



Project Budget Number:

Project Title: Developing a Broadband Plan/Strategy for Jamaica

Project Short Title: Jamaica Broadband Plan

Start Date: September, 2012

Estimated End Date: September, 2013

Government Coop. Agency: Ministry of Science Technology, Energy and Mining and Office of Utilities Regulation.

Implementing Agency: Office of Utilities Regulation

Project Site: Jamaica

Beneficiary Country: Jamaica

Project Manager:

SUMMARY OF CONTRIBUTIONS	
A) Project Budget	
Description	US\$
Project Personnel	320,400
Equipment	158,200
Training of Trainers	30,000
Monitoring & Evaluation	
Miscellaneous and Other Costs	51,400
Total:	560,000
B) Cost Sharing US\$ 560,000	
Participating Countries Contribution (in kind)	
– Trainers	
– Training Room / Business Centre	
– Communication Facilities	
– Infrastructure	

Brief Description:

This Project aims at the development of a planning framework and strategies to assess and expand accessibility and adoption of broadband services in Jamaica. The Project will provide for the development of a National Broadband Plan/Strategy as well as a web-accessible interactive Broadband coverage map and Dashboard. These initiatives will create a forum for broadband/universal access policy discussions as well as an informational and planning resource for policymakers, regulators, providers, and end-users. They will enable the Government of Jamaica to facilitate broadband deployment and adoption while tailoring its market interventions to complement rather than substitute for market forces.

For the	Signature	Date	Name/Title
ITU:	_____	__/__/____	
Partner(s):	_____	__/__/____	
	_____	__/__/____	

1. Background & Context

General introduction

Jamaica is the largest English speaking island in the Caribbean with a land mass of 4,411 square miles (10,981 square kilometres). It has a population of over 2.7 million (2010) of which approximately 53.7 per cent lives in the urban areas. The country's labour force was estimated at 1.24 million in 2011 and its unemployment rate for 2011 was approximately 12.8%. The rural communities experience the highest rates of unemployment. Service sectors (tourism, financial, ICT etc.) accounted for 60% of the country's GDP in 2010. Other areas of economic activity are manufacturing, mining and export of bauxite and alumina and the production of a range of domestic and export crops. Jamaica's Gross National Income per capita of US\$4,750 (2010) places it at the low end of the 'upper middle income' group according to the World Bank's classification. Jamaica had a real GDP growth rate of -0.8% in 2010. Although Jamaica has experienced low growth rate in recent years, the country has made significant progress in a number of key social indicators and is ranked 79th on the United Nations Development Programme's Human Development Index. Jamaica is also on target to achieve most of the Millennium Development Goals by 2015.

Present situation/context

Market Developments

Jamaica has some of the required infrastructure for economic growth, abundant supply of potable water, a reliable electricity supply, and advanced telecommunications networks. The telecommunications sector, which is regulated by the Office of Utilities Regulation, was liberalized in April 2000 with the promulgation of a new Telecommunications Act. The first segments to be liberalized were the mobile and Internet segments. Since liberalization, the telecommunications sector has been the fastest growing sector in Jamaica. Data from the Planning Institute of Jamaica (PIOJ) reveals that approximately US\$80.9 million per annum or 12% of total FDI flows is spent on ICT related infrastructure. The country's ICT exports include value-added products such as computer-assisted designs at the high end to call centres at the low end.

Prior to August 2011, the Jamaican mobile landscape was one of the most vibrant in the Caribbean with three (3) mobile providers in the incumbent Cable & Wireless Jamaica Ltd (T/a LIME), Digicel Jamaica Ltd (T/a Digicel) and Oceanic Digital Jamaica Ltd (T/a Claro). The three players provided services to an estimated population of 2.86 million people with an estimated subscriber base of 3.14 million. In August 2011, the number of players in the mobile market was reduced to two (2) with the acquisition of Oceanic Digital Jamaica Ltd by Digicel. Currently, the country boasts a mobile penetration rate of 116.38%.¹

Unlike the case of the mobile segment, the penetration rate in the fixed segment is very low. The number of fixed lines peaked in 2001 when it reached 501,302. Since then, with the exception of 2003, there has been a downward trend in the number of fixed lines and at the close of the first quarter of 2011, fixed line subscriptions stood at 282,634. As at the same date the fixed penetration rate was just under 11 per cent. There are three operators in the fixed segment of the market: LIME (the incumbent) which provides both wired and wireless fixed services; Columbus Communications Ltd. (T/a FLOW) which provides services via its cable network; and Digicel which provides fixed wireless services.

The Internet segment lags behind the mobile and the fixed segments. As at the end of 2011 there were over 87 licensed ISPs, of which less than 10% were operational. The main providers are: LIME providing

¹ It should be noted that this penetration rate is reflective of consumers having more than one mobile subscription and could also include data SIM cards.

services via dial-up, ADSL and mobile broadband; Digicel providing services via mobile broadband and WiMax; and FLOW providing services via cable modem. A 2011 Study by the Telecommunications Policy and Management Programme at the Mona School of Business revealed that the ICT sector is characterized by relatively low adoption and use rates with respect to computers and the Internet in general.² This they found was due mainly to the high prices for computers and Internet access. Only 15.6% of the population had access to the Internet at home compared to the corresponding global figure of 30%. The country's fixed broadband penetration rate is just over 3%

Policy Developments

Policy developments in the last three (3) years have pinned the island's economic development prospects to the development of the ICT sector. Two of the fifteen (15) national outcomes in Jamaica's National Development Plan (Vision 2030) speak directly to the ICT Sector; Outcome No. 11 refers to a technology-enabled society and Outcome No. 12 refers to an internationally competitive ICT sector. In addition to these direct linkages, ICTs have been identified as an enabling factor in the achievement of the other thirteen (13) national outcomes. In the same document, the Government commits to the development of "an advanced private-sector driven ICT industry that achieves sustained global competitiveness and enhances the productivity of our goods and services producing sectors".³

The ICT Policy tabled in March 2011 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".⁴ The goals of the Policy 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."⁵

Problem statement/ Description of the problem

In the latest release of the World Economic Forum's Network Readiness Index (NRI) Jamaica is ranked #73. This reflects a tumble of 28 places since the 2006-2007 ranking. Given the indicators measured by the NRI and Jamaica's high mobile penetration rate, it is more likely than not that this fall in the rankings can be attributed to the low level of Internet penetration in Jamaica. The limited access to broadband connectivity prevents the Government, businesses, communities and individuals from fully participating in the knowledge economy and the global information society.

It has become quite clear that mere voice services are unlikely to be a significant driver of economic growth in Jamaica. Whereas in the early 2000s, the focus in the ICT sector was on the provision of voice services, globally there has been a shift towards providing access to Internet facilitating technologies based on the fact that the Internet is viewed as a central hub for economic and educational opportunities. More recently, the results from a World Bank econometric analysis of 120 countries showed that for every 10% increase in

² Telecommunications Policy and Management Programme (2011) Caribbean ICT Indicators and Broadband Survey

³ Planning Institute of Jamaica (2009), Vision 2030 Jamaica - National Development Plan, [http://www.vision2030.gov.jm/Portals/0/NDP/Vision%202030%20Jamaica%20NDP%20Full%20No%20Cover%20\(web\).pdf](http://www.vision2030.gov.jm/Portals/0/NDP/Vision%202030%20Jamaica%20NDP%20Full%20No%20Cover%20(web).pdf)

⁴ Government of Jamaica, (2011) Information and Communications Technology (ICT) Policy. http://www.jis.gov.jm/pdf/GOJ_ICTPOLICY_March2011.pdf

⁵ Ibid

broadband penetration, there is a 1.3% increase in economic growth. The results also showed that the growth effect of broadband is stronger in developing countries. Given Jamaica's low broadband penetration rate it can realize significant benefits from increased access.

The tumble in the NRI ranking has served as a wake-up call and has led to calls from academia, businesses and civil society organizations for the development and implementation of a strategic plan to shore up the country's ICT sector in order to achieve the economic and social benefits that can be derived from broadband. Cognizant of the need to harness the benefits of broadband connectivity, the Government, in the recent Draft Bill to amend the Telecommunications Act and in keeping with the ICT Policy, has expanded the principles on which universal access obligations shall be based to include the need "to pursue strategies to increase access to high capacity networks and the dissemination of information and communications technology services in un-served and under-served areas of Jamaica".

In order to develop a Broadband Plan/Strategy and achieve the country's universal access objectives, policymakers, regulators and operators need to have an in-depth understanding of all the related supply and demand issues surrounding the broadband ecosystem in Jamaica. The initiatives under the Proposed Project will:

- 1) Provide the requisite baseline data on the broadband ecosystem;
- 2) Facilitate the formulation of a comprehensive Plan/Strategy to increase adoption and deployment of Broadband networks and applications in Jamaica;
- 3) Provide a basis for the on-going monitoring of broadband deployment;
- 4) Provide information on broadband to interested persons for the purposes of business, travel etc.

The initiatives will create a forum for broadband/universal access policy discussions as well as an informational and planning resource for policymakers, regulators, providers, and end-users. Further, the Project will enable the Government of Jamaica to facilitate broadband deployment and adoption while tailoring its market interventions to complement rather than substitute for market forces.

National/Government Commitment

The Government of Jamaica is committed to the development of the Broadband Plan/Strategy and to its implementation. The Government is also aware that the plan will always be changing to reflect new realities and is therefore committed to adjusting the Plan/Strategy from time to time in order to take account of new developments in technologies and markets. It is also committed to develop mechanisms which will track the progress of the Plan.

Process followed in Project identification/formulation

This Project sits within the wider policy framework for Universal Access which seeks to deliver high quality communications services to enable the full participation of all Jamaicans in the global information society and knowledge economy. The wider policy framework comprises:

- the facilitation of a competitive market as the main strategy for delivering better quality and a wider range of services at lower prices;
- the implementation of strategies to ensure the equitable availability, quality and pricing of basic telephone and data services to all Jamaicans.

Having achieved its universal access objective with respect to voice services, this Project represents the next phase of Jamaica's universal access initiatives. Based on an evaluation of the supply and demand broadband challenges that Jamaica faces, the next obvious step is to develop the requisite

policies/strategies and tools to address these challenges. This Project will provide a national focal point around which other broadband projects can develop.

Relationship to other past and current BDT programs/activities

In 2004 the ITU provided seed funding to the Government of Jamaica (GoJ) to develop an e-Learning Project. The e-Learning Project which is currently being implemented in all public high schools in Jamaica was scoped to rely on a broadband network for the delivery of many services.

National/Regional Strategy:

The Project outputs will be utilized to determine economic and planning objectives and among other things support the development objectives outlined in Vision 2030. It is anticipated that the initiatives under this Project will serve as prototypes which can be replicated throughout the Region.

Project Strategy:

The Project is intended to provide a snapshot of the current level of Broadband availability, adoption and demand, while at the same time being forward-looking and visionary. The Project strategy is to make use of proprietary broadband data from operators as well as publicly available data. This information will be supplemented by data independently collected by the OUR or its Consultant. The Project will also make use of demographic data collected by the Statistical Institute of Jamaica as well as property parcel information which is housed at the National Land Agency. Upon completion, the outputs will provide policymakers and operators with the appropriate planning tools. They will also provide information to individuals and corporate decision makers, wanting to find out more about broadband facts such as the current and likely availability and adoption of broadband.

2. Overall Project Objectives:

The overarching objective of the proposed Project is the development of a strategic planning framework to assess and expand accessibility and adoption of broadband services. More specifically, the objectives of the Project are to:

1. Collect baseline data on the availability of and demand for broadband access in Jamaica;
2. Identify and track the areas in Jamaica with low levels of broadband deployment;
3. Identify the rate at which businesses and households adopt broadband services and applications;
4. Identify barriers to the deployment of broadband networks and the adoption of broadband services and applications
5. Provide a mechanism for the exchange of information on the use and demand for broadband services between public and private sector users; and
6. Map the collected data in order to create geographic inventory maps and dashboard which will provide non-confidential information on broadband availability and demand.

3. Expected results

- A Broadband Study;
- A Plan/Strategy for the deployment of broadband networks and applications and for the adoption of broadband service and applications;
- A Model of broadband infrastructure and coverage in GIS format;
- A web accessible interactive Broadband Map; and
- A web accessible Broadband Dashboard.

The Broadband Study will address the supply-side of the broadband eco-system by seeking to identify the current availability of broadband access and applications as well as the barriers to their deployment. On the demand-side the Study will assess the current rate of adoption and use as well as where potential or likely demand exists. In addition to Plan, an interactive Broadband coverage map and Dashboard will also be developed using the data from the Study. These will be hosted on a dedicated Broadband website. The map and dashboard, which will be searchable by address, will allow for the public display of broadband information relating to: 1) geographic coverage; 2) available speed; 3) technologies being utilized; 4) number of providers in a particular area; 5) the take-up of services; and 6) service availability at public buildings such as libraries, educational institutions and hospitals.

Indicators

The expected results of this project derived from the objectives outlined are as follows:

- The creation of a well-defined policy and institutional framework, within which to implement broadband strategies;
- Increased investment in Broadband access networks;
- A Broadband penetration rate which ranks above the average for middle income countries within four years of the implementation date of the Plan;
- An increase in the rate of user adoption;
- An increase in locally created content and applications;
- An increased number of skilled people;
- An enhancement of literacy, in particular ICT literacy, in the country;
- The facilitation of ICT user awareness and support;
- An improvement in business productivity and efficiency;
- An increased number of knowledge-based, high growth innovative companies (to be monitored using business start-up and survival rates).

4. **Activities**

The key project activities that will be carried out during this Project are listed below. They are grouped in terms of Components (I, II and III). While Monitoring and Evaluation activities are not explicitly outlined these will be incorporated under each component. Some activities in the Work Plan will run concurrently.

Component I

- Conduct Broadband Study
 - Collect coverage data from licensees
 - Collect coverage data of broadband infrastructure from available public data
 - Collect demographic data from the Statistical Institute of Jamaica
 - Collection of property parcel information from National Land Agency
 - Conduct Demand and Adoption Survey
- Acquire GIS software
- Training in GIS modelling

Component II

- Create Model of broadband infrastructure and coverage in GIS format
- Build interface portals for automated data submission by operators
- Develop web accessible applications - interactive broadband map and dashboard.

Component III

- Development of a high level strategic plan for broadband deployment and adoption

5. **Inputs**

Contribution from partner: specific computer hardware and software, training programme, cost of surveys, data gathering, monitoring capabilities, consultant(s) to develop broadband plan and strategies.

Contributions from the Government Agency in each implementing country (*in kind*):

The OUR will provide Staff resources for project management, project reporting, data entry, interface portal development and modelling. The OUR will also provide all related premises, communications facilities and stationery needs.

- Physical items and information:
 - Office supplies
 - Certain computer software
 - Relevant data
- Use of equipment or space:
 - Office and meeting space
 - Computers, phones, fax and copy machine use
 - Vehicle usage
- Employee professional time:
 - Training, project implementation, supervision
 - Provision of technical assistance on a project

- Evaluation of the project
 - Oversight of project quality
 - Data Entry
 - Modelling
- **Contribution from the implementing site (in kind):**

Provide premises, communication facilities and the required infrastructure.

6. Risks

To be effective, the broadband mapping activities need to be accurate and credible and have sufficient granularity with the necessary visual effects in order to convey meaningful information to professionals such as potential investors as well as lay audiences. The Project requires acquiring data from multiple telecommunications providers and while the OUR will be doing spot audits much will rely on the accuracy of the data provided by the providers. The granularity of available data may also be an issue. To the extent that this materializes the OUR will take steps to supplement providers' data with its own independently collected data. The Project will also require (pending the promulgation of the Telecommunications Amendment Act) that carriers waive the confidentiality provisions that keep this data from being associated with specific companies.

7. Sustainability

The updating of the infrastructure mapping will be funded from the OUR's Budget and conducted by the Staff of the OUR. A workable and sustainable framework for repeated updating of data will be used to incorporate new address points (demand) and deployment areas into the GIS model. Current data requirements obligations will be updated to reflect the needs of the mapping exercise and will be adjusted periodically to take account of market and technological developments. To ensure the success of the updates the OUR will design and distribute an electronic template to all broadband providers. The providers will be given clear and ample deadlines for data submissions. The OUR will also undertake continuing training of personnel to take account of changes in the mapping technology. The OUR will make periodic recommendations regarding the requisite changes to the deployment and demand stimulation strategies to the relevant Minister. The aforementioned commitments taken together with the Government's commitment to encouraging affordable access to ICT for all Jamaican is testament to the sustainability of the Project.

8. Management

Roles and responsibilities for carrying out the Project

Table 1. Roles and Responsibilities

Section/Task/Deliverable	Responsible Entity
Project Management	OUR
Financial Oversight	Ministry of Finance/Planning Institute of Jamaica
COMPONENT I	
Broadband Study	
<ul style="list-style-type: none"> • Collection of Data from Licensees 	OUR
<ul style="list-style-type: none"> • Collection of publicly available data 	OUR
<ul style="list-style-type: none"> • Collection of Demographic data 	OUR
<ul style="list-style-type: none"> • Collection of property parcel information 	OUR
<ul style="list-style-type: none"> • Conduct Demand and Adoption Survey 	Consultant
Acquire Mapping Applications	OUR
Train Staff in GIS modelling applications	Software Vendor
COMPONENT II	
Create Model of broadband infrastructure and coverage in GIS format	OUR/Software Vendor
Build interface portals for automated data submission by operators	OUR
Develop web accessible applications interactive broadband map and dashboard	OUR/Software Vendor
COMPONENT III	
Development of a high level strategic plan for broadband delivery and adoption	Consultant

9. Overall description of Project management

An OUR Staff member will be named Project Manager. In addition to the Project Manager, there will also be a Management Committee and a Technical Review Team. The latter group will be comprised of members of Staff from the Departments within the OUR that have job functions which directly impact the Project. The Project Manager will provide the Management Committee with bi-weekly reports on how the Project is progressing. The Project Manager will be in charge of scope control and will be responsible for determining if a scope change has occurred and will manage actual changes in scope when they occur. Changes to the scope of Project will be managed through the Integrated Change Control procedure. Where the Project Manager identifies that a change is the Budget is required, it will be documented and then reviewed with the appropriate project team members before approval is sought. The Project Manager will use the Integrated Change Control process for this. Where required changes in schedule are likely to change a milestone date by more than two (2) weeks the Project Manager will implement the Integrated Change Control process. The list of deliverables in the Work Plan provides a high level schedule for the Project. A more detailed schedule will be developed at a later date.

– *Management Committee (if applicable, terms of reference)*

In addition to the Project Manager, the Management Committee will consist of two individuals at or above the Senior Manager level within the OUR.

– *Accountability for project implementation*

The importance of realizing the objectives of the project has been stressed publicly by the OUR and the Project has been added to the Telecommunications Work Plan in the OUR's Business Plan. The Business Plan provides the Prime Minister (who has administrative responsibilities for the OUR); the Sector Ministers and members of the public with assurances that the Office:

- has a clearly defined direction,
- is dealing efficiently with all of the regulatory and administrative issues with best interest of the public; and
- is managing its affairs and resources so as to minimize the risk of not meeting agreed performance levels and timeframes.

It also provides the public and stakeholders with a clear outline of the programme of work and a measure by which the Office can be held accountable for the work it pursues over the business plan. The tentative schedule of implementation of the project is shown in Table 2.

10. Monitoring and Evaluation

Based on the innovativeness of Project, close supervision will be needed throughout implementation. Monitoring and reporting will be the primary responsibility of the Project Manager. Monitoring activities will be designed to track all the components of the Project to ensure that they are progressing according to schedule. Quarterly progress and technical reports will be prepared throughout the life of the Project. The progress reports will document all the activities that have taken place during the previous quarter and outline the work plan for the next quarter. An Ex-post Evaluation Report will also be provided. These mechanisms will allow for full transparency and accountability as well provide evidence as why targets and outcomes are or are not being achieved.

11. Work plan

The schedule of the activities in the Work Plan (Table 2 below) is based on a number of critical assumptions and will require further refinement if there are any departures from these assumptions. These assumptions are:

- The responses to any RFP issued by the OUR fall within the proposed Budget and meet the requirements outlined in the RFP.
- Broadband availability and demand and demographic data is collected in a timely manner.
- Licensees are able to provide the data required in the format requested or in a format that can be easily transformed within established for that activity.

Table 2: Deliverables Log

Section/Task/Deliverable	Start Date	End Date
COMPONENT I	03/09/2012	31/01/2013
Broadband Study		
– Collection of Data from Licensees	03/09/2012	31/01/2013
– Collection of publicly available data	03/09/2012	03/12/2012
– Collection of Demographic data	03/09/2012	03/12/2012
– Collection of property parcel information from National Land Agency	03/09/2012	04/12/2012
– Conduct Demand and Adoption Survey	03/09/2012	31/01/2013

Acquire GIS Mapping Software	03/09/2012	03/12/2012
Train Staff in GIS modelling applications	07/01/2013	01/02/2013
COMPONENT II	01/02/2013	31/08/2013
Create Model of broadband infrastructure and coverage in GIS format	01/02/2013	28/06/2013
Build interface portals for automated updates submission by operators	01/02/2013	30/04/2013
Develop web accessible applications interactive broadband map and dashboard	03/06/2013	30/09/2013
Component III	31/05/2013	30/09/13
Development of a high level strategic plan for broadband delivery and adoption	01/04/2013	30/09/2013

12. Budget

– Funding, accounting and financial reporting arrangements

The OUR will undertake the following responsibilities: i) establish a separate bank account(s) for the management of the Project funds received; ii) prepare and submit disbursement request with requisite justification for expenditure; iii) keep adequate financial accounting and internal control systems to manage the Project's resources; and iv) make project disbursements support information available for review by funding agency and external auditors.

– Administrative cost charges

Administrative services are included in OUR in-kind contribution.

– Description of co-financing arrangements (if applicable)

Not applicable

The estimated budget is attached as Annex 2.

Annex 1: GAANT CHART

ID	Task Name	September	October	November	December	January	February	March	April	May	June	July	August	September	
		Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	
1	COMPONENT I														
2	Broadband Study														
3	Collection of Data from Licensees														
4	Collection of publicly available data														
5	Collection of Demographic data														
6	Collection of property parcel information														
7	Conduct Demand and Adoption Survey														
8	Acquire Mapping Software														
9	Train Staff in GIS modelling applications														
10	COMPONENT II														
11	Create GIS Model of broadband infrastructure/coverage														
12	Build interface portals for automated updates submission														
13	Develop interactive broadband map and dashboard														
14	COMPONENT III														
15	Development of a Broadband Strategy														

Annex 2: Estimated Budget

Activities	Cost US\$
Survey of broadband availability, adoption and demand	40,000
Collection and testing coverage information	40,000
Review operators business plans, legislation, government policies, programmes, resources and facilities and recommend plan for broadband roll-out based on gaps identified	150,000
Procure develop and install GIS mapping software.	108,200
Hardware	50,000
Incorporate existing GIS data from operators and government agencies.	20,000
Other GIS professional services (e.g. Modelling of infrastructure, develop web interface for interactive map and dashboard, etc.)	70,400
Training	30,000
Miscellaneous and Other Costs	51,400
Total	560,000

Overall Budget (ITU Format)

SPONSOR CLASSES	DESCRIPTION	TOTAL in USD
3000	STAFF COSTS	320,400
	Sub-total:	320,400
3200	TRAINING	30,000
	Sub-total:	30,000
3400	PURCHASE OF EQUIPMENT AND SUPPLIES	158,200
	Sub-total:	158,200
	Miscellaneous and Other Costs	51,400
	TOTAL BUDGET	560,000