

SAINT LUCIA

Saint Lucia National Broadband Policy AND PLAN 2013-2018



Telecommunication Development Sector



Saint Lucia national broadband policy and plan 2013-2018

August 2014





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Foreword

The ITU Regional Office for Asia and the Pacific and in close collaboration with the ITU Area Office Representative for the Caribbean has provided assistance to the Ministry of the Public Service, Information and Broadcasting Division of Public Service Modernisation to prepare a national broadband policy and plan.

ITU, with support from Korea Government, has assisted member countries in developing broadband policies and plans since 2011. ITU has supported four countries in the development of wireless broadband master plans (Myanmar, Samoa, Nepal, and Viet Nam), and also provided technical assistance to six countries to help establish national broadband plans (Cambodia, Bhutan, Bangladesh, Papua New Guinea, Pakistan, and Indonesia). Currently, this project is extended for further technical assistance to form broadband policies and plans in Brunei Darussalam, Lao PDR, Marshall Islands, Philippines, and St Lucia.

I congratulate Sainte Lucia on their national ICT policy that shows the Government of Saint Lucia is committed to a strategy for a countrywide broadband infrastructure – an essential enabler for economic and social development that will not only strengthen the information and communication technology sector but will facilitate measurable levels of improvement in most other sectors.

I am certain that the development of the Saint Lucia national broadband policy and plan for 2013 to 2018 will add to the strength in depth of that commitment.

Brahima Sanou

Director

Telecommunication Development Bureau

Executive summary

Saint Lucia has one of the highest rates of mobile penetration in the region, the challenge now is to embrace convergence and facilitate the use of broadband by this large base of mobile subscribers. This requires investment in cost effective infrastructure to endure affordable prices and content.

Firstly, in relation to infrastructure, more needs to be done in order to provide the most cost-effective technologies. Technology neutrality is a widely accepted principle for the efficient allocation of spectrum and ought to be embraced by the regulatory frameworks. Use of the 700 MHz spectrum band as a key spectrum enabler for the provision of the latest wireless services (mobile broadband) in Saint Lucia and the licensing of these new service providers are high priorities of the government – thus ensuring that the latest wireless services can be delivered to a high percentage of the population including rural areas; and that the licensing of services is not to be unduly delayed. Other bands such as 2.5-2.69 MHz and 2.3 GHz shall be given similar emphasis in setting licensing priorities.

Reaching the highest number of people should be seen as a priority for Saint Lucia and is endorsed under this wireless broadband master plan. Satellite services – perhaps with a local cellular or Wi-Fi hotspot should also provide a critical link in addressing the digital divide in more remote areas of the country.

Secondly, concerning content, there are currently no businesses driving content development whereas the government has indicated willingness to develop areas of the arts and tourism. Notwithstanding, much more has to be done at governmental level to facilitate the transformation of the country.

To achieve these developments, time, investments and commitment will be needed by stakeholders including the private sector, government, non-governmental organizations (NGOs) and potentially donor funding from international finance institutions. In this regard, this plan proposes key areas of focus in the short, medium, and long term (over eight years).

This plan focuses on achieving the maximum gains in terms of coverage and capacity, and on ensuring that the further development of broadband services can be achieved in a short period of time. Key considerations include:

- the economic and social importance of broadband and its role in improving productivity and providing information and services taking note of the strong focus on tourism;
- the structure of and number of telecommunication operators;
- the current regulatory framework and technology and spectrum plans;
- the growing demand for broadband services and the considerable demand for more accessible spectrum in the future;
- the restructuring of the government policy units in the ICT ministry;
- the transition from a spectrum management approach to a more liberalized model, and the need to deal with such regulatory changes; and
- key technologies - including Wi-Fi, GSM/LTE, W-CDMA, and satellite.

Policy priorities have been identified to be implemented in phases to address a number of key areas to be strengthened in the promotion, facilitation and improvement of access and use of broadband technologies in Saint Lucia:

- Government framework, organization and procurement: The government recognizes the need to develop a coordinated approach to promote and facilitate investment, maximize expenditures, and broaden the use of broadband throughout society and in the economy.
- Competitive environment: Improving a deteriorating competitive environment that is not serving to encourage operators to aggressively pursue broadband strategies.

- Fiscal arrangements: To minimize tariffs and taxes that will lead to increased usage, quicker adoption and ultimately higher revenues for government.
- Access to spectrum: Improving access to more radio spectrum with emphasis on flexibility – technology and service neutral licensing.

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Introduction

The importance of basic telecommunication services for economic growth and social development have long been recognized by the international community and ITU. The traditional measurement of fixed voice line penetration per 100 person population as a standard metric for evaluating the quality of basic infrastructure has in the past ten years been surpassed by a similar metric for mobile line penetration. In addition, the positive correlation between ICT penetration and economic activity (usually measured as GDP per capita) remain and are well known.

Today however, access to telephone services, while remaining essential, is no longer enough. Internet access – and increasingly that means broadband Internet access – is now generally regarded as an essential basic infrastructure for society and the economy. From email to the World Wide Web, from electronic commerce to blogs, from Web 2.0 supply-chain management to social networking, a large and growing number of citizens depend on the Internet and access to mass-market data communications services as part of their social and economic lives.

While broadband Internet access is now widely recognized in Asia, Europe and the Americas to be essential basic infrastructure, universal access (in even the most developed economies) and deployment lags significantly in less developed markets and is certainly not commonplace. Significant progress in expanding Internet access is being made and yet, the digital divide stubbornly persists.

In recognition of the need to expand options for access, policymakers in many countries have been implementing plans and allocating public funds to promote investment in broadband infrastructure and to also promote the adoption and use of Internet services across the economy and throughout society.

The purpose of this document is to identify the fundamental underpinnings of the Broadband Policy for Saint Lucia and the priorities and action needed to implement the plan.

What is meant by broadband?

Traditionally, broadband has often been defined in terms of data transmission speed (i.e. the amount of data that can be transmitted across a network connection in a given period of time, typically one second, also known as the data transfer rate or throughput). Defining broadband in terms of speed has been an important element in understanding broadband, particularly since the data transfer rate determines whether users are able to access basic or more advanced types of content, services and applications over the Internet.

However, attempts to define broadband in terms of speed present certain limitations, the primary one being how much is enough? Several countries have already experienced situations where the mandated broadband speed has already been made obsolete and is not keeping up with the pace of technology development or the needs of users.

It may be more useful to define broadband in terms of functionality whilst attempting to limit the subjectivity of possible definitions. As an example of a functional definition, the Brazil broadband plan avoids attaching a minimum speed to its definition of broadband. Instead, broadband is defined as “the provision of telecommunication infrastructure that enables information traffic in a continuous and uninterrupted manner, with sufficient capacity to provide access to data, voice and video applications that are common or socially relevant to users as determined by the federal government from time to time”. This allows the government, operators and consumers to set realistic goals and plans in place with the expectation that capacity and capability will improve over time.

The following definitions for broadband have been reported in the report of the Broadband Commission dated 2010:

1. ITU has defined broadband telephony as a service provided over an access network “able to contain at least one channel capable of supporting a rate greater than the primary rate, or

supporting an equivalent information transfer rate” – see the ITU-T Database of terms and definitions (SANCHO), available at: www.itu.int/sancho/index.asp.

2. For example, the ITU Trends in Telecommunication Reform Report (2009) notes fixed broadband can be implemented through technologies such as cable modem, DSL, FTTx, Metro Ethernet, WLAN. Mobile broadband is implemented through wideband CDMA2000, CDMA2000 1xEV-DO, HSDPA, etc.
3. For measurement purposes, ITU and the Organisation for Economic Co-operation and Development (OECD) recently harmonized their broadband definitions for fixed (wired) and wireless broadband. ITU recognizes fixed (wired) broadband services as subscriptions to high-speed access to the public Internet (over a TCP/IP connection) at downstream speeds equal to, or greater than, 256 kbit/s. Wireless broadband services include satellite, terrestrial fixed wireless and terrestrial mobile wireless subscriptions with advertised download speeds of at least 256 kbit/s. Broadband definitions were revised at the ITU Expert Group on Telecommunication/ICT Indicators meeting, held in Geneva on 29-31 March 2010. For further information, see: www.itu.int/ITU-D/ict/events/geneva102/index.html.

It is crucial to remember that broadband in itself is not desirable except for what broadband capability does as an enabler and the linkages that allow productivity, employment and incomes to grow are crucial, and strengthening these linkages will be amongst the critical steps taken.

From a policy perspective, broadband should not be viewed simply as a certain speed or functionality, but as an enabling ICT platform that can potentially influence the entire economy.

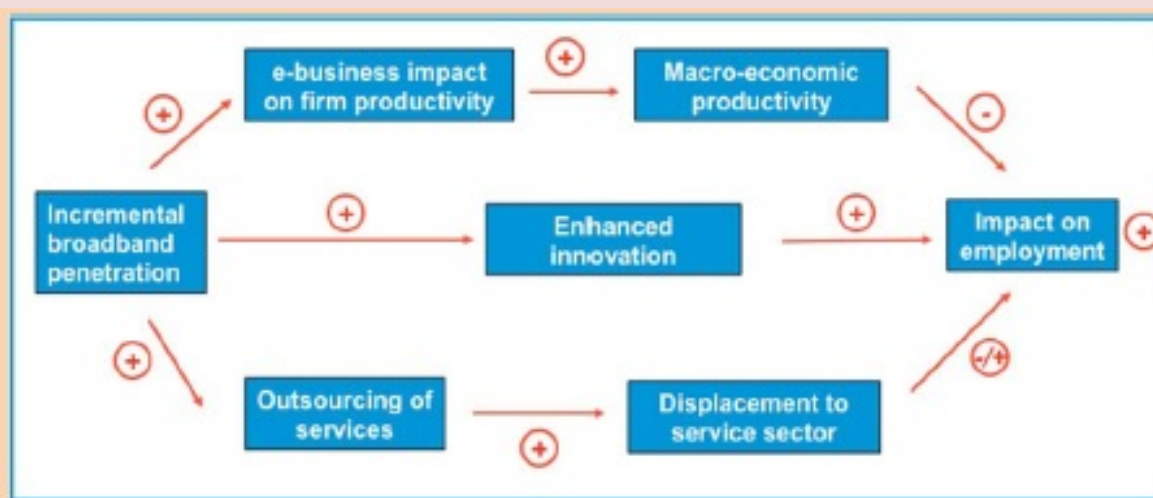
Why is broadband and broadband planning important?

Although it was initially difficult to measure how ICTs contributed to growth and income, there is now quite substantial evidence supporting their significant contribution to modern economies. Likewise, measures of the contribution of broadband to economic development are beginning to emerge¹. However, it is crucial to remember that broadband services in themselves are not desirable except for what broadband capability does as an enabler and the linkages that allow productivity, employment and incomes to grow are crucial and strengthening these linkages will be amongst the critical steps taken.² See Figure 1.

¹ Lehr – Macroeconomic Impacts of Broadband in Egypt, World Bank, 2011

² Katz – Impact of Broadband on the Economy, Columbia University 2011.

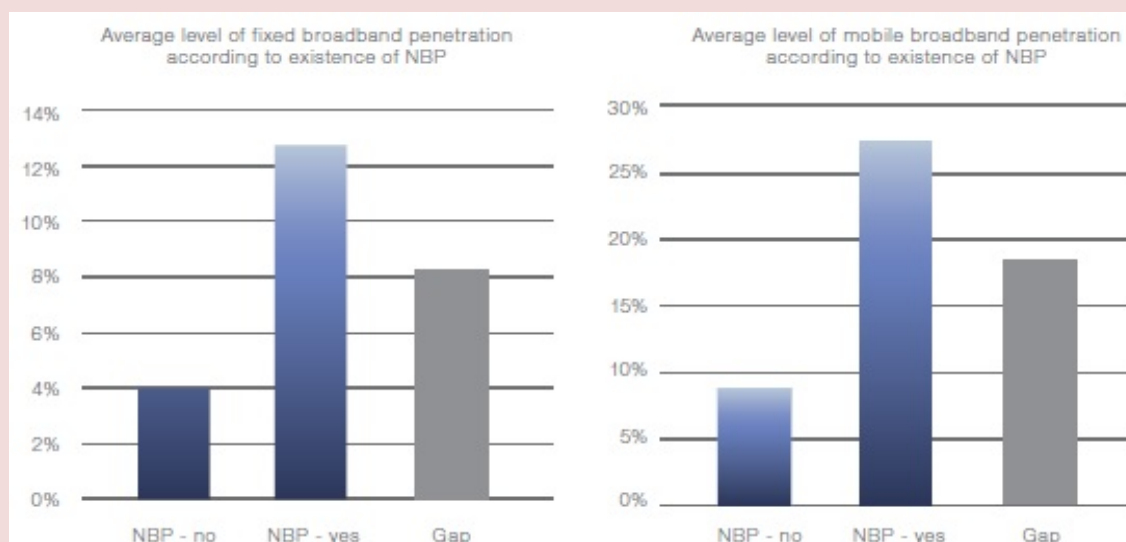
Figure 1: Network effects of broadband on the economy



Many factors influence how fast broadband spreads across a country. Income and investment levels, regulation, competition and urbanisation all play a role. New research from the International Telecommunication Union (ITU) suggests that the presence of a national broadband plan is the most important success factor, followed by competitive markets.

ITU has conducted a statistical analysis on 165 countries for the ten years to 2011 to test for correlation between broadband penetration and six variables: the presence of a national plan; GDP per capita; urbanisation; the presence of a regulator; levels of private sector investment; and the level of market competition. See Figure 2 below.

Figure 2: Positive impact of broadband planning on penetration

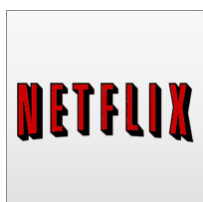


Source: ITU World Telecommunication/ICT Regulatory Database.

The analysis shows that of the six variables, the adoption of national broadband plans correlates most strongly with increases in broadband penetration. Countries adopting some form of a plan—anything from a basic policy framework to a detailed strategy—saw an average increase in fixed broadband penetration from 4 per cent to 12.7 per cent³. The presence of a national strategy was associated with an average from 8.9 per cent to 27.5 per cent mobile broadband penetration⁴. Once the potential impact of factors like higher average income per capita, market concentration and urbanization are discounted, countries with plans benefit from fixed broadband penetration on average 2.5 per cent higher than countries without plans. In mobile, the impact may be even greater – countries that have national broadband plans also have mobile broadband penetration some 7.4 per cent higher on average than countries without plans.

Market competition also plays a strong role in boosting broadband penetration. Competitive markets are associated with broadband penetration levels some 1.4 per cent higher on average for fixed broadband and up to 26.5 per cent higher on average for mobile broadband.

Examples of broadband capabilities, applications and devices



Streaming – audio and video media streams with up to 20GB of data daily for leading users on smart phones, tablets, and PCs done with either live or on demand streaming. Live streams are generally provided by a means called "true streaming". True streaming sends the information straight to the computer or device without saving the file to a hard disk. A broadband speed of 2.5 Mbit/s or more is needed for streaming movies on devices such as [Apple TV](#), [Google TV](#) or a Sony TV Blu-ray Disc Player requiring 10 Mbit/s for High Definition content.



Computing – information acquisition and processing and application stores and updates with up to 7 GBits per month usage on tablets and PC's. By the end of 2011, it was estimated about 30 per cent of mobile broadband users were exploiting notebooks with built-in 3G or WiMAX modules. 58 per cent, roughly twice that proportion, use external modems like USB dongles.



Storing and Using Data – cloud storage, photo and video storage with 1 GBit per month for both residential and commercial users on various devices. The foundation of cloud computing is the concept of [converged infrastructure](#) and [shared services](#). The cloud focuses on maximizing the effectiveness of those shared resources used by multiple users but as well as dynamically re-allocated as per demand. This is especially helpful in re-allocating resources to users in different time zones which optimizes network use and achieves economies of scale.

³ Planning For Progress: Why Broadband Plans Matter. ITU/CISCO, July 2013, p. 35.

⁴ Ibid, p. 35.



Gaming – casual gaming with low to high interaction along with advertising with an average of one to two hours per day.



Communicating – text, voice, video and conference calling with an average of one hour per day use.

Key issues in developing a broadband policy

In the report *Broadband: A Platform for Progress*, the Broadband Commission discussed a range of issues for governments to consider when deploying broadband networks.⁵ Conclusions that emerged from the report include:

- inter alia infrastructure policy should be goal oriented and not focused on particular technologies; pricing or other access barriers should be removed;
- associations between infrastructure and a type of service should be avoided;
- infrastructure sharing is beneficial and should be encouraged;
- fibre-optic networks are likely the preferred backhaul network solution, but depending on national geography / topology, may need to be complimented by wireless infrastructure;
- choosing the right access technologies⁶.

The report also identifies a number of considerations to be taken into account by governments and the regulator in developing economies that are grappling with the challenges associated with increased broadband access. There are a number of areas in this regard that are of particular relevance to this wireless broadband policy and plan.

⁵ A joint undertaking of ITU and UNESCO with broadband targets incorporated into the UN's Millennium Development Goals.

⁶ Guidelines from ITU-D Q.25/2 dated September 2013 are available here: www.itu.int/md/D10-SG02-C-0277/en

Figure 3: Broadband implementation issues

Regulatory	• Legislation • Promote Access • Infrastructure Sharing • Mandated Rules • Spectrum Allocation	• Effectiveness of laws and regulation in promoting broadband • Is infrastructure sharing a reality? • Do operators have mandated MVNO requirements? • What are the appropriate methods for assigning spectrum?
Market	• # of Operators • Degree of Competition • Penetration • Access Targets • Retail Tariffs	• Ratio of mobile to fixed subscribers. • Market structure – duopoly, oligopoly? • What are current penetration rates and what is the trend - maturing? • What is the level of retail tariffs and the trend?
Spectrum	• Future Requirements • Technology Neutrality • Overall Wireless Spectrum • Digital Dividend	• What are the future forecasts of spectrum demand and what future releases are planned? • Is the country committed to technology neutrality? • What is the status and plan for the digital dividend?
Technology	• Key Technologies • LTE Key Spectrum • Satellite • Domestic Backhaul • International Access	• What is the current technology mix and what is the effective mix? • Is backhaul capacity sufficient? • Is international access capacity sufficient? • What are the geographical and technical constraints?
Content	• Language • Local Content • Government Online • Training	• Does government support local content development? Should it? • Does government have eGovernment capability? • Are digital skills being broadly developed

Other global developmental trends in broadband policy and regulation

In recent years, several key trends have emerged with respect to broadband policy and regulation. Governments around the globe have become increasingly cognizant about the importance of high-speed networks and their link to economic growth. As a consequence, there has been a substantial increase in government participation and intervention within the ICT sector. Broadly speaking, supporting government action consists of:

- encouraging private sector participation via improved access arrangements, simplified licensing and deregulation;
- development of national broadband plans/policies;
- financial support in the form of subsidies, tax breaks, grants and loan assistance;
- expanding the scope of universal service obligations (USO) to encompass broadband services;
- updating regulatory regimes to take into account the convergence of media and communications; and
- re-directing universal service funds (USFs) to enable broadband in rural/isolated/low-income areas.

In addition, regulators are coming to terms with the need to prepare for a material increase in the demand for scarce spectrum. Global spectrum management arrangements are evolving to meet changing patterns of use and demand for spectrum. Following a trend that began in Australia, Japan, the United States, and New Zealand, steps are being taken to reduce the involvement of government and let market mechanisms govern the allocation and destination of use of spectrum including:

- allocating spectrum through price-based (market-based) selection processes – especially auctions – or alternative proxy methods (AIP) to impose apparatus charges that reflect the value of the spectrum⁷;
- the owners of spectrum rights are increasingly free to decide which technology to use and which services to provide with it;
- introduction of spectrum trading (in line with spectrum liberalization) in some markets allowing spectrum rights to be allocated via market mechanisms by the users that value it the most; and
- increasing prevalence of spectrum leasing arrangements.

Current situation in Saint Lucia

Broadband planning essential components

ITU, in its guide to developing broadband plans, has identified the essential pre-conditions and components needed to ensure success. Most of these pre-conditions already exist in Saint Lucia; however some important determinants are either missing emphasis or are in development.

Table 1: Existence of essential pre-conditions for broadband planning success⁸

Vision	✓ - in place
Regulatory framework	✓ - in place
Political will and commitment	✓ - in place
Broadband policy and plan and strategy	Specific targets are needed and more emphasis on wireless broadband.
Developmental building blocks	✓ - in place or in development

Status of the economy

Saint Lucia is a founding member of the Organization of Eastern Caribbean States (OECS), located between the islands of Martinique to the north and Saint Vincent to the south.⁹ The island has a population of 169 135 (2012) and an overall land area of 616 km² of which 539.1 km² is habitable. The island topography consists of a central backbone of mountains intersected by valleys and short rivers and

⁷ AIP – administered incentive pricing: ‘administered’ because they are set by the regulator with potential ‘incentive’ properties. AIP is used by regulators such as Ofcom in the UK and ACMA in Australia to promote efficiency in spectrum use within a framework of administrative spectrum management since AIP’s are intended to be set at a level which reflects the scarcity of spectrum and encourages economy in its use.

⁸ See ITU/Cisco joint report 2013: Importance of Broadband Planning.

⁹ The six independent members of the OECS, Antigua and Barbuda, Commonwealth of Dominica, Grenada, St Kitts and Nevis, St Lucia and St Vincent and the Grenadines are also members of the World Trade Organization (WTO). East Caribbean Telecommunication Authority (ECTEL) includes the same members except for Antigua and Barbuda.

a narrow coastal plain. There are two major seaports capable of berthing ocean going cargo vessels and two airports; a regional airport in the north and an international airport in the south.

Over the period 2007-2011 the Saint Lucia economy grew at an average rate of 1.91 per cent. This period of low economic growth in real GDP was capped by growth of 1.04 per cent in 2012 marking the first year of economic expansion after two years of near recessionary levels since the economic downturn began in 2008 following the global financial crises.¹⁰

Saint Lucia's economy has undergone a degree of structural change in terms of the relative importance of its key economic sectors much like most countries in the Eastern Caribbean Currency Union (ECCU). In this regard the share of services (led by tourism) in the economy has increased over the 2007-2011 period while the key productive sectors, agriculture and manufacturing have declined as a whole (even though the manufacturing sector is the most diverse in the Eastern Caribbean area), resulting in the emergence of a services-oriented economy.¹¹ In contrast the share of tourism (as measured by hotels and restaurants) accounts for 65 per cent of GDP – and is the island's main source of foreign exchange earnings and has shown a steady increase in the share of the economy over the period.¹² However, the downturn in the economies of Europe, UK and the United States has contributed to the more muted growth in the sector through the 2007 to 2011 period and most likely has led to the decline in tourist arrivals of 931 231 in 2012 representing a 6.8 per cent decline from 994 961 arrivals in 2011.¹³

Tourism is Saint Lucia's main source of jobs and income – accounting for 65 per cent of GDP – and the island's main source of foreign exchange earnings. The manufacturing sector is the most diverse in the Eastern Caribbean area.

Saint Lucia has a small domestic market with low levels of urbanization and with economic activity centred on tourism, telecommunications, and domestic retail.¹⁴ The small size of the economy poses several challenges to policy makers.

The absence of natural resources (oil and gas, minerals, forestry) compound economic difficulties as efforts at economic diversification are stymied and the country is forced to continue to rely on a few economic sectors, which in the main provide some form of employment for the young population.

The size of the labour force is also constrained by a small population. Inadequate levels of labour (supply) contribute to the relatively undiversified structure of the economy. This problem is compounded by the varying levels of education and the paucity of opportunities at tertiary level and beyond. Overseas training is expensive and the brain drain of skilled workers from the country is among some of the other contributors to the labour problem.

Emigration can directly influence population growth by changing population levels in different age groups typically with emigration rates of highly educated individuals being higher than the general population.

¹⁰ Central Statistics Department of Saint Lucia – Annual Statistical Digest 2011.

¹¹ For example, Banana exports declined at a rate of 22% CAGR. Central Statistics Department of Saint Lucia – Annual Statistical Digest 2011.

¹² Passenger and Cruise Arrivals have remained steady with a 1.0% increase year over year for the period 2007-2011 although length of stay and room occupancy rates have declined somewhat over the same period.

¹³ Economic and Social Review 2012. Ministry of Finance, Economic Affairs, Planning and Social Security.

¹⁴ Urban population is 17.5% in 2011 with an urbanization rate of 1.4% between 2005 and 2010. United Nations World Urbanization Prospects, the 2009 Revision.

Status of the sector regulation

The Telecommunications Act (the Act)¹⁵, which came into effect on 1 April, 2001, provides the premise and the scope for management of the telecommunication sector in Saint Lucia. The telecommunication sector is regulated by the Electronic Communications Bill, which establishes and defines, inter alia:

- the authority and powers of National Telecommunications Regulatory Commission (NTRC) for regulating the sector including spectrum management;
- requirements for the licensing of telecommunication services and the right to use radio spectrum;
- the Universal Service Obligation on the part of operators and the Fund, itself.

The Act is aimed at allowing a liberalized and non-discriminatory entry into the electronic communications sector and enabling a robust competitive environment in which there is fairness, transparency and accountability on the part of the regulators of the sector.

The Ministerial portfolio of the Public Service, Information and Broadcasting Information including the portfolios of Information and Communications Technology (ICT), E-Government and Telecommunications, is responsible for setting policy governing the telecommunication sector.

The Government of Saint Lucia has also established the Division of Public Sector Modernisation (DPSM) within the Ministry of the Public Service, Information and Broadcasting from April 2012. The DPSM provides leadership, coordination and cohesion to the implementation and monitoring of several key aspects of the modernisation agenda: i.e. strategic human resource management, information and communications technology, e-government, telecommunications, legal and regulatory frameworks, structures, policies and processes.

The following are the primary objectives of the DPSM:

- Assist with the development of the policy framework and the legal and regulatory environment to foster good governance and accountability.
- Provide support to ensure that appropriate systems and processes are in place to optimize the use of the human resource capacity in transforming the operations and improving the levels of the public sector service delivery.
- Application of innovative solutions through the use of ICTs to improve productivity, enhance efficiency and streamline public sector service delivery.

The NTRC is the local regulatory mechanism for the telecommunication sector under the ACT. The NTRC is charged with the mandate to oversee the development of the telecommunication sector in Saint Lucia.

The NTRC functions include but are not limited to advising the Minister on the formulation of national policy on telecommunication matters; receiving and reviewing applications for licences and proposed interconnection agreements between telecommunication providers and advising the Minister accordingly; ensuring compliance with standards, regulations and conditions attached to licences; management of radio frequency spectrum; and investigating and resolving any dispute relating to interconnections or sharing of infrastructure between telecommunication providers; investigating and resolving complaints.

¹⁵ www.ntrc.lc/fck_images/file/Telecommunications%20Act%20No_%2027%20of%202000.pdf

Status of the network, services and competition

Fixed internet subscription growth in Saint Lucia has slowed considerably over the past five years, it reached just 3 per cent per annum in 2012 from a high of 33 per cent in 2008. By March 2012 there were 22 000 internet subscriptions corresponding to a penetration rate of 12.5 per cent. At the same time, the rate for the most basic broadband package was XCD 85 for a 2 Mbit/s connection up from XCD 79 for 1 Mbit/s. This means that XCD 85, which represents 5.4 per cent of monthly GNI per capita in Saint Lucia, is approaching the 5 per cent benchmark for broadband affordability set by the ITU.¹⁶ When compared to the rest of the ECTEL Region, Saint Lucia fixed broadband prices are 20 per cent higher.

Summary of households with service

Fixed	Wireless
48 per cent of households	93 per cent of households

As of July 2013, Lime, (the Caribbean business of Cable & Wireless Communication), has launched 4G HSPA+ mobile data services in Saint Lucia limited principally to the areas of Castries and Rodney Bay. There are no WiMAX operations in ECTEL countries.

Current spectrum allocations and assignments

Spectrum allocated for 2G and 3G services cellular services consist of 900/1800 MHz bands and the 850/1900 MHz bands.

Table 2: Current mobile spectrum assignments

	700 MHz Digital dividend	850 MHz	900 MHz E-GSM	1800 MHz	1900 MHz	2.52-2.69 GHz
Operator	698–746 MHz 746-806 MHz	824-835 MHz 869-880 MHz	880-915 MHz 925-960 MHz	1710-1785 MHz 1805-1880 MHz	1870-1910 MHz 1950-1990 MHz	2500 -2690 MHz
Lime (C&W)	0	22	3	0	15	0
Digicel	0	0	19	12	10	0
Karib Cable	0	0	0	0	0	0
HTS (Spectra)	0	0	13	0	0	50
Unassigned	54	0	0	65	15	120

Source: NTRC, ECTEL and GSMA

Bands allocated for broadband use have been harmonized across the ECTEL region. The bands allocated for provision of international mobile telecommunications (IMT) services on a global basis are: 2.3 GHz, 2.5 GHz, 3.3 GHz, 3.5 GHz, 3.6 GHz, and 5.8 GHz. The Regional Frequency Allocation Table complies with

¹⁶ ECTEL – Annual Electronic Communications Sector Review: Expanding Access to Broadband, 2012.

global allocation trends. So far, frequencies have already been assigned in the 2.3 GHz band for the operation of IMT networks in other ECTEL countries.

Competition

There are three main competitors in the telecommunication market in Saint Lucia:

- Lime (Cable & Wireless Communications) providing fixed and wireless services;
- Digicel providing wireless services;
- Karib Cable providing fixed services.

The fixed line voice telephony market is dominated by the incumbent Lime. Fixed line penetration rates are significantly lower compared to penetration rates of cellular phones. Approximately 48 per cent of households surveyed had a fixed line service whereas 93 percent were in possession of at least one cellular phone. The majority of fixed line subscribers (97%) used the services of Lime. Karib Cable subscribers, a relative new comer to the fixed line market, made up the remaining 3 per cent.

An analysis of the proportion of households with fixed lines by district reveals that Castries Suburban (59 per cent), Laborie (57 per cent), Soufriere (55%) and Gros Islet (55%) had the highest proportion of households with fixed lines while Anse La Raye (29%) and Castries Rural (36%) had the lowest.

Recent statistics on price levels indicate that across 16 Caribbean countries included in the survey of price baskets for low volume (LV), medium volume (MV), and high volume (HV), four including Saint Lucia have shown an increase in prices over the two year period from 2011 to 2013.¹⁷ This is contrary to the usual expectation that prices fall due to competition. See Figure 4.

Some additional observations on price basket levels across the region:

- LV users spend on average USD 13.90 per month, and several countries are within $\pm$ USD 2.00 of that amount – Grenada (USD 11.95), Anguilla (USD 13.48), Saint Lucia (USD 13.96), Saint Kitts & Nevis (USD 14.47), Antigua and Barbuda (USD 14.77), and Saint Vincent and the Grenadines (USD 14.94).
- On the other hand, MV users across the region spend on average USD 32.45 per month, however, it is only Saint Kitts & Nevis (USD 30.52), Anguilla (USD 31.48) and Saint Lucia (USD 32.93) where users spend close ($\pm$ USD 2.00) to that amount.
- HV users across the region spend USD 66.99 on average per month, but there no countries where users spend within $\pm$ USD 2.00 of that amount.

¹⁷ The other three include Grenada, Guyana, and Saint Kitts and Nevis.

ICT price basket statistics

Figure 4: Price basket spend on telecommunications – 16 Caribbean countries

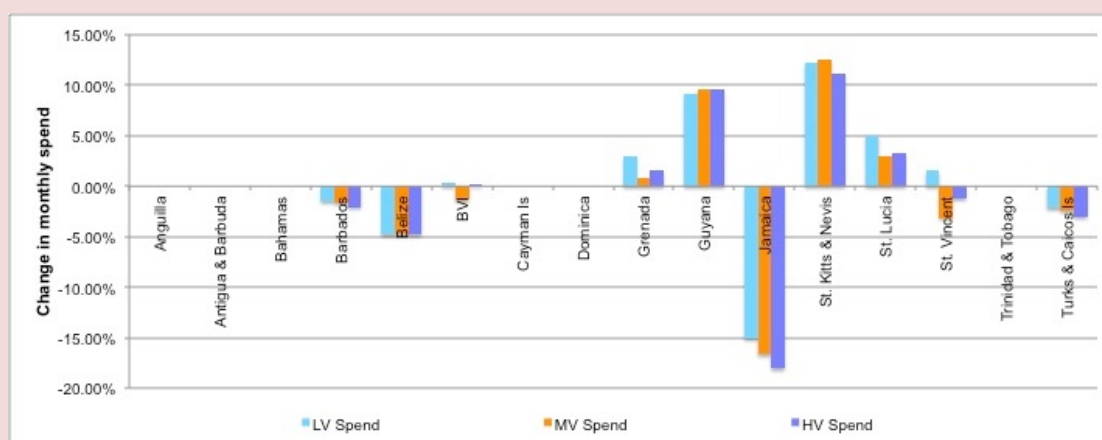


Table 3: ICT Price basket comparison

Country/Region	ICT Price Basket	Fixed	Mobile	Fixed Broadband*	GNI USD	IDI Rank 2011+	IDI Rank 2010
Saint Lucia	3.8	2.1	3.9	5.4	6 560	61	64
ECTEL region	2.83	1.6	2.5	4.4	6 382	62	60
Singapore	0.4	0.2	0.2	0.4	40 070	12	10
Trinidad & Tobago	1.2	1.5	1.2	1.0	15 380	61	60

Given the declining use of fixed lines evident in Saint Lucia and observed in most developed countries and the lack of robust competition evidenced by lowering levels of investment (as opposed to higher levels on new technologies) and rising prices, the competitive environment is not encouraging operators to aggressively pursue broadband strategies. Figure 5 illustrates the significant impact competition has had on increasing broadband penetration.

Figure 5: Penetration boost from competition

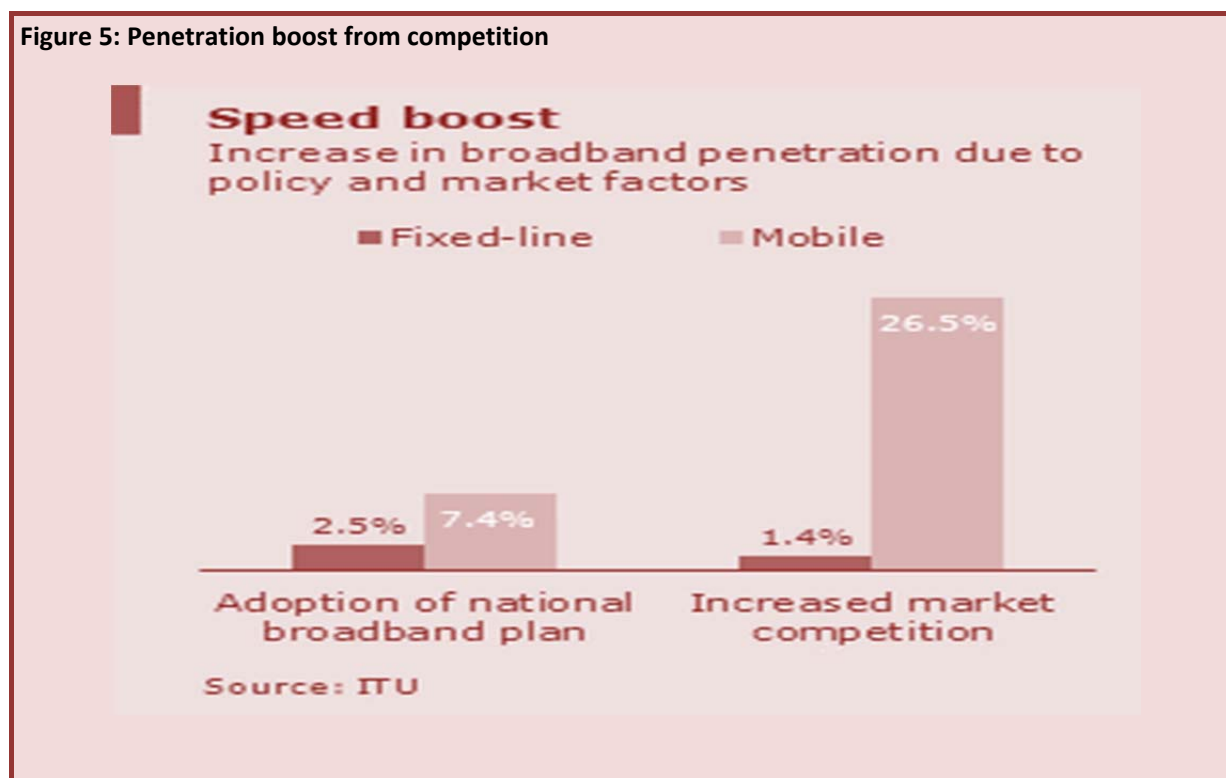


Table 3: Key statistics for Saint Lucia

Selected telecommunication indicators	Saint Lucia	ECTEL region
Population (2012)	162 781	499 186
Mobile telephone population (2012)	216 500	665 800
Mobile penetration – per 100 (2012)	122	124.1
Fixed lines	35 900	123 160
Fixed penetration – per 100 (2012)	22.0	24.67
Internet users – per 100 (2011)	88	57
Fixed broadband – per 100 (2012)	13.82	14.4
Mobile broadband	N/A	N/A
Investment per capita (XCD)	XCD 171	XCD 178
International bandwidth (Mbits)	Two submarine cables GNF= 1.5 TB	

Figure 6: Fixed line subscribers in Saint Lucia

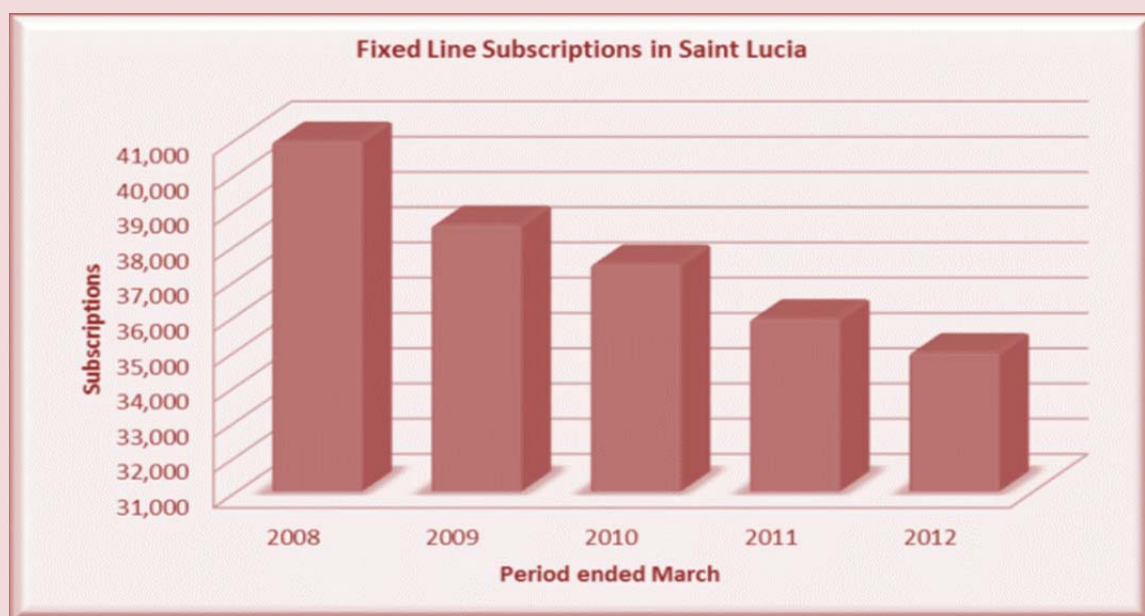
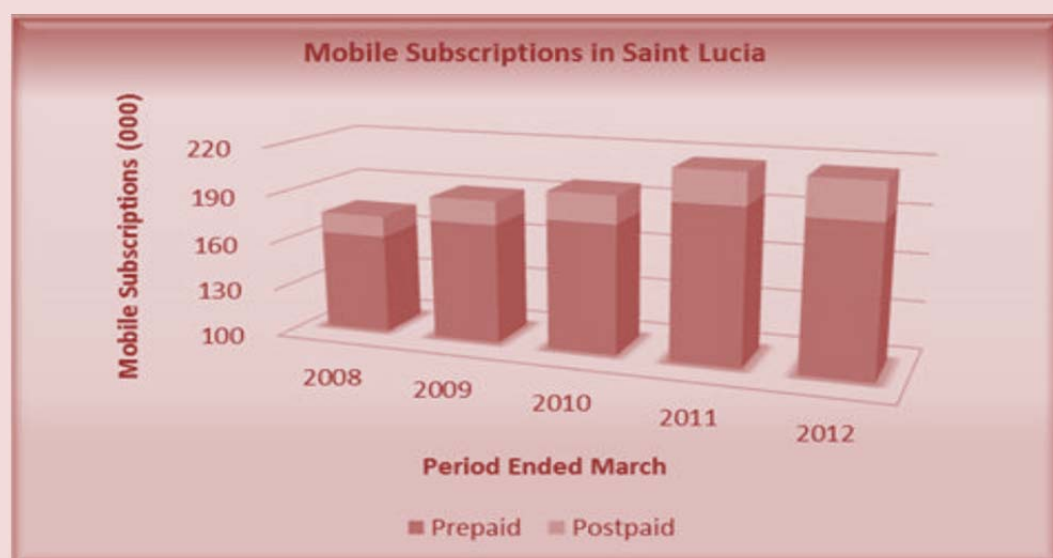
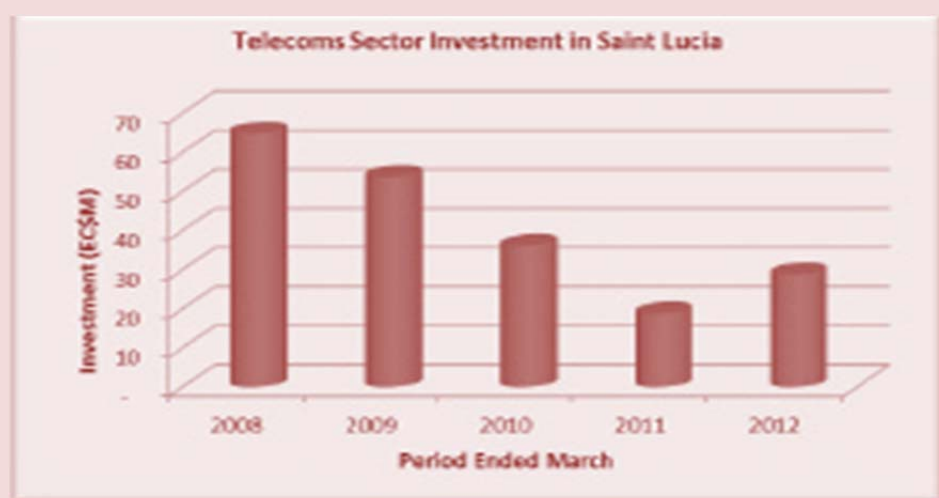


Figure 7.0: Mobile subscriptions in Saint Lucia



Although the Saint Lucia IDI Global Index ranking has slipped marginally, this is not unexpected since many countries that experienced early adoption in the use of ICTs have slipped in the global ranking as less developed and emerging countries adopt ICTs. Of greater significance to Saint Lucia, are two very clear trends: declining subscriptions to fixed lines, which remain the primary form of access to broadband; and declining levels of network investment by operators in Saint Lucia.

Figure 8: Telecom sector investments in Saint Lucia



Statistics for both fixed and wireless penetration in Saint Lucia are in line with comparable statistics for the ECTEL countries.

Status of broadband planning (Government, public and private sector)

As a full member of the OECS regional grouping, Saint Lucia has committed to the OECS vision and clearly defined its national ICT plan accordingly. The National ICT Strategy of Saint Lucia 2010–2015 is a broad, overarching policy-framework and action plan that is intended to guide ICT development over a five year period.

By 2015, the following key outcomes have been set:

- ICTs as an engine of growth for and to build a knowledge-based society for Saint Lucia;
- ICTs to strengthen tourism and agriculture sectors;
- modernisation of public service to improve and enhance the quality of services provided;
- developing the skills and innate innovation of the youth.

Of particular relevance to this Saint Lucia National Broadband Policy and Plan 2013–2018 are a number of sub-components within the ‘strategic thrusts’ of the OECS plans that will have implications for the Saint Lucian broadband policy. These include, inter alia:

- creating a conducive environment where businesses can grow leveraging ICT;
- ensuring affordable broadband access for every member of the community;
- ensuring affordable and seamless e-services, content and applications;
- improving broadband connectivity; and
- reviewing universal service obligations and similar policies.

Broadband planning example in the education sector

Broadband strategy: Education

According to the National ICT Strategy of Saint Lucia 2010-2015, Saint Lucia has 105 schools which includes 75 kindergarten and primary schools, and 24 secondary schools. About 3 000 students graduate from the secondary schools each year and about 20 per cent attend the Sir Arthur Lewis Community College in Saint Lucia.

The Ministry of Education has about 1 400 PCs that are utilised by administrative staff and in computer laboratories. By the start of 2009, all schools were provided with Internet access by local ISPs at no cost to government. Unfortunately, Saint Lucia suffers from a significant shortage of ICT trainers and teachers, as well as institutions providing ICT-related education. In response, policy makers have focused on the development of ICT skills in schools. There are currently several initiatives underway aimed at incorporating ICT in the teaching and learning process, developing the ICT skills of teachers, and building the institutional capacity for managing ICT in education.

Today: The Smart Education Programme addresses the need to incorporate ICTs in the educational system, within the classroom, into administrative functions, and to facilitate the information sharing and the policy / decision making involved in the management of the education and focuses on ICTs in the classroom, in management, and the creation of an Education Portal.

Future Direction: Today's job market is more competitive than ever and digital skills i.e., knowledge of and use of the Internet is critical for employment. The government will work together with the private sector and philanthropy through a new broadband education programme called Connect A School (CAC) (www.connect2compete.org) to help close the digital divide and the skills gap by making high-speed Internet access, computers, educational and jobs content, and digital literacy training more accessible at low cost and or free of charge depending on the economic circumstance of the individual. No person is to be left behind whether an adult or child, working or unemployed, living in the city or any rural area.

Policy: The government in partnership with other key stakeholders including telecommunication operators will provide to eligible families (under the Connect A School (CAC) Programme) discounted monthly broadband Internet rates by as much as 50 per cent, low cost laptop or desktop refurbished computers costing as little at USD 200, and free digital literacy training.

Saint Lucia broadband policy framework

- National ICT Strategy of Saint Lucia 2010-2015
- National Electronic Commerce Strategy and Action Plan 2012-2015
- National Broadband Policy and Plan 2013-2018
- Capacity building
- Draft ECTEL Broadband Policy and Plan

Key elements within these plans and strategies include goals, vision and action plans.

Goals

The aim (or goals) of the ICT policy is to ensure that the following four outcomes are achieved:

1. Effective governance and extensive e-service delivery.
2. Significant economic growth with creation of new job opportunities.

3. Improved health and well being of citizens.
4. Enhanced levels of information literacy and innovation among citizens.

Vision

The vision statement contained in The National ICT Strategy published in January 2010 is to:

Improve the quality of life in Saint Lucia by embracing ICTs to promote development, innovation and global competitiveness thereby enabling sustainable social and economic growth.

Action plans

Saint Lucia is pursuing several programmes and projects to achieve national ICT vision and goals over the next five years in key sectors such as tourism, business, government, agriculture, community and social development, and national security. Key infrastructure improvement projects have also been identified in education and health sectors. Several of these projects are described in more detail below. See also Annex 1.

Tourism – One Saint Lucia programme

A key element of this programme would be the review and updating of the policy and regulatory framework that underpins this sector – including policies on data sharing and adoption of ICTs by small and medium enterprises.

Business – ICT ‘In’ and ‘As’ business programmes

Such programmes include the development of legislation and regulations in the areas of e-commerce, consumer protection, cyber crime, intellectual property protection and electronic transactions, and seek to enhance the export capabilities of the business community.

This includes the role of government in the strategic outsourcing of public sector ICT work as a mechanism to stabilise and build the capability and capacity of the sector, and focuses on building a local market for ICT products and services to provide a base for sector growth, as well as providing comprehensive international marketing and ICT research focussed on emerging island states through the strategic use of ICTs.

Government – eGovernment

This programme, funded by the World Bank, involves projects such as the Caribbean Regional Communications Infrastructure Program (CARCIP) which seeks to assess and upgrade the current e-government infrastructure, such as the government backbone, with a view to providing cost-effective facilities that allow cross-agency sharing and collaboration.

CARCIP puts emphasis on connectivity and an ICT-related intervention at the regional and national level with the ultimate objective of promoting well-integrated regional networks. There are three components within the Saint Lucia project and the corresponding funding for the effort is:

- Connectivity - 3.5 million USD
- ICT led innovation - 1.76 million USD
- Implementation support – 740 000 USD

Agriculture – Agricultural information and integration programme

This key programme involves the provision of greater access of information by the Saint Lucia community to facilitate sustainable development of the agricultural sector and to improve the information flow among agricultural agencies, supply chain partners and other stakeholders. This involves strengthening and extending Saint Lucia Agricultural Resource Information System (SLARIS), the national agricultural

information system, which was established to serve the agricultural industry in Saint Lucia. There are other projects such as forestry and fisheries information systems, production and marketing information systems, etc.

Infrastructure – Education connected schools programme

The Smart Education Programme addresses the need to incorporate ICTs in the educational system, within the classroom, into administrative functions, and to facilitate the information sharing and the policy / decision making involved in the management of education, and it focuses on ICTs in the classroom, in management, and the creation of an Education Portal.

Infrastructure – Health

This programme is designed to exploit ICT-enabled mechanisms to promote quality health care delivery and management and includes the enhancement of the Health Management Information System (HMIS) that will generate the information needed by policy makers and health service users to make health care delivery more effective and efficient.

ECTEL broadband policy (draft)

ECTEL has drafted a guidance document which describes the process, key steps and elements of a broadband policy and plan for ECTEL partners. This document – Saint Lucia National Broadband Policy and Plan 2013-2018 – is intended to be entirely consistent with the ECTEL guidance document. The ECTEL document is more descriptive than prescriptive in nature, suggesting policy goals, objectives and strategies, whereas the Saint Lucia policy document needs to set targets and timeframes.

Assessment – Driving broadband penetration and use

Mobile and fixed telephony, while essential, are now considered inadequate to meet society and commercial needs. Internet access, that is broadband Internet access, is now regarded as an essential basic infrastructure for society and the economy. A large and growing number of citizens depend on the Internet and access to mass-market data communication services as part of their social lives and economic lives.

Why does Saint Lucia need a broadband policy?

Saint Lucia and partners across the East Caribbean region must continually take advantage of technological developments in spectrum use and facilitate spectrum access in order to promote and facilitate growth. We have witnessed how China became the new “workshop of the world” with the transpacific “conveyor belt” provided by breakthroughs in containerization after the 1970s and how India became a new global services hub with the invention of fibre optics and broadband. These technological forces are profoundly changing the nature of the global economy and with it the political, social and institutional structures needed to sustain and legitimize it.

Significant progress in expanding Internet access is being made and yet, the digital divide stubbornly persists. Quicker adoption and use of broadband as essential basic infrastructure will not occur unless there is adequate and timely availability of network resources and spectrum and supporting regulatory provisions as pre-requisites for supporting future growth of broadband systems.

What should the national broadband policy and plan do?

Three main objectives in developing the national broadband policy and plan are to:

1. Summarize an assessment of existing policy and regulatory frameworks with a view to facilitating deployment of broadband technologies (fixed and wireless) taking into account convergence trends.

2. Assess current economic and social determinants such as user demand and take up for broadband applications, content and services and identify policies, regulations and actions plans to stimulate supply and demand.
3. Identify key policy and regulatory instruments including licensing, spectrum access/interconnection, deployment of new technologies, rollout of obligations, incentive based regulation, infrastructure sharing, universal service obligations and to promote broadband wireless services vis-à-vis identified national priorities and international best practices.

Summary of the broadband issues survey

Stakeholders from government departments, regulators, operators, NGOs and civil society were included in a survey of goals, objectives and issues connected with broadband policy and services, such as ease of access to spectrum and availability and affordability of services.

Interviews

A series of interviews were conducted involving leading government departments, operators and other stakeholders from education, health and research. A number of key areas were identified for promotion, facilitation and improving access and use of broadband technologies in Saint Lucia have been identified. These areas are described in the next few paragraphs.

Areas requiring further strengthening

1. Government framework, organization and procurement. The government recognizes the need to develop a coordinated approach to promote and facilitate investment, maximize expenditures, and the broad use of broadband throughout society and in the economy. The chief outcome of the coordinated approach utilizing centralized direction and management for ICT and broadband programming, expenditure and procurement across government departments and agencies would be optimal strategies achieving economies of scale and more efficient and timely implementation.
2. Improving competition. Use of fixed lines is declining in Saint Lucia as evidenced elsewhere in developed economies as well as lower levels of investment (as opposed to higher levels on new technologies), which are accompanied by rising prices for telecommunication services, indicates the competitive environment is deteriorating and is not serving to encourage operators to aggressively pursue broadband strategies.
3. Fiscal arrangements – tariffs and taxes. Tariffs and taxes on communication equipment and devices remain high even though telecommunications are considered a universal access right. Current rates of duties and surcharges on cell phones approximate an additional 25 per cent the landed cost. Minimizing tariffs and taxes will lead to increased usage, quicker adoption and ultimately higher revenues for government.
4. Regulation: spectrum access, availability, prices and competition monitoring. The ECTEL Regional Spectrum Management Plan currently allocates the 700 MHz band (television broadcasting channels 52 (698 MHz) to 69 (806 MHz)) to the broadcasting service. At present there are no frequencies assigned in the band to any operator in the ECTEL Member States. The band is therefore available for assignment without restriction. A moratorium is presently in effect on the assignment of any frequencies in the band. ECTEL has promulgated a policy on the band, which will be used for broadband wireless service with a portion being designated for public health and safety services. By also applying the principle of technology neutrality, providers will be able to deliver any broadband service on the band using any technology of

their choosing after they have obtained a licence for the service and obtained the requisite frequency authorizations.¹⁸ Amendments and revisions to the Spectrum Regulations and Spectrum Fees Regulations are to be incorporated, at some future date.

The Telecommunications Act authorizes the National Telecommunication Regulatory Commission (NTRC) to monitor the market-place for anti-competitive behaviour and to advise the national body responsible for the regulation of anti-competitive practices which is the Ministry of Consumer Affairs. The Ministry is responsible for the administration of competition policy; however its authority to prosecute is circumscribed to a limited extent of national law. Adjudication of matters arising under the Act is done by the Courts. The Act does not provide for any institution or body to monitor acts, approve mergers and acquisitions, or conduct other inquiries. Only civil remedies may be obtained under the Act. Sharing of network infrastructure, access to services, and interconnection are critically important in promoting competition in services and prices. Access to ultra-high capacity submarine cable capacity such as the GCF submarine cable is one such issue vitally important to all operators contemplating deployment of broadband.

5. Other regulatory issues in addition to those noted above include infrastructure sharing, which is currently being reviewed by ECTEL in the Electronic Communication Bill, securing the digital dividend, and tariff regulation for wholesale wireless broadband services.

The NTRC and ECTEL should facilitate the creation of an enabling environment and gradual reliance on market mechanisms needs to be reinforced. This includes ensuring that a predictable and transparent regulatory framework is created, and quarterly quality of service (QoS) statistics should be collected from operators and then published to policy makers and regulators with relevant data and information needed to mark progress towards policy, and to plan goals.

6. Universal Service Obligation and Universal Service Funds. The Electronic Communications Act identifies access to the Internet as a universal service. Access to broadband is not identified as such nor is broadband defined. To put significant emphasis on the deployment and use of broadband it must be included in the definition of Universal Service and adequately described.

The Universal Service Fund (USF) is managed by the NTRC. There have been proposals to the USF manager for funds to support deployment of broadband in schools. It is apparent that few, if any, projects have been approved since the fund was established. To support both demand and supply initiatives the USF should be used much more extensively with focus on broadband.

7. Government as a user. The government is the single largest user of ICT equipment and services in the country, and should exercise its important influence and spending power to promote the use of broadband. The budget and control of expenditures by government on ICTs and broadband should reside in a central agency to effect better efficiency and economy in reaching government goals in the use of broadband as an enabler and its penetration into the broader economy.

8. Private Sector

- a. Operators have a dominant focus on the use of existing networks to provide service. Broadband services are accessed primarily through fixed lines. The service is expensive relative to other services and the use of fixed lines is declining. The likely scenario is that higher income groups and more internationally focussed businesses (tourism, banks,

¹⁸ ECTEL – Policy on the allocation and assignment of frequencies in the 700 MHz band, May 2013.

The focus needs to shift to more cost effective means of delivering broadband using wireless with a technology neutral approach maximizing both licensed and unlicensed spectrum.

- ## Key considerations in setting Saint Lucia national broadband policy and plan priorities

The Saint Lucia spectrum management policy framework must express the social, economic and sector development imperatives of the country recognizing the rapid pace of technological innovation. It must ensure that in harmony with national and regional telecommunication markets they operate effectively to offer all citizens affordable access to the full range of telecommunication services available from wireless technologies. In addition, the proposed framework must address the issues Caribbean nations face in deriving maximum benefit from the explosion in wireless technologies under the Caribbean Single Market and Economy (CSME). The framework should propose to:

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- 21

Promotion of competition

From the review of the existing policy and regulations, there are two major areas where changes should be made. These are:

1. Migration from the legacy spectrum management approach to a more flexible use model. This means a flexible use model with spectrum trading rights and mechanisms which allocate spectrum to their best use. In this context part of the challenge is managing the transition.
2. Permitting technology neutral licensing and spectrum use. The core basis of a technology neutral spectrum is that any service should be provided through any kind of technology in any frequency band, and the use of spectrum can be changed at any time. That is, the actual use of the spectrum is not specified.

For example, in Australia, spectrum licences can be used with any technology and for any use so long as emission limits are observed. Examples include W-CDMA utilizing the 900 MHz and LTE utilizing the 1800 MHz bands.

The key elements of technology neutral spectrum licences are that licensees:

- can use any technology to provide any service in any frequency band, and the use of the radio frequency spectrum can be changed at any time;
- must observe emission limits; and
- must manage interference (both in-band and out-of-band interference) between radiocommunication devices and services operating under other licences in the radio frequency spectrum bands.

Regarding the migration under (i) it is important that Saint Lucia embrace a strong set of spectrum management principles in its dealings with industry, consumers and other internal stakeholders.

Future broadband policy plan

Saint Lucia does not have a separate broadband development policy and broadband is indirectly covered in the policies relating to network infrastructure, technology of providing services, and contents for socioeconomic development, most of which are reflected in existing legislation and or ICT regulations.

There are three main considerations in setting the Saint Lucia national broadband policy and plan priorities:

1. Supply side policy initiatives to support broadband.
2. Demand side policy initiatives to support broadband.
3. Machinery of government initiatives to support broadband.

Each of these broad elements is further defined by specific actions which are described below including discrete targets and timeframes, where applicable.

Supporting broadband through supply side policy initiatives

- Identify strategies to promote competition including licensing of a new entrant, auction of spectrum, and strengthening the regulatory system to reduce anti-competitive barriers.
- Utilization of the USF: Disperse 50 per cent of USF funds by 2015 on broadband initiatives auctioned by the private sector.
- Facilitate roll-out of mobile broadband: Make spectrum and appropriate unified service neutral licences available by 2014 and license broadband spectrum in 2015.
- Improve spectrum access and availability: Issue band plans and assign spectrum in the 700 MHz, 2.5-2.69 GHz bands by 2015.

- Mandate infrastructure sharing and mobile virtual network operators (MVNO): Modify licences to mandate MVNOs on broadband infrastructure by 2015.
- Reduce the cost of equipment through fiscal measures: Reduce tariffs and excise taxes on equipment and devices.

Supporting broadband through demand side policy initiatives

- Facilitate use of existing broadband infrastructure by small and medium enterprises.
- Government as a broadband first user in services, health and education. Government should take the lead in developing and deploying online/wireless services. If there exists good access to bandwidth and devices, online and wireless delivery can be a highly cost effective means to provide information about government services and some of the services themselves in a much more equitable manner. Initiatives should not be limited to the national government: municipal government and agencies can provide important and useful information to local residents and businesses.
- Partnering with the private sector on key initiatives – Caribbean Regional Communications Infrastructure Program (CARCIP).
- In order to improve the supply of broadband including content, financial tools such as direct outlays and tax measures will be employed by the government. Each tool possesses unique policy design issues that must be properly addressed prior to implementation. Measures would include reducing the cost of devices by lowering relevant tariffs and taxes by 40 per cent by 2014. Current duties and surcharge excluding VAT add 25 per cent to the landed cost of cell phones whereas there is not duty or VAT on computer equipment such as laptops¹⁹.
- Implementing an OECS coordinated action plan for procurement matters on related to broadband initiatives.
- Initiating and funding broadband entrepreneurial programmes and innovation olympics and encourage corporate support.
- Research and development effort focused on collaborative use of broadband technologies.
- Awareness and education on strategies, progress, successes and opportunities.

Machinery of government initiatives to support broadband

- Setting targets for broadband roll-out (wireless) and penetration (fixed and wireless) and increasing broadband capacity.
- Financing the broadband policy and plan: Using the USF.
- Centralized focus in government on ICT strategies, projects and management. Begin by combining and centralizing ICT planning and strategy.
- Centralized broadband and ICT procurement with emphasis on creating opportunities for broadband. Begin by combining and centralizing ICT and broadband planning to achieve purchasing efficiencies.

¹⁹ Cell phones are subject to duties and surcharge similar to luxury watches even though cell phones are an integral part of the Universal Service Offering.

Supporting development of content creation and education by funding venture capital programmes in Saint Lucia through economic development agencies such as the Saint Lucia Development Bank and the Caribbean Development Bank. The relationship between applications/content and broadband uptake is highly synchronous. Rapid penetration of broadband services reinforces the demand for more data and content rich applications; whilst the more attractive and relevant applications and content are to consumers, the more willing they are to participate in the market.

There are a number of initiatives the government can support in creating an enabling environment for content production industries and ultimately drive demand for their services.

- The government can work to develop and stimulate the domestic content sector by educating the national ICT workforce with the set of skills and outlook that are necessary for the requisite innovation and technical expertise required for the market to expand.
- New courses at existing technical/educational institutions will be developed so as to encompass issues associated with applications/content.
- The government can train teachers/trainers with a range of input skills for content production (e.g. graphic design, animation, information technology).

Proposed broadband policy statements

Setting priorities and implementing policies to promote and expand use of broadband technologies should fall within a three phased framework. Policy priorities should be restricted to those high impact transformative policy initiatives. Action plans should be developed to support key government broadband policies. Policies should be earmarked with overall funding and individual projects should be managed within an accountability framework where responsible ministries and departments are identified along with funding, targets and timeframes.

Phase I: Policy statements – 1-3 years

Policy priority 1

Mobile broadband services should be provided to 50 per cent of the population of Saint Lucia commencing in 2016 with extensive rural coverage by 2018.

The Ministry and the NTRC should promote and facilitate roll-out of mobile broadband services in Saint Lucia by making IMT spectrum (especially 700 MHz spectrum) and appropriate unified service neutral licences available to operators on an accelerated basis prior to 2016. The 700 MHz spectrum band is a key enabler for the provision of the latest wireless services (mobile broadband) in Saint Lucia and the licensing of these new service providers is a priority of the government that will ensure the latest wireless services are delivered to a high percentage of the population including rural areas and that the licensing of services is not unduly delayed. Other bands such as 2.5-2.69 GHz and 2.3 GHz shall be given similar emphasis in setting licensing priorities.

Band and spectrum assignment planning should be completed in 2014 and licence(s) should be issued for mobile broadband spectrum services in 2015.

Band plans should also be prepared as a basis for assigning service and spectrum licences for in the 700 MHz, 2.5-2.69 GHz bands by 2015.

Conditions for incumbent mobile broadband licences will ensure that the latest services are delivered to a high percentage of the population and rural areas - 50 per cent of the existing covered population within two years and 90 per cent of rural population in three years (new entrants will be permitted to meet coverage requirements on a deferred basis, e.g. in five years for rural areas).

Regulations governing access to sites, infrastructure sharing and roaming arrangements are to be reviewed for effectiveness and modified as required.

Policy priority 2

Establish the new ICT Government Operating Agency in 2015 to facilitate more focussed and cost effective ICT/broadband programme delivery by creating centralized and coordinate programme strategy and funding for government within the special purpose agency.

Government has a leadership role as a broadband first user in the delivery of government services, health, and education. To maximize the value of money and effort, there is a need to establish a centralized focus in government on preparation of coordinated and effective ICT/broadband strategies, projects and management of human, financial, and technical resources. This should start by combining and centralizing ICT planning and strategy and ICT procurement to achieve purchasing efficiencies with emphasis on creating local commercial opportunities for broadband.

The government will create a central agency responsible for planning, acquiring and operating ICT services governed by service level agreements on behalf of government users with particular focus on making government a primary first user and leader in broadband enabled services to the public leading to accelerated delivery of more effective lower cost programmes.

Policy priority 3

Facilitating access to devices and lowering investment costs by reducing the cost of broadband equipment and devices for consumers and operators.

The government will examine fiscal measures such as tariffs and excise taxes and VAT as they apply to telecommunication equipment and devices with the intention of reducing them to encourage greater use of broadband telecommunication services. The review will be completed in 2014 and new fiscal measures introduced by 2015 with a goal of reducing the cost of devices by lowering relevant tariffs and taxes by 40 per cent by 2015.

Duties and taxation impose costs on operators and telecommunication equipment suppliers that translate into higher costs for investment and operations. Current duties and surcharges excluding VAT add 25 per cent to the landed cost of cell phones whereas there is no duty or VAT on computer equipment such as laptops. It is also well understood that a reduction in VAT on cell phones and packages stimulates increased penetration and usage.

Phase II: Policy statements – 4-5 years

Policy priority 4

Promoting and facilitating competition in the telecommunication sector to broaden coverage, encourage investment, and improve penetration of broadband services in a competitively priced market place. Strategies to promote and foster competition will include initiatives on four fronts:

1. Dismantling of further regulatory barriers to entry and competition to permit additional players into the market, under non-restrictive conditions.
2. Ensuring new entrants have equitable access to scarce resources which are initially controlled by dominant players, among which the radio spectrum, and sites and rights of way being the most critical.
3. Promoting effective development of competition facilitating new entrants to access the incumbent infrastructure sharing on cost-based wholesale price. This places interconnection and access to international capacity between new and established operators at the centre of the competition agenda.
4. Increasing vigilance against anti-competitive behaviour, particularly by dominant providers such as cross-ownership among operating companies (e.g. fixed-line and submarine cable), limitations on resale, conditioning of sales.

Policy priority 5

Local content creation should become an important engine for economic growth, social cohesion and drive increased exposure to ICT and broadband use.

The government shall support development of content creation and education by first conducting a consultative study to understand and evaluate the conditions and requirements for supporting content development in Saint Lucia.

Key questions to be answered in the study include:

- How large is the content creation industry in Saint Lucia?
- Are courses available at education institutions which aid or encourage content creation and provide the skills necessary for this?
- What is the level of investment in this area?
- Does the ICT sector receive any investment from the perspective of labour training and job creation to support content creation?
- What should be the appropriate competency and skill measures and standards/certifications for Saint Lucia?
- Should the government subsidise local content production and how?
- What content is available in local languages (i.e. beyond English etc.)?
- Does the government encourage development in the key content areas of mobile network services, online games, online advertising and e-commerce?

The study should be completed in 2015 and action plans and funded strategies in place by 2016.

Conclusion

The Saint Lucia Government has mapped out a national ICT strategy showing the way to a knowledge-based society and economy over the next few years. Broadband is a key enabler needed to fulfil this vision. Despite the high mobile penetration, there is still much to be done before realizing the government vision for economic and social development through the ICT sector.

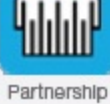
Substantial readjustment in investment priorities, convergence, price and cost cutting measures and leadership are critical components, apart from new measures to encourage public private partnerships initiatives as a new funding mechanism by which broadband will help fulfil the ICT vision.

In this regard, a number of new broadband initiatives are being developed focusing on the demand and supply side of the service including policy, regulations and other stimulants. Special emphasis should be placed on wireless telecommunication for which spectrum management and the transition from analogue to digital all gain special attention in this master plan.

Annex 1: Saint Lucia Government ICT programmes and projects – 2013

SECTOR	PROGRAMMES & PROJECTS	
Tourism	'Virtual Saint Lucia'	
	'One Saint Lucia'	
ICT Infrastructure	Infrastructure Upgrade	
	e-Government Infrastructure	
	ICT Refurbishment	
Education	Connected Schools	
	Smart Education	ICT in Education
		Education Management
		Education Portal
Health	e-Health Administration	
Business	'ICT-in-Business'	
	'ICT-as-a-Business'	
Government	Multichannel Service Delivery	Integrated Citizen Contact Centre: (311/911/999)
	e-Government	Institutional Strengthening
		Stakeholder Engagement
		Portal
		Process Redesign/Reengineering
		Information Management & Digitisation
		Legislation and Policy
Agriculture	Agricultural Information and Integration	Forest Information Management System
		Production and Marketing Information System
		Livestock & Crops Quarantine Information System
		Fisheries Information Management System
		Pest and Disease Surveillance Information System
		Water Resource management Information System
		Bio-diversity Clearing House
		Crop Production Monitoring & Market Research
		Crop Import License System
		Training and Development Project
Community Development & Social Services	Community Access	
	Community Portal	
National Security	'Integrated National Security'	

Annex 2: Broadband and Millenium Development Goals

 End Poverty & Hunger	A growing body of evidence suggests that broadband can boost GDP and income, helping combat poverty and hunger. Research by the World Bank suggests that a 10% increase in broadband penetration could boost GDP by 1.38% in low- and middle-income countries. Country case studies suggest a strong impact of fixed and/or mobile broadband in individual countries, depending on their economic structure – e.g., in the Philippines (see Annex 1).
 Universal Education	Governments and NGOs are providing schools with PCs to foster a sound primary education². In Senegal, a survey found 27.8% of school pupils reported they had acquired better knowledge, and 6.5% understood lessons better with content from ICTs³. High-quality electronic content curricula can improve educational outcomes⁴. Portugal and Uruguay have launched programmes to provide students and teachers with laptops as a basic tool for improved education. The Jokko m-education program builds literacy for women and girls through SMS in Senegal.
 Gender Equality	In India, the Azim Premji Foundation works using computers as an inducement to keep children in schools⁵, particularly girls, whom they find have 20% lower literacy⁶. Various studies have reported that men and women use ICTs differently, e.g., in Senegal, women use ICTs to access information while men prefer communication with friends and family members⁷. For mobile telephony, GSMA has estimated that closing the mobile gender gap would increase revenues for mobile operators by US\$ 13 billion (Chapter 5)⁸.
 Child Health	ChildCount+ is a community health reporting and alerts platform aimed at empowering communities to improve child survival and maternal health⁹. It helps community health extension workers register children under five to monitor their health status, including screening for malnutrition every 90 days, as well as monitoring immunizations, malaria, diarrhoea and pneumonia¹⁰. It integrates with existing health information systems to help experts analyze data on child health more rapidly to improve treatment.
 Maternal health	ChildCount+ registers pregnant mothers and provides support for antenatal care, such as the launch of a software module in Ghana in August 2011 aspiring to reduce mother-to-child transmission of HIV¹¹. Hospitals connected via broadband networks are also enabling remote diagnosis and support for maternal health. WE CARE Solar in Nigeria provides healthcare workers and midwives with mobile phones and reliable lighting using solar electricity to facilitate safer deliveries of babies.
 HIV/AIDS	Bozza is an online platform which shares content (music, video, poetry etc.) from across Africa. This app uses data-intensive mobile services to raise awareness about AIDS and condom use and create job opportunities in South Africa, Nigeria, Kenya and Tanzania¹². In South Africa, the Praekelt Foundation uses an open source SMS TxtAlert system to remind HIV patients about appointments and track which patients miss them or ART medication pick-ups. However, the project faces challenges in expanding to clinics without digitized electronic databases outside Johannesburg¹³.
 Environment	Smart grids can significantly reduce energy consumption through improved heating, cooling and monitoring technologies¹⁴. Broadband can reduce energy and water consumption through a range of technologies such as smart transportation and logistics, smart grids and meters, smart buildings, use of video conferencing and dematerialization. Smart use of ICTs can reduce greenhouse gas (GHG) emissions by up to 25%¹⁵. Mobile technology alone could lower GHGs by 2% by 2020¹⁶.
 Partnership	The benefits of new technologies, especially ICTs, should be made available in cooperation with the private sector¹⁷. In conjunction with public sector policy leadership, the private sector has driven expansion in the markets for fixed and mobile broadband. The market for mobile broadband has been driven by competition and private sector investment in many countries.

Annex 3: Core spectrum management principles²⁰

Core principles should guide policy makers, regulators and ultimately users of radio frequencies in the management of spectrum. Best practice core principles include the following:

- Spectrum should be allocated to the highest value uses or uses to ensure maximum benefits to society are realized.
- Mechanisms should be put in place to enable and encourage spectrum to move to its highest value use.
- Greater access to spectrum will be facilitated when the use the least cost and least restrictive approach is chosen in achieving spectrum management goals and objectives.
- To the extent possible, regulators and spectrum managers need to promote both certainty and flexibility.
- Balance the cost of interference with the benefits of obtained from greater spectrum utilization.
- Harmonized spectrum use with international and regional allocations and standards will reap additional benefits in terms of access and economies of scale and should be pursued, except where Moldova's interests warrant a different determination.

²⁰ Framework Directive 2002/21/EC as amended by Directive 2009/140/EC. The delegates to the ITU Global Symposium of Regulators (GSR) in 2005 similarly drafted a set of best practice guidelines for spectrum management to promote broadband access.

Acronyms and definitions

ECTEL	Eastern Caribbean Telecommunications Authority
GDP	Gross domestic product (GDP) is the aggregate value of all final goods and services produced within the domestic territory of a country during a year. Gross domestic product at factor cost includes depreciation of capital assets. GDP per capita is often viewed as an indicator of a country's standard of living .
ICT	Information Communications Technologies encompassing the full range computers and telecommunication equipment and devices capable of receiving/sending and manipulating data.
ITU	International Telecommunication Union
LTE	Long term evolution for mobile services: the standard is developed by the 3GPP (3rd Generation Partnership Project) and is specified in its Release 8 document series, with minor enhancements described in Release 9.
USF	Universal Service Fund refers to the Fund established in the Electronic Communications Act. Pursuant to section 44 of the Telecommunications Act [27 of 2000], there shall be established a Fund to be known as the Universal Service Fund, which Fund shall be managed by the Commission in accordance with the Telecommunications (Universal Service Fund) Regulations SI 120 of 2008.
Telecommunications Act	The Telecommunications Act 2000 was passed on November 22, 2000 and came into effect on April 1, 2001. It provides the premise and the scope for the management of the telecommunications sector in Saint Lucia and also established the National Telecommunications Regulatory Commission, (The Commission) the local agency charged with overseeing the regulations development of the sector.
SLARIS	Saint Lucia Agriculture Resource Information System

International Telecommunication Union (ITU)
Telecommunication Development Bureau (BDT)
Office of the Director
Place des Nations
CH-1211 Geneva 20 – Switzerland
Email: bdttdirector@itu.int
Tel.: +41 22 730 5035/5435
Fax: +41 22 730 5484

**Deputy to the Director and
Director, Administration and
Operations Coordination
Department (DDR)**
Email: bdtdeputydir@itu.int
Tel.: +41 22 730 5784
Fax: +41 22 730 5484

**Infrastructure Enabling
Environmment and
e-Applications Department (IEE)**
Email: bdtiee@itu.int
Tel.: +41 22 730 5421
Fax: +41 22 730 5484

**Innovation and Partnership
Department (IP)**
Email: bdtip@itu.int
Tel.: +41 22 730 5900
Fax: +41 22 730 5484

**Project Support and Knowledge
Management Department (PKM)**
Email: bdtpkm@itu.int
Tel.: +41 22 730 5447
Fax: +41 22 730 5484

Africa

Ethiopia
**International Telecommunication
Union (ITU)**
Regional Office
P.O. Box 60 005
Gambia Rd., Leghar ETC Building
3rd floor
Addis Ababa – Ethiopia

Email: itu-addis@itu.int
Tel.: +251 11 551 4977
Tel.: +251 11 551 4855
Tel.: +251 11 551 8328
Fax: +251 11 551 7299

Cameroon
**Union internationale des
télécommunications (UIT)**
Bureau de zone
Immeuble CAMPOST, 3^e étage
Boulevard du 20 mai
Boîte postale 11017
Yaoundé – Cameroon

Email: itu-yaounde@itu.int
Tel.: + 237 22 22 9292
Tel.: + 237 22 22 9291
Fax: + 237 22 22 9297

Senegal
**Union internationale des
télécommunications (UIT)**
Bureau de zone
19, Rue Parchappe x Amadou
Assane Ndoeye
Immeuble Fayçal, 4^e étage
B.P. 50202 Dakar RP
Dakar – Senegal

Email: itu-dakar@itu.int
Tel.: +221 33 849 7720
Fax: +221 33 822 8013

Zimbabwe
**International Telecommunication
Union (ITU)**
Area Office
TelOne Centre for Learning
Corner Samora Machel and
Hampton Road
P.O. Box BE 792 Belvedere
Harare – Zimbabwe

Email: itu-harare@itu.int
Tel.: +263 4 77 5939
Tel.: +263 4 77 5941
Fax: +263 4 77 1257

Americas

Brazil
**União Internacional de
Telecomunicações (UIT)**
Regional Office
SAUS Quadra 06, Bloco “E”
11^o andar, Ala Sul
Ed. Luis Eduardo Magalhães (Anatel)
70070-940 Brasília, DF – Brazil

Email: itubrasilia@itu.int
Tel.: +55 61 2312 2730-1
Tel.: +55 61 2312 2733-5
Fax: +55 61 2312 2738

Barbados
**International Telecommunication
Union (ITU)**
Area Office
United Nations House
Marine Gardens
Hastings, Christ Church
P.O. Box 1047
Bridgetown – Barbados

Email: itubridgetown@itu.int
Tel.: +1 246 431 0343/4
Fax: +1 246 437 7403

Chile
**Unión Internacional de
Telecomunicaciones (UIT)**
Oficina de Representación de Área
Merced 753, Piso 4
Casilla 50484, Plaza de Armas
Santiago de Chile – Chile

Email: itusantiago@itu.int
Tel.: +56 2 632 6134/6147
Fax: +56 2 632 6154

Honduras
**Unión Internacional de
Telecomunicaciones (UIT)**
Oficina de Representación de Área
Colonia Palmira, Avenida Brasil
Ed. COMTELCA/UIT, 4.^o piso
P.O. Box 976
Tegucigalpa – Honduras

Email: itutegucigalpa@itu.int
Tel.: +504 22 201 074
Fax: +504 22 201 075

Arab States

Egypt
**International Telecommunication
Union (ITU)**
Regional Office
Smart Village, Building B 147, 3rd floor
Km 28 Cairo – Alexandria Desert Road
Giza Governorate
Cairo – Egypt

Email: itucairo@itu.int
Tel.: +202 3537 1777
Fax: +202 3537 1888

Asia and the Pacific

Thailand
**International Telecommunication
Union (ITU)**
Regional Office
Thailand Post Training Center, 5th
floor,
111 Chaengwattana Road, Laksi
Bangkok 10210 – Thailand

Mailing address
P.O. Box 178, Laksi Post Office
Laksi, Bangkok 10210 – Thailand

Email: itubangkok@itu.int
Tel.: +66 2 575 0055
Fax: +66 2 575 3507

Indonesia
**International Telecommunication
Union (ITU)**
Area Office
Sapta Pesona Building, 13th floor
Jl. Merdan Merdeka Barat No. 17
Jakarta 10001 – Indonesia

Mailing address:
c/o UNDP – P.O. Box 2338
Jakarta 10001 – Indonesia

Email: itujakarta@itu.int
Tel.: +62 21 381 3572
Tel.: +62 21 380 2322
Tel.: +62 21 380 2324
Fax: +62 21 389 05521

CIS countries

Russian Federation
**International Telecommunication
Union (ITU)**
Area Office
4, Building 1
Sergiy Radonezhsky Str.
Moscow 105120
Russian Federation

Mailing address:
P.O. Box 25 – Moscow 105120
Russian Federation

Email: itumoskow@itu.int
Tel.: +7 495 926 6070
Fax: +7 495 926 6073

Europe

Switzerland
**International Telecommunication
Union (ITU)**
**Telecommunication Development
Bureau (BDT)**
Europe Unit (EUR)
Place des Nations
CH-1211 Geneva 20 – Switzerland
Switzerland
Email: eurregion@itu.int
Tel.: +41 22 730 5111



International Telecommunication Union
Telecommunication Development Bureau
Place des Nations
CH-1211 Geneva 20
Switzerland
www.itu.int

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