in innovation and creation of ICT products and services; and the need to support technical training and education to develop a

cadre of knowledge workers capable of supporting local and international investments in the ICT sector and the wider economy; and

(iii) Basic Access which requires that, at minimum, opportunities are made available for all Jamaicans to become computer literate.

6.2 Policy Element – Universal Service Obligations

a. Policy Issue

The entire population will not necessarily have access to the ICTs within the time frames set out in Jamaica's ICT Strategic Plan. The Government will intervene as required to promote universal service.

While voice telephony, through wire line and wireless means penetrates extensive areas of the island, the availability and access to high capacity networks for Internet access remains a major challenge. This has adversely impacted ICT based education, access to information, deployment of electronic services (e-Services) and entrepreneurial opportunities beyond urban and other densely populated geographical regions. There is, therefore, a need to deploy high capacity networks to unserved and underserved areas as also to enhance efficiency and stimulate economic development.

b. Policy Objective

The policy seeks to promote accelerated deployment of affordable and accessible high capacity networks and facilities islandwide.

c. Policy Strategies

The Government shall:

(i) Keep under review unserved and underserved areas of the country and pursue strategies to increase access to high capacity services;

(ii) Support programmes that specifically target vulnerable groups including low-income households, the elderly, youth and the disabled;

(iii) Utilize the Universal Access Fund to provide support through loans, grants and/or equity investments in ICT projects operated by, non-profit organizations and local micro businesses (excluding ICT Operators) to stimulate the expansion of ICT access;

(iv) Incentivize deployment of ICT services to unserved and underserved areas and the provision of Access Points and multi-function telecentres;

(v) Continue to fund connectivity services and supporting infrastructure to educational institutions, public libraries and post offices;

(vi) Provide Internet access devices and applications for the training of students in the use of the Internet and other ICT services, to support the Government's vision of creating an information and knowledge based society;

(vii) Facilitate the achievement of lifelong learning and a knowledge based society by providing ubiquitous access to information which supports improved education, skills acquisition and innovations; and

(viii) Promote information literacy programmes and the development of local content.

6.3 Policy Element – Funding of Universal Service Obligations

a. Policy Issue

The funding base for universal access programmes has been under constant pressure over recent years due to a number of factors that have eroded traditional sources of revenue. Revenues have been declining rapidly over the past few years as a result of a combination of factors, such as increased competition, the circumvention of the international accounting rate system and an increase in the use of cheaper VoIP services.[4] It is therefore important to protect the reliability of and augment the revenues for universal service programmes.

b. Policy Objective

To extend the obligation for payment of the Universal Service Obligation levy to all ICT service providers.

c. Policy Strategies

(i) Provision will be made in the ICT legislation for:

- The UAFCL[5] to collect and monitor the inflows of funds to the Universal Service Fund (the Fund) and manage the protocols governing use of the Fund. The UAFCL will be held responsible for reporting on the use of the Fund which shall have succession until it is dissolved.

[4] ITU Trends in Telecommunication Reform 2007, The Road to Next-generation Networks

[5] Universal Access Fund Company Limited

- A project approval process to enable the UAFCL to fund approved programmes and projects.

- The Universal Service Obligation levy to be derived from a charge on inbound international voice, data and all other forms of traffic or a percentage of gross revenue from ICT licensees.

- Sanctions for non-compliance with the payment of Universal Service Obligation levy.

- All licensees will be under an obligation to pay the levy to enable the discharge of all Universal Service Obligations.

(ii) The Fund will (among other initiatives) support connectivity access, the provision of hardware, software and supporting infrastructure to schools, provision of hardware and software to libraries and post offices; support content, information literacy, educational and technical training in ICTs.

7. E-GOVERNMENT

a. Policy Issue

ICTs must be optimally utilized to facilitate transparency and accountability in government, citizen engagement with government, and to integrate fragmented systems to enhance delivery of public services. Currently, Government use of ICT is still evolving and system deployment remains fragmented.

In keeping with the National ICT Strategy the Government needs to be a model user of ICTs.

b. Policy Objective

To create a transformational state bureaucracy; 'on demand' government through integrated 'end to end' processes across the Government service and with stakeholders; effective communication; stimulation of public involvement; empowerment of citizens; minimization of social exclusion, and realization of the knowledge based society.

c. Policy Strategy

Government shall advance its e-Government agenda for the delivery of public services in an integrated fashion, facilitated by ICTs and consistent with the National Development Plan 2030; WSIS Declaration of Principles, WSIS Plan of Action and the Millennium Development Goals.

8. CONSUMER PROTECTION

8.1 Policy Element – Quality of Service

a. Policy Issue

The deployment of ICT networks to seamlessly deliver a range of services poses challenges with respect to Quality of Service (QoS).

b. Policy Objective

To have an ICT environment in which consumers enjoy efficient and reliable communications services that conform to international QoS standards.

c. Policy Strategies

(i) Provision will be made in the ICT legislation:

- For minimum service level standards to cover the fundamental precepts of ICTs in keeping with international best practices, to be met as a condition of operating licences and for appropriate sanctions to be applied where breaches occur.

- For the ICT Regulator to obtain and publish with regularity, information on industry performance.

- To empower the ICT Regulator to intervene where carriers and service providers are not sufficiently responsive to customer complaints. The law will also provide for redress.

(ii) Encourage the industry to establish and operate voluntary industry codes (to be registered with the ICT Regulator) and provide consumers with up-to-date QoS information.

8.2 Policy Element – Privacy and Security

a. Policy Issues

Privacy of customer information can be compromised by virtue of unauthorized access. It is, however, recognized that in certain specific circumstances (national security and defence) provision may be made for access to personal information. Possible violations include archiving of personally identifiable customer information for marketing and sales purposes without prior written or electronic consent, and failure to disclose policy regarding usage of information, unauthorized recording of communication and installation of rogue programmes.

b. Policy Objective

To minimize the risks of the unauthorized access and the disclosure of customer information.

c. Policy Strategies

Provision will be made in companion legislation:

- To require custodians of web-based databases to maintain system integrity through physical and logical security on the technology deployed.

- For sanctions related to invasion of privacy, unauthorized access and unauthorized use of customer information.

- To establish protocols to treat with requests for access to personal information.

9. SECURITY

9.1 Policy Element – ICT Support for Security and Emergency Management

a. Policy Issue

Currently, the level of ICT usage in communications and management strategies for administering public safety, security and disaster relief is not at an optimal level.

b. Policy Objective

To ensure optimal utilization of ICT including telecommunications for enhanced national security; disaster relief communication and management responses.

c. Policy Strategies

In this context, the Government shall:

- Prioritize enabling telecommunication resources for disaster mitigation and relief operations;

- Ensure that any obstacles to the provision of communications resources which are required for national security, disaster mitigation and relief operations will be addressed.

- Develop and adopt measures that would ensure safety and security of life through uninterrupted telecommunication services.

- Ensure that the ICT Regulator facilitates national disaster and emergency communications systems which will support the work of Emergency Service Organisations.

- The establishment of a Central Emergency Response Team to address matters regarding cyber threats and appropriate responses thereto.

10. ICT INFRASTRUCTURE

10.1 Policy Element – Accelerate Access and Uptake of High Capacity Networks

a. Policy Issue

The ICT infrastructure is a strategic resource; the efficient deployment of high capacity networks and international connectivity are important to stimulate entrepreneurship and accelerate the provision of public and private e-services and m-banking and provide access to worldwide markets.

b. Policy Objective

To have islandwide ICT infrastructure which facilitates greater access to high capacity networks with interconnection to international networks.

c. Policy Strategies

(i) Provision will be made to:

- Facilitate the establishment of islandwide high capacity networks that will efficiently convey traffic which originates from all access technologies.

- Encourage an environment conducive to the continued development and enhancement of the ICT infrastructure, including international connectivity.

- Encourage an interoperable ICT infrastructure with appropriate levels of redundancy and resilience.

- Facilitate the establishment of a National Internet exchange point.

(ii) Provision will be made in companion legislation for appropriate treatment of access to public right-of-way.

10.2 Policy Element – Physical Infrastructure

a. Policy Issue

There is need to have in place the appropriate physical infrastructure to encourage investment in the ICT Sector.

b. Policy Objective

To have available the necessary physical infrastructure which will facilitate the establishment of ICT related businesses, to include SMEs, in ventures such as business process outsourcing (BPO), software development and hardware manufacturing and repair.

c. Policy Strategy

The Government shall support the ongoing development of office and factory space and industry incubators, through a public-private partnership framework, to be established by the Ministry with portfolio responsibility for industry and investment.

10.3 Policy Element – Infrastructure Sharing

a. Policy Issue

There is need for greater sharing of essential infrastructure and facilities among Operators. In addition, there are issues with multiple operators who engage in excavating the public roadways to install equipment and lay cable. Specifically, there is a lack of coordination between operators resulting in increased costs, traffic congestion and undue disturbance to the public. Therefore, there is an urgent need to implement an infrastructure sharing policy to resolve these issues.

a. Policy Objective

To promote infrastructure sharing to facilitate optimal location of ICT infrastructure islandwide.

b. Policy Strategy

Provision will be made in the ICT legislation to govern the optimal utilization of ICT infrastructure (e.g. infrastructure facility sharing and co-location).

11. TECHNOLOGY, RESEARCH AND INNOVATION

11.1 Policy Element – Technology Neutrality

a. Policy Issue

In an environment of rapid evolution and growth in the range of technological options for delivering ICT solutions, technology neutrality fosters innovation and simplifies the approach to regulation by focusing attention on services and not the means of delivery.

b. Policy Objective

A robust, responsive and appropriately regulated environment in which technologies compete and innovation is stimulated.

c. Policy Strategies

The Government shall:

(i) Foster an environment in which a range of technologies are used to offer various services.

(ii) Make provision for the ICT Regulator to operate consistent with the principle of technology neutrality.

(iii) Encourage new investments and support innovation to stimulate the introduction of new technologies and services.

11.2 Policy Element – Research and Innovation

a. Policy Issue

In order for Jamaica to become more competitive there is an urgent need for focused attention on ICT research, innovation and development. There needs to be a framework to channel resources towards supporting research, innovation and development.

b. Policy Objective

To establish a framework to support ICT research and innovation geared towards national priorities.

c. Policy Strategies

The Government shall:

(i) Promote an increase in observing copyright and the registration of patent and trade mark for ICT innovations.

(ii) Facilitate funding of facilities for ICT research, innovation and development.

(iii) Support deployment of local ICT innovations.

(iv) Encourage collaboration among local, regional and international experts and research institutions.

(v) Systematically develop education and skills capacity to support advanced research and innovation in ICT.

(vi) Establish centres of excellence and encourage the development of knowledge networks and communities of practice.

12. ICT AND THE ENVIRONMENT

12.1 Policy Element – Disposal of ICT Waste

a. Policy Issue

ICT hardware/equipment is increasingly being utilized by businesses and citizens in everyday activity and as such there is a build-up of its local inventory. The material components of ICT hardware/equipment vary in nature and may require specific treatment in disposal.

b. Policy Objective

To facilitate the framework for appropriate disposal of ICT waste.

c. Policy Strategies

(i) Provision will be made:

- For the Standards Organization to do type testing and/or verification of manufacturer standards of ICT equipment that will be widely deployed.

- To support the development of a comprehensive policy for the appropriate disposal of ICT waste and the use of fiscal and regulatory instruments to encourage compliance.

(ii) Encourage the recycling/re-use of ICT equipment to extend its life and extract maximum utility.

(iii) Encourage the development of a service sector to repair/rehabilitate/upgrade ICT equipment.

12.2 Policy Element – Levels of Emission

a. Policy Issue

ICT equipment and installations may emit radiation.

b. Policy Objective

To establish standards for emission levels consistent with international guidelines.

c. Policy Strategies

(i) Provision will be made in the ICT legislation requiring importers/suppliers of ICT equipment to obtain quality verification and certification by the Standards Organization, where required.

(ii) Provision will be made:

- For suppliers of equipment to have facilities for measuring radiation levels.
- To require suppliers to provide information to the public regarding radiation output and increased risk of damaged instruments.
- For the relevant Authority to develop a policy for levels of emission in accordance with recognized international standards or best practices.
- For the relevant Authority to enforce compliance with the prescribed emission standards.

13. MONITORING AND EVALUATION

This ICT Policy is a summary statement of the philosophy, objectives, targets, strategies and the methodology to ensure equitable and judicious execution of the business of ICT in the country. The development of an ICT Implementation Plan shall form the basis for Monitoring and Evaluation (M&E) of the implementation of the provisions of this Policy. Specifically, the Information and Telecommunications Department of the Office of the Prime Minister in conjunction with private sector, academia, civil society and other stakeholders shall develop an M&E system based on agreed sector indicators as part of the development of an integrated ICT Policy Implementation Plan.

In view of the above, 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 ICT sector. Revision of the Policy will be conducted every three years and a progress and analysis report with respect to the impact and achievements will be presented to inform such review and modifications.

14. KEY STAKEHOLDERS AND THEIR ROLES

The following are the key stakeholders who will be responsible for implementing this Policy:

Stakeholders	Roles/Responsibilities
Office of the Prime Minister	1. Create knowledge parks and centres of excellence to facilitate research & development and innovation with emphasis on indigenous technology 2. Create appropriate policy and regulatory environment conducive to investments in ICT 3. Review and implementation of the ICT Policy 4. Encourage Government to become an exemplar user of ICT applications 5. Oversight of the procurement of ICT equipment in the public sector 6. Oversight for implementation of GovNet 7. Encourage the development of a service sector to repair, rehabilitate and recycle ICT equipment
Ministry of Education	1. Increase the use of technology as a tool for enhancing teaching 2. Implementation of e-Learning Project
Ministry of Industry, Investment and Commerce and JAMPRO	1. Attract ICT-related Foreign Direct Investments 2. Business Process Outsourcing 3. Facilitate public private partnership as needed 4. ICT Factory Spaces
Ministry of Finance and the Public Service	Approval of budgets for Government ICT initiatives
Ministry of National Security	Administer Cyber Crime Legislation
Ministry of Justice	Provide legislative support
Universal Access Fund Company Limited	1. Management of the Universal Access Fund 2. Provide funding for universal access programmes and projects 3. Management of Fund to support ICT research and innovation and micro-business
Central Information Technology Office/FISCAL Services Limited	1. Create knowledge parks and centres of excellence to facilitate research and development & innovation with emphasis on indigenous technology 2. To proliferate and promote the delivery of e-Government services 3. Harmonize ICT infrastructure systems across the public sector 4. Encourage Government to become an exemplar user of ICT applications 5. Develop standards for the procurement of ICT hardware and software in the public sector
National Environment and	1. Development of National Policy on ICT and Hazardous Waste

Stakeholders	Roles/Responsibilities
Planning Agency and National Solid Waste Management Agency	Management
Bureau of Standards	1. Establish standards for radiation emission levels in keeping with international guidelines and best practices 2. 2. Type testing and /or verification of manufacturer standards for ICT equipment to be widely deployed across the island.
Office of Utilities Regulations	3. Strengthen policy, legislative and institutional framework for fair market competition 4. Infrastructure sharing
Spectrum Management Authority	1. Management of Radio Spectrum 2. Number Administration
Broadcasting Commission	1. Licence and monitor Broadcasters 2. Develop policy for the effective regulation of content on all platforms 3. Strengthen policy, legislative and institutional framework for fair market competition
Fair Trading Commission	1. Strengthen policy, legislative and institutional framework for fair market competition 2. Promote competition in the sector
Consumer Affairs Commission	Protection of consumer rights
ICT Industry Appeal Tribunal	Timely resolution of ICT disputes
University of the West Indies	Management of Jamaica's Country Code Top Level Domain
All Ministries	Implementation of GovNet

GLOSSARY OF TERMS

In this document, where the context allows, the following terms will have the meanings specified below:

Terms	Definitions
Access	The making available of ICT facilities and/or services under defined conditions, on either an exclusive or non-exclusive basis.
Business Process Outsourcing	A form of outsourcing that is characterised as an information technology enabled service which involves the contracting of operations to a third party service provider.
Co-location	The process by which ICT operators locate equipment in the same space/facility. Co-location allows operators to easily interconnect equipment and/or networks.
Connectivity	The capability to provide, to end users, connections to other communication networks. E.g. the Internet
Convergence	A term used to describe a variety of technological and market trends involving the blurring of previously distinct lines between market segments such as cable television, telephony and Internet access, all of which can now be provided through a variety of different network platforms.
Country Code Top Level Domain (cc TLD)	A top-level domain (TLD) name on the Internet that is reserved for a country or territory, for example, (.jm) for Jamaica.
Cyber Squatting	This is the registering, trafficking in, or using a domain name with bad faith intent to profit from the goodwill of a trademark belonging to another individual or entity.
Digital Divide	The gap between people with effective access to digital and information technology and those with very limited or no access at all. It includes the imbalances in physical access to technology as well as the imbalances in resources and skills needed to effectively participate as a digital citizen.
Digital Economy	The global network of economic and social activities that are enabled by information and communications technology, such as the Internet, mobile and sensor networks.
e-Government	The use of information and communication technology to provide and improve government services, transactions and interactions with citizens, businesses, and other arms of Government.
e-Services	The provision of services via the Internet. e-Services includes e-commerce transactions.
Equality of Access	Requires that a dominant operator's wholesale customers have access to the same or similar set of wholesale products, at the same prices and using the same or similar transactional processes as the dominant operator's retail arm has and does.
Ex-ante regulation	Ex-ante regulation involves setting specific rules and restrictions to prevent anti-competitive or otherwise undesirable market activity by carriers before it occurs. Ex -ante regulation is mainly concerned with market structure, that is, the number of firms and level of market concentration, entry conditions, and

Terms	Definitions
	the degree of product differentiation.
Ex-post Regulation	Ex-post regulation calls for setting few or no specific rules in advance, but aims to address proven anti-competitive behaviour or market abuse through a range of enforcement options including fines, injunctions, or bans. Ex-post regulation is mainly concerned with market conduct — the behaviour of a firm with respect to both its competitors and its customers.
Facility	Any apparatus, infrastructure, building, including switching equipment locations, mast sites, towers, poles, trunk lines, user access lines, ducts, submarine optical fibre cables and other tangible resources used or capable of being used for ICT or ICT related services and operations.
High Capacity Networks	A high-speed medium that is able to transmit signals from multiple independent network carriers. This may be done on a single coaxial cable, fibre-optic cable or wireless signals by establishing different bandwidth channels to transmit data, voice and video over long distances simultaneously.
Information Communication Technologies (ICT)	Technologies employed in collecting, storing, using or sending out information and include those involving the use of computers or any telecommunication system.
ICT Industry	Any entity- (a) carrying on a business; or (b) engaged in any commercial activity connected with Information and communication technologies
Industry Incubator	A programme designed to accelerate the successful development of entrepreneurial companies through an array of business support resources and services.
Interconnection	The physical and logical connection of separate telecommunications networks to allow users of those networks to communicate with each other. Interconnection ensures interoperability of services and increases end users' choice of network operators and service providers.
Internet Exchange Point (IXP)	A central location where multiple Internet Service Providers can interconnect their networks and exchange IP traffic.
Interoperability	The ability of two or more facilities or networks to be connected to exchange information, and to use the information that has been exchanged.
Knowledge Networks	Is designed to enhance competitiveness by using ICTs to connect Jamaica to the global pool of knowledge, develop human resources, facilitate greater integration and foster continuous learning and improvement among practitioners.
Knowledge-based Society	A society that is able to access, share, produce and adapt all available information in order to inform decision making, facilitate innovation and provide for life long learning.
License Exempt Spectrum	Radio frequency bands determined to be exempt in keeping with national imperatives and international best practices. Licence exempt spectrum usually includes bands which allow for the operation of short range and low output devices.
Logical Security	Logical security consist of software safeguards including user ID and password access to ensure only authorized users are able to perform actions and access information.
m-Banking	Financial transaction undertaken using a mobile phone against a bank account

Terms	Definitions
(Mobile Banking)	accessible from that phone.
Number Portability	The ability of a consumer to change service location; subscribe to a new form of service or transfer from one service provider to another without requiring a change in number and without impairment of quality, reliability, or convenience when switching.
Neutrality of Technology	ICT policy which has defined the objectives to be achieved, and should neither impose, nor discriminate in favour of, the use of a particular type of technology to achieve those objectives
Quality of Service (QoS)	The collective effect of service performance which determines the degree of satisfaction of a user of the service. The level of quality required by the users of a service may be expressed technically or non-technically as per international best practices.
Radio Frequency Spectrum or Spectrum	The radio-frequency spectrum refers to electromagnetic radio frequencies used in the transmission of sound and data.
Redundancy	To allocate additional resources to critical ICT assets for disaster recovery.
Refarming	A process constituting any basic change in conditions of frequency usage in a given part of radio spectrum. Such basic changes include: - Technical conditions for frequency assignments - Application (particular radiocommunication system using the band); - Allocation to a different radiocommunication service
Right-of-way	A privilege granting public access to an area of land such as a street, road, highway, side walk/ foot path over which ICT infrastructures, railroads, power lines, gas, oil, water and other pipelines and sewers are built.
Specified Service	A specified service is provided to the public if it – a) is supplied, directly or indirectly, for a fee to a person other than – i) a connected person of any of its employees or officers; or ii) a closed user group; b) is connected to a public network; or c) provides customers with the capability to use the service for originating specified services to or terminating such services from the public switched telephone network.
Telecentre	A public place where citizens can access computers, the Internet and other ICT services.
Universal Service	Refers to a policy of the Government to make ICTs equally accessible throughout Jamaica through promotion and support of physical, resource and basic access. A defined minimum set of services of specified quality which is available to all users independent of their geographical location, and in the light of specific national conditions, at an affordable price
Universal Service Obligation	An obligation which can be imposed upon the designated ICT operators. This obligation includes a demand by the Government to meet any request for the provision of universal access. The purpose of having such an obligation is to ensure national coverage of ICT service(s) in unserved and underserved areas, where provision of ICT service may be less profitable.
World Summit on Information Society	The UN General Assembly Resolution 56/183 (21 December 2001) endorsed the holding of the World Summit on the Information Society (WSIS) in two

Terms	Definitions
(WSIS)	phases. The first phase took place in Geneva in 2003 and the second phase took place in Tunis, in 2005.The purpose of the WSIS is to ensure that ICT benefits are accessible to all while promoting specific advantages in areas such as e-strategies, e-commerce, e-Government, e-health, education, literacy, cultural diversity, gender equality, sustainable development and environmental protection.

STATISTICS

Table 1: Info-Communications Data in Jamaica

Year	2003	2004	2005	2006	2007	2008
Population	2,630,000	2,644,100	2,656,700	2,669,500	2,682,100	2,691,900
Fixed telephone lines	458,700	423,000	319,000	342,692	369,656	316,591
Mobile phone subscriptions	1,576,400	1,847,552	1,981,464	2,274,650	2,684,331	2,723,323
Internet subscribers				85,000	96,200	105,600
Internet users	800,000	1,067,000	1,232,000	1,300,000	1,500,000	1,540,000
Broadband subscribers	9000	27,000	45,000	68,200	92,800	97,700
Fixed telephone Line density	17.44%	15.9979%	12.0074%	12.8373%	13.7823%	11.7609%
Mobile phone subscription density	59.92%	69.8745%	74.5837%	85.2088%	100.0832%	101.1673%
Internet Subscribers density				3.17%	3.57%	3.90%
Internet user Density	30.41%	40.26%	46.49%	48.84%	55.27%	56.88%
Broadband subscriber density	0.34%	1.02%	1.70%	2.56%	3.42%	3.61%

SOURCE: ITU WEBSITE