

Sectoral Debate Presentation

# Building a knowledge based economy



Presentation by

**Julian J. Robinson**

Member of Parliament South East St Andrew

# The ICT Road Map: path towards a knowledge based economy

The ICT Roadmap, **started in 2012**, is an **action-oriented portfolio of initiatives**, formulated over three distinct time horizons: 5-years (for long-term objective), 3 years (the medium term) and 18 months (to address short term priorities). Each initiative is situated in one of the following four major pillars:

1

**National ICT Strategy, Policy & Legislation:** Strengthening the ICT governance and administrative framework through the development and promulgation of key pieces of legislation, supporting policy guidelines and regulatory reform.

2

**National ICT Infrastructure:** Continuing to build out Jamaica's National ICT infrastructure to facilitate future broadband deployment and to ensure a competitive sector and digital inclusiveness for all our citizens.

3

**ICT-enabled Public Sector Modernization:** Solidifying the capacity of public institutions and providing the governance framework to deliver efficient and effective public goods and services through the establishment of a more effective Government ICT infrastructure and establishing the institutional capability to architect the overarching technology vision and provide leadership in the development and implementation of the GoJ's ICT strategy and programmes.

4

**ICT Sector Capacity Building/Innovation Enablement:** Utilizing appropriate mechanisms to stimulate new business opportunities, innovation and entrepreneurship in the local ICT sector.

# **① National ICT Strategy, Policy & Legislation**

# Information and Communications Technology Act

## Background

- Promulgation of New Information and Communications Technology (ICT) Act was a policy imperative
- Work in this regard was undertaken in 2013 and 2014-2015 respectively, which involved a review of the:
  - licensing, interconnection and access provisions in the Telecommunications Act. This work was sponsored by the International Telecommunications Union under the HIPCAR Project;
  - legal and regulatory framework governing the telecommunications sector with specific focus on the regulatory agencies and converging their current roles into that of a single regulator for Information and Communications Technology (ICT);
- Further review of the legal and regulatory framework for the telecommunications sector scheduled to be undertaken in 2016, with specific focus on:
  - consolidating the previous reviews which were conducted; and
  - drafting a modern ICT Act.

# Single ICT Regulator

## Objectives:

- Removal of inconsistencies, overlapping of jurisdiction and fragmentation.
  - Three entities regulate the ICT industry – Spectrum Management Authority (SMA), Office of Utilities Regulation (OUR) and the Broadcasting Commission
- Generate savings in staffing and other expenditures.
- Establishment of a regulatory structure that is reflective of the nature of the industry being regulated.

## Progress to date:

- Consultancy completed in 2015 with the following deliverables
  - Reviewed the current administrative and regulatory framework and governance model for the ICT sector and made specific recommendations for drafting appropriate strategic legislation for the establishment of a converged stand-alone ICT Regulator.
  - Proposal for an organizational structure for the establishment and implementation of a converged stand-alone ICT regulator including estimated cost of the establishment of the ICT Regulator and the systems required to deliver its mandate.
- **The work on the single regulator will be incorporated in the new ICT legislation as the new Act will make provision for the Single Regulator.**
- Terms of Reference to be developed for the engagement of a Transition Manager to guide the rationalization and merger of the OUR (telecommunications functions), the SMA and the non-content functions of the Broadcasting Commission.

# Cyber Security

## **Objectives:**

- To set out an integrated and comprehensive approach for the development of a resilient cyber security framework for the people of Jamaica.

## **Progress to date:**

- **Developed a National Cyber Security Strategy and implemented it.**

## **Four critical components of the Strategy**

- Technical Measures
  - Implementation of a Cyber Incident Response Team (CIRT) which is fully operational
- Legislation
  - Amended the Cyber Crimes Act to account for new types of criminality eg: Cyber bullying and increased penalties and fines
- Capacity Building
  - Trained MIS officers within GOJ and members of the JCF in cyber security
- Public Education and Awareness
  - Developed and designed a public education campaign in collaboration with private sector partners in the financial services industry
  - Implementation of the Stop Think Connect campaign

# Data Protection Legislation

## **Objective:**

To implement a more uniform, robust and clear legal mandate with regard to the protection of privacy and personal information is required. The Act will seek to protect the privacy of individuals in relation to personal data and the regulation of the collection, processing, keeping, use and disclosure of certain information relating to individuals.

## **Progress to date:**

- Promulgation of New Data Protection Act was a policy imperative.
- Work in this regard commenced in 2013. ITU - engaged a consultant on behalf of the GOJ to prepare a Data Protection Act.
- Wide stakeholder consultation undertaken on the proposed recommendations for the Data Protection Act.
- A draft Bill was prepared 2015; and thereafter circulated to key GOJ stakeholders.

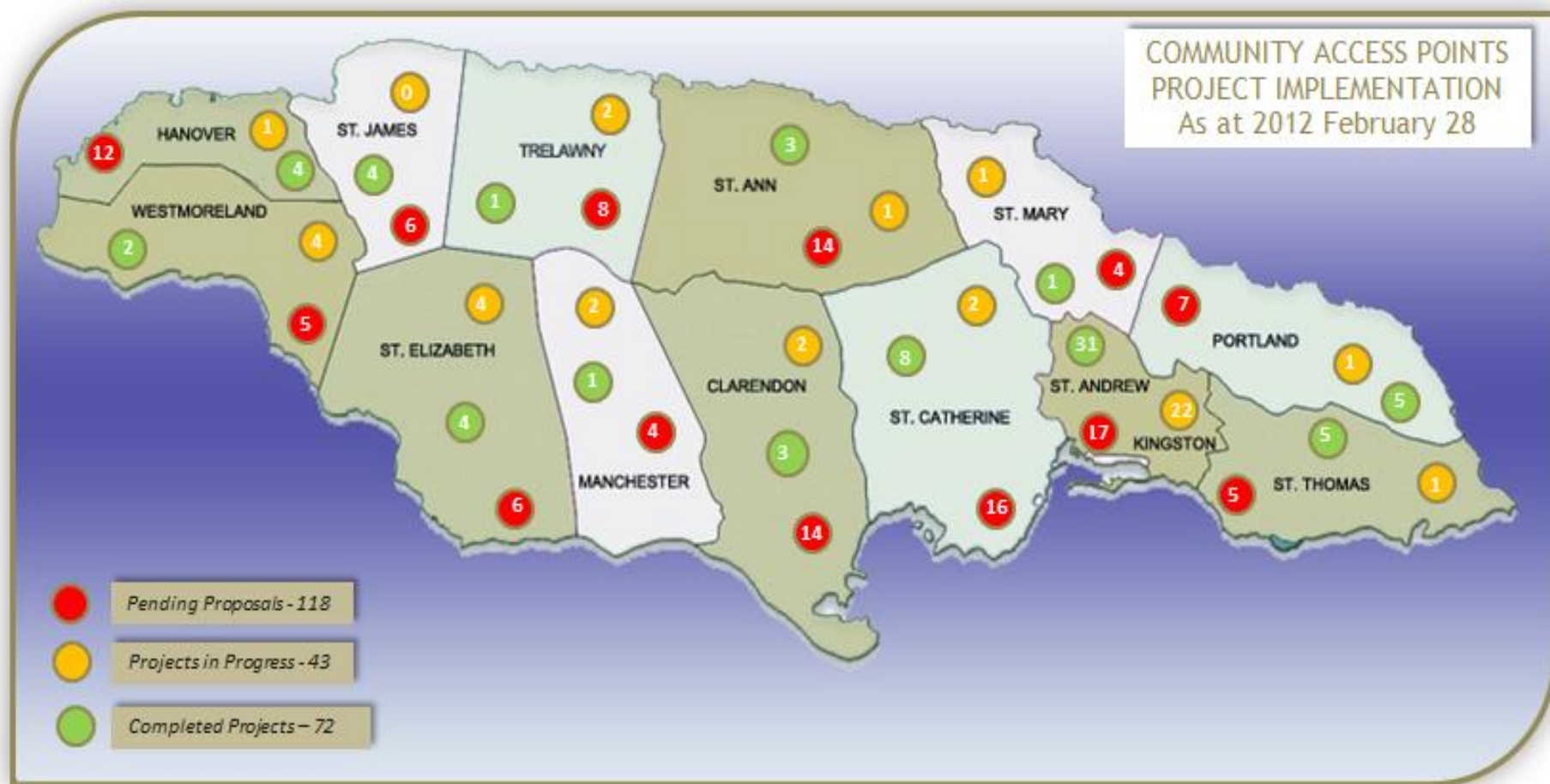
## **Next Steps:**

- Further consultations to take place

## **② National ICT Infrastructure**



# Community Access Points: Feb 2012

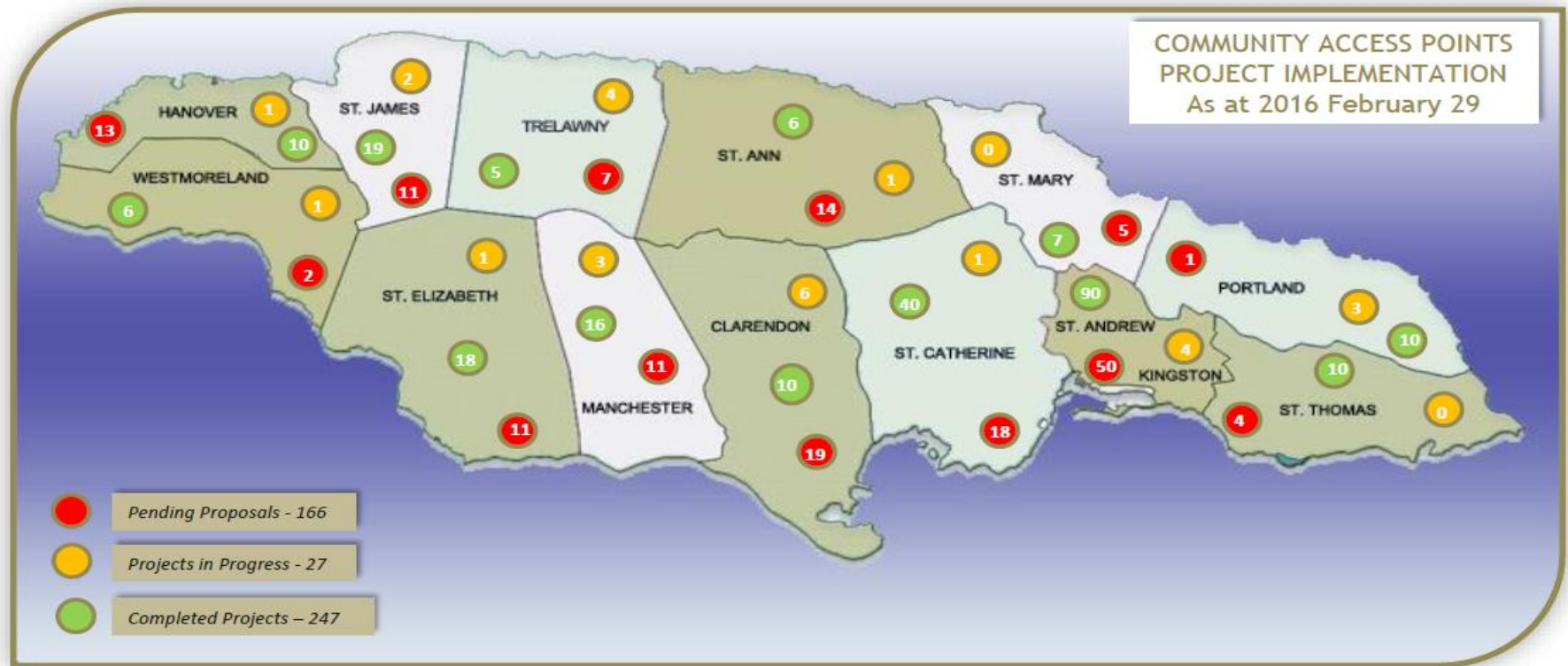


## What is a Community Access Point (CAP)?

A Community Access Point is an Internet service facility established in collaboration with community organizations throughout Jamaica and funded by the Universal Service Fund in furtherance of the Government's Universal Service Obligation. Computers, associated equipment, and Internet access are provided to allow Jamaican residents to access the Internet. CAPs enable members of the Jamaican communities to use the internet at minimal or no cost to them to facilitate research, bill payments, education, communication, business, marketing, and social networking. The Universal Service Fund has approved funding for 115 CAPs as at February 28, 2012, 72 of which have been commissioned to service.

# Community Access Points: Feb 2016

## 247 community access points built out by the Government by 2016

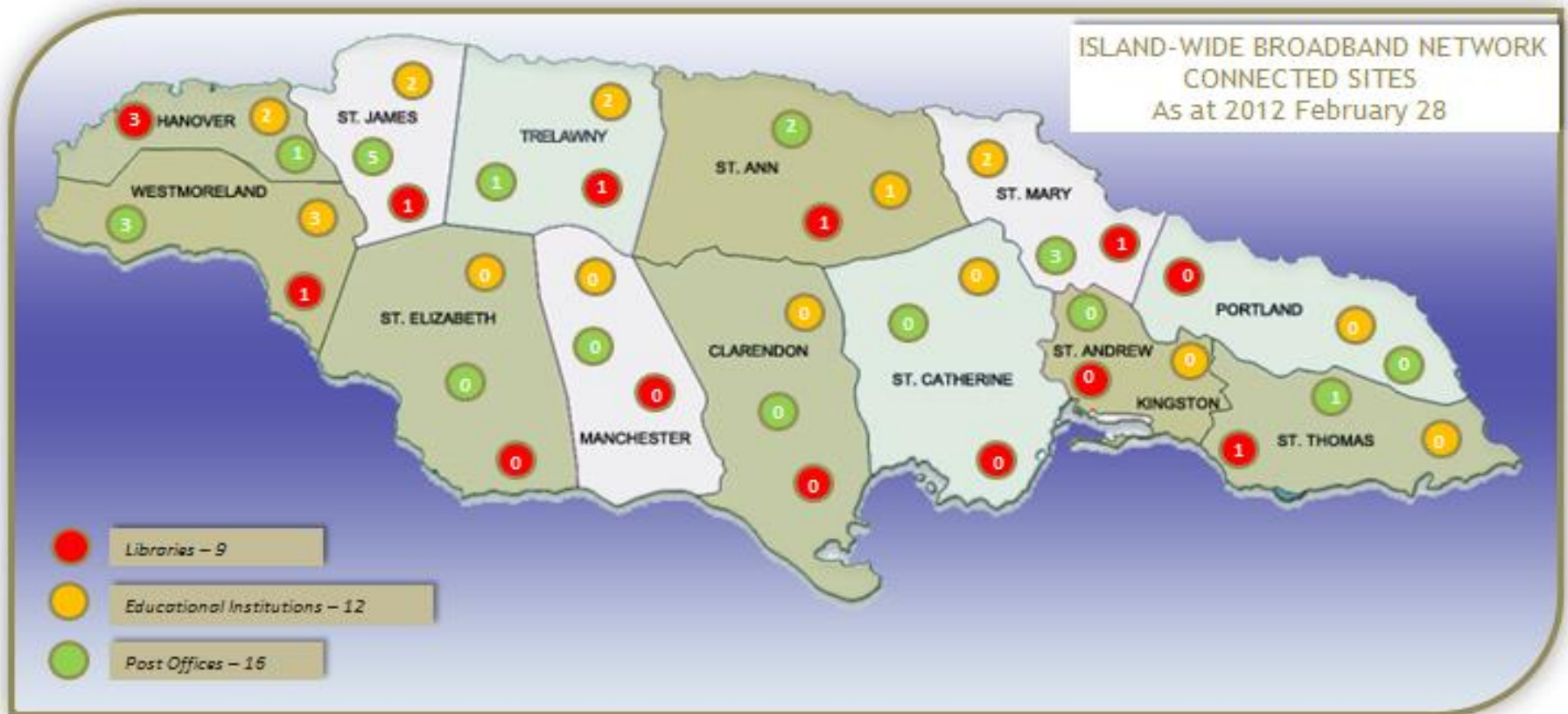


### What is a Community Access Point (CAP)?

A Community Access Point is an Internet service facility established in collaboration with community organizations throughout Jamaica and funded by the Universal Service Fund in furtherance of the Government's Universal Service Obligation. Computers, associated equipment, and Internet access are provided to allow Jamaican residents to access the Internet. CAPs enable members of the Jamaican communities to use the internet at minimal or no cost to them to facilitate research, bill payments, education, communication, business, marketing, and social networking. The Universal Service Fund has approved funding for 274 CAPs as at February 2016, 247 of which have been commissioned to service.



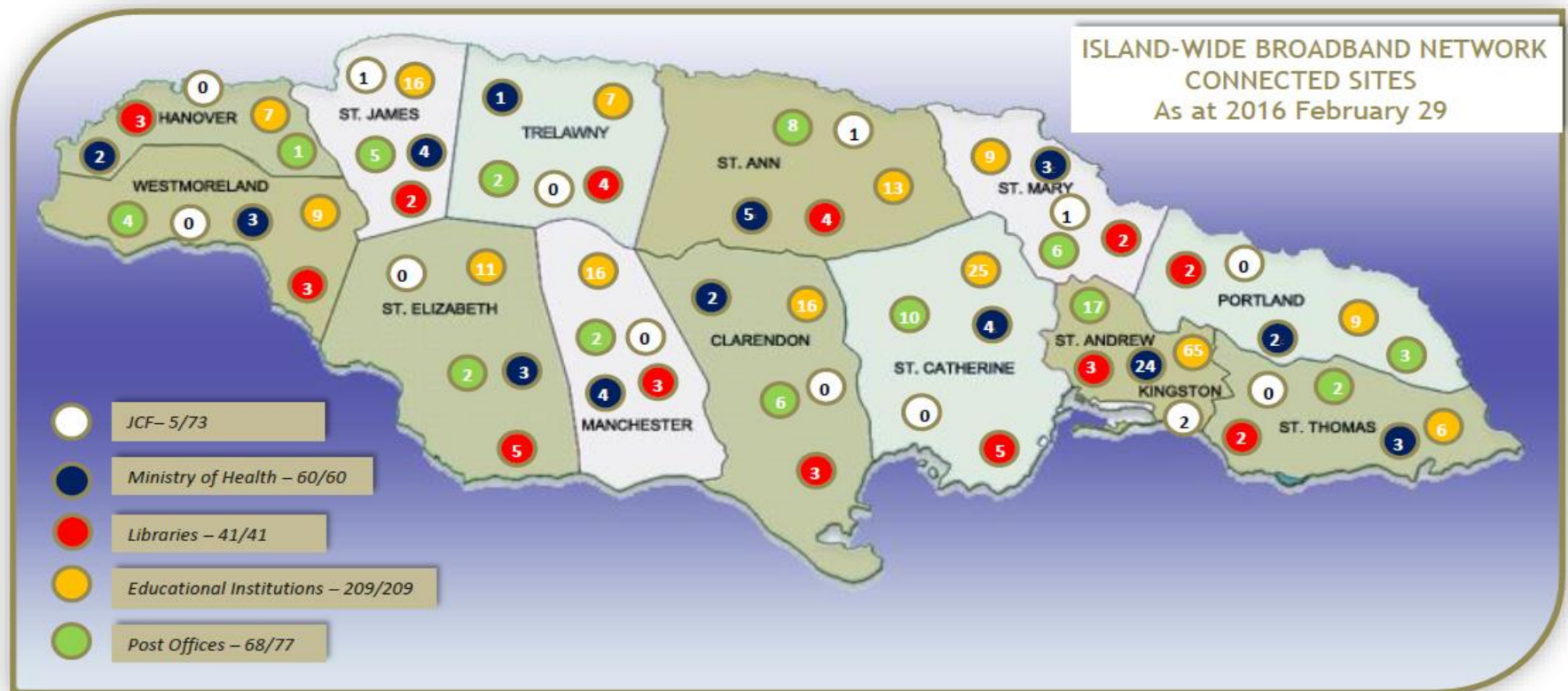
# Island-wide broadband network: Feb 2012



## Island-wide Broadband Network?

Broadband is a term used to describe a network that can transmit a wide range of signals, including audio and video. Broadband networks are especially useful in the networked World, as they can carry many signals at once, resulting in faster data transmission. Broadband signals are usually transmitted over four different types of infrastructure/medium *i.* Copper wires pairs that are used in most land based telephone infrastructure; *ii.* Fibre optic cable – preferred for land based transmission; *iii.* Wireless signals from satellite or transmission towers; and *iv.* Cable TV – coaxial cable infrastructure. Jamaica is fortunate to have multiple options for the provision of Internet access even though the coverage remains limited and is heavily concentrated in the urban and sub-urban areas of the country. Jamaica's Broadband Network will provide island-wide coverage with initial connectivity in schools, Libraries, and Post Offices. .

# Island-wide broadband network: Feb 2016



## Island-wide Broadband Network?

Broadband is a term used to describe a network that can transmit a wide range of signals, including audio and video. Broadband networks are especially useful in the networked World, as they can carry many signals at once, resulting in faster data transmission. Broadband signals are usually transmitted over four different types of infrastructure/medium (i. Copper wires pairs that are used in most land based telephone infrastructure; ii. Fibre optic cable – preferred for land based transmission; iii. Wireless signals from satellite or transmission towers; and iv. Cable TV, - coaxial cable infrastructure). Jamaica is fortunate to have multiple options for the provision of Internet access even though the coverage remains limited and is heavily concentrated in the urban and sub-urban areas of the country. Jamaica's Broadband Network will provide island-wide coverage with initial connectivity in schools, Libraries, and Post Offices. .



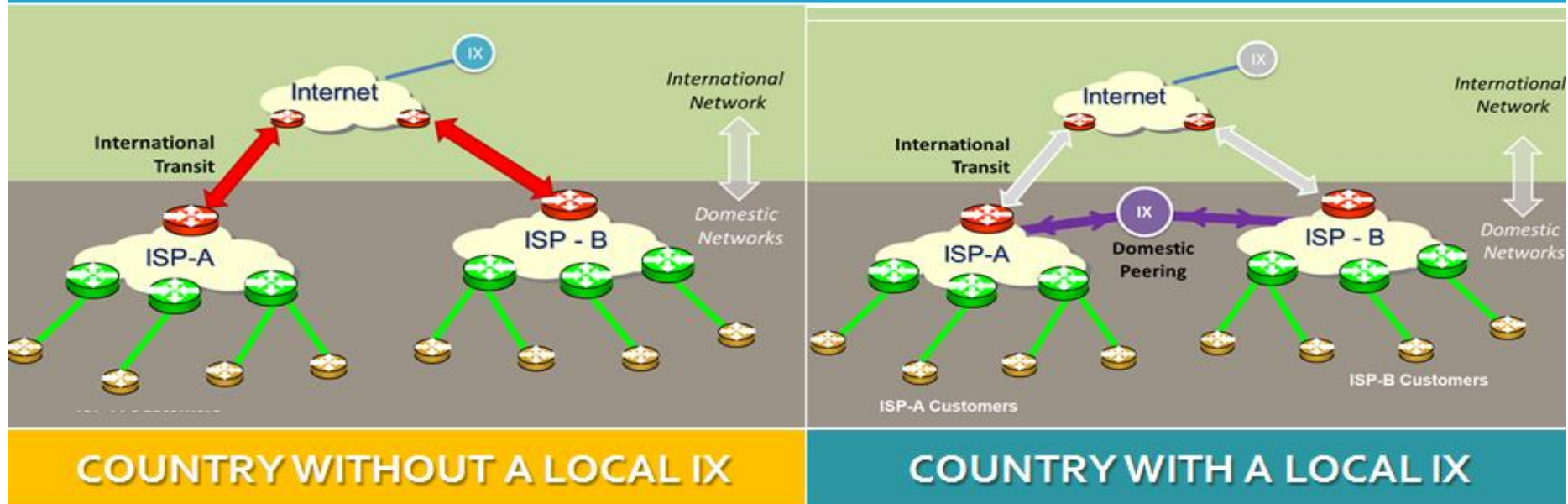
# Established a local IXP for Jamaica (Internet Exchange Point)

## Background

The establishment of a local IXP encourages local routing of domestic/regional traffic by facilitating the interconnection between all players involved in an effort to reduce cost and maximize performance.

The IXP was established in 2015 – now requires all the telecommunication providers to come on board

## QUICK PRIMER: WHAT'S AN IXP



# Implemented Number Portability to enhance competition

## **Progress to Date**

- Since its launch in June 2015, 62,000 customers have ported their mobile numbers as of May 2016
- Next phase of Number Portability is to examine landline to mobile and vice versa

## **Benefits:**

- Allows consumers to choose a service provider based on service, quality, and price, rather than on a desire to retain a particular telephone number.
- Allows consumers to change service providers while avoiding the time, costs and risks associated with changing numbers.
- Promotes competition by eliminating real or perceived barriers to customers switching service providers and thus makes it easier for entry into the market by new players.

# Implemented the Tablets in School Pilot Project

## **Progress to Date**

- Delivered approximately 25,000 tablets to students and teachers in 38 educational institutions islandwide
- Distributed interactive white-boards/projectors, scanners, printers to some schools
- Installed Internet and wifi hot spots at the schools
- Trained over 1,000 teachers in ICT skills and how to use the tablets in teaching

## **The Positives**

- Improved discipline, student motivation and school attendance, and literacy in some instances
- Increased engagement of students
- Improved GSAT exam results through ability to utilize web resources such as GoGSAT to study for GSAT exams

## **Lessons Learnt**

- Need for teachers and parents to be more attentive to children accessing inappropriate sites (Unnecessary expenditure on device management systems as rate of theft very low, and children manage to breach the filtering devices anyway)
- Need for improvement in overall quality of the device in terms of hardness/ruggedness
- Need for culture/mind set change of teachers
- Importance of leadership at the school level

# **③ ICT enabled Public Sector Modernization**



# ICT Governance Framework developed and implemented

Objective: To transform Jamaica's public sector to one that is efficient, productive, transparent, accountable and takes account of the needs and interest of all citizens.



**CITO wound up and functions incorporated into MSTEM - October 31, 2013**

**Portfolio responsibility for FSL transferred to MSTEM**

**FSL renamed eGov Jamaica Limited - November 2013**

**FSL repositioned. Given responsibility for implementing GOJ wide ICT projects**

**National Information and Communications Technology Advisory Council (NICTAC) established in - September 2013**

**Established the Office of the CIO at MSTEM in April 2015 to provide overarching leadership and vision in ICT**

# The case for implementing GovNet

- The Government of Jamaica annual telecommunications costs are estimated to be US\$18M or J\$2.2BN annually
- GovNet can reduce GOJ's telecoms costs by over 50% when fully implemented
- GovNet will be a secure GoJ private telecommunication network that will connect all Ministries, Departments and Agencies (MDAs) and provide voice, data and video services
- There are over two hundred data centers across government.
- Data Centre, electronic mail and Internet services consolidation could significantly reduce cost and minimise the threat of cyber attacks

## **PROGRESS TO DATE**

- Funding secured to develop a detailed design of GovNet
- Request for Proposals issued
- Design should be completed by year end

## **④ ICT Sector Capacity Building/ Innovation Enablement**

# Established the Start Up Jamaica – Accelerator Program

- Start-Up Jamaica, a GOJ initiative, is an accelerator for entrepreneurs designed to turn business ideas into *start-ups* and helping existing entrepreneurs grow their companies through angel investor and mentor networks.

## The early days

- Start-Up Jamaica partners:
  - Jamaica National Building Society – provided the physical space
  - LIME/FLOW – outfitted the building with furniture and technology
  - DBJ – financial support
  - Oasis 500 ([www.oasis500.com](http://www.oasis500.com)) an early stage and seed investment company from Jordan – who invested US\$30,000 in 3 start ups
- A CEO was recruited and a marketing manager
- Currently, there are a number of entrepreneurs operating out of Start Up Jamaica who have created products and services that are earning revenues
- New partnerships are being developed to provide investment opportunities for the entrepreneurs

# **Developing the Animation Sector**

## **Train the Trainers 1 - July 2015**

- 20 Animation Instructors from Heart Trust NTA, UTECH, UWI, CPTC MTI, Edna Manley

## **Curriculum Assessment - July 2015**

- VTDI Associate Degree
- Edna Manley BFA

## **Completed 2<sup>nd</sup> staging of the KingstOOn Animation Festival - March 2016**

- 927 entries from 93 countries
- 1,328 participants

## **Work to be done**

- Establishment of the Animation Industry Advisory Board
- Development of a strategic plan for the sector
- Another Train the Trainers Program and Curriculum Assessment are set for July 2016

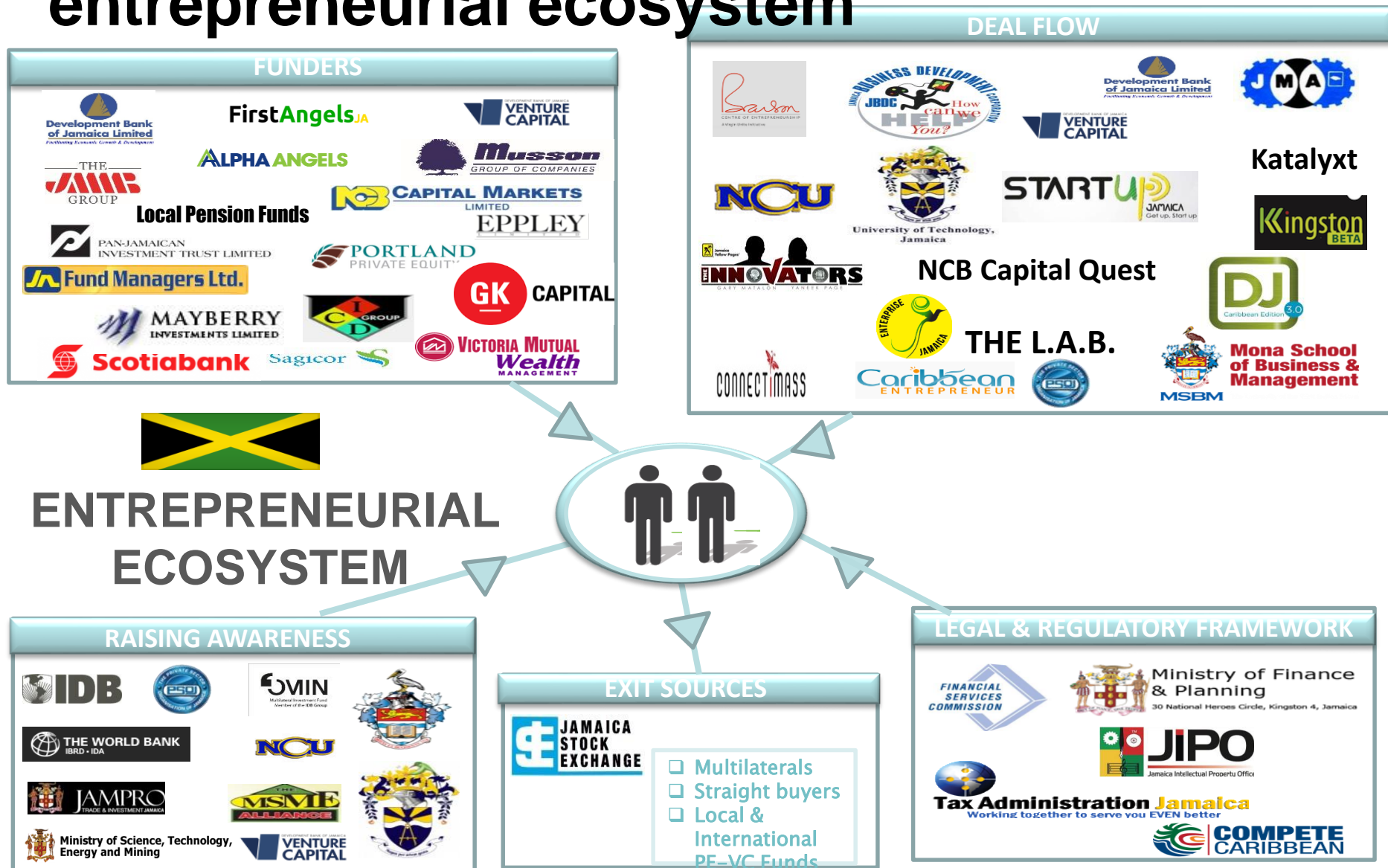
# Established a Jamaican Girls Coding Program

- The Jamaican Girls Coding initiative is designed to introduce young ladies to the discipline of software development and to prepare them for careers in the coding industry



Najeeka Rose (second left) works on her coding techniques at a coding workshop for girls held recently, at the General Accident Insurance Company boardroom in Kingston.

# Supported the development of an entrepreneurial ecosystem





# **DBJ's Venture Capital Ecosystem Project:**

## **Where are we now**

- ✓ **1** PE fund established, **2** more during 2016
- ✓ **2** Angel networks established (**41** angel investors)
- ✓ **50** Entrepreneurs obtained investments / grants
- ✓ **82** Lawyers trained on Legal Toolkit
- ✓ **271** Fund managers, investors & policy makers trained in VC/PE investments
- ✓ **700** student entrepreneurs exposed to business model canvas
- ✓ **1,500** participants at 3 VC conferences



# Establishing a Fund for tech entrepreneurs is not the best use of GOJ resources

- Funding is available but many entrepreneurs do not know how to become eligible to obtain the funds/access the funds or are not aware of the opportunities available to them
- The Funders say that there is a lack of investable entrepreneurs. Focus should be on supporting entrepreneurs to develop good business plan and have a investable product / service
- The entrepreneurs also identify access to training, marketing, peer learning and networking to get into new markets (local, regional and internationally) as areas that need focus

## **What has been done to address these challenges**

- DBJ's IGNITE program
- Entrepreneurship Program for Innovation in the Caribbean (EPIC) US\$20M funded by Govt of Canada and implemented by the World Bank
  - Caribbean Mobile Innovation Project (CMIP)
  - Caribbean Climate Innovation Center (CCIC)
  - Women Innovators network in the Caribbean
  - Accelerate Caribbean

# The case for using mobile money for PATH beneficiaries

- Currently PATH benefits are disbursed to 375,000 beneficiaries using cheques (91%) distributed by the Ministry bi-monthly through the Post Office; and via magnetic Debit cards (9%) administered by the National Commercial Bank

## **BENEFITS**

- Encourage economic efficiency by considerably reducing the cost per transaction and supporting the more productive use of time by participating agencies
- Provide a catalyst for increased financial inclusion in Jamaicans by lowering banking barriers
- Increase the range of financial services utilized by the un-/under-banked in Jamaica

## **PROGRESS TO DATE**

- In 2013, the Bank of Jamaica (BOJ) issued “Guidelines for Electronic Retail Payment Services” which provided the operating parameters for providers of electronic retail payment services (including mobile payments).
- The Banking Services Act, enacted in June, 2014 includes provisions for an Agent banking framework that enables commercial banks and other deposit taking institutions to use agents in the delivery of banking services
- Mobile Money for Microfinance (M3) Pilot Project executed by the Development Bank of Jamaica (DBJ)

# Developed an Open Data Initiative

## **Background:**

Open data is data that is publicly available and structured in a way that enables the data to be fully discoverable and usable by end users. Anyone can access, use and share this data.

The Government of Jamaica began an Open Data Initiative with the assistance of the World Bank in December 2014.

## **Progress to date:**

- Jamaica Open Data Portal launched June 24, 2016 (data.gov.jm) – first country in the English speaking Caribbean to do so
  - This allows for Government data to be published in one place. It is designed to display Government data online in machine readable format in order to promote greater transparency to the citizenry and make the data available to the private sector for creating new products and services. Anyone can access and use the Portal.
- Open Data and Open Budget Readiness Assessment completed in collaboration with the World Bank and DFID in 2014. The purpose of the assessment was to assist in diagnosing what actions could be taken to establish an Open Data initiative.
- A draft Open Data Policy was developed in late 2015 – further consultations are taking place

## **The potential impact of open data on the Jamaican economy**

- CAPRI study in 2015 showed the education sector could gain between US\$2.2 billion and US\$2.7 billion; J\$10 billion in the agricultural sector; while open data could increase productivity in the tourism sector between one and 10 per cent, contributing between US\$2.4 billion and US\$23.4 billion to its development.

# Establish a Government Fund to stimulate Research activities

- One element of the knowledge economy that is currently missing is a properly stimulated research environment.
- Research (whether basic or applied) is an effective way for a government fund to be applied, because it is an area that the private sector is typically unwilling to invest in (because the outcomes are not guaranteed, and do not yield an marketable product directly).
- Such activity is important to stimulate though, because it attracts bright young minds to focus on technical areas and push their frontiers, which then creates a population that becomes fertile ground for technical innovation, technical training in support areas, and increases the confidence of investors who might consider setting up technical enterprises here.
- Another critical aspect of a fund earmarked for research is that the custodians of that fund get to decide which research directions to stimulate. Government could encourage private sector consortia to establish research funds of their own to push research agenda that are aligned with their own economic interests.
- The process of accessing such funds should be a competitive one. The funding agency would put out, at regular intervals (e.g. every 1, 2 or even 3 years) announcements of the kinds of problems that they would like to see addressed. Respondents would propose research projects that would try to answer that call, and funding would be given to the proposals that best fit the mandate of the fund

# **Addressing electricity theft**

# The Government undertook efforts to address electricity theft

- GOJ establishes committee to address electricity theft in May 2014
- Launch of Project STEP UP – partnership between GOJ, JPS and JSIF in Nov 2014
- Other partners World Bank, USAID, UTECH, UWI, PIOJ, OUR
- 7 communities in Kingston targeted in pilot
  - McGregor Gardens, Denham Town, Tower Hill, Arnett Gardens, Whitfield Town, Payne Land, and Majesty Gardens
- Wired and certified approximately 850 homes at a cost of approximately US\$390,600.
- Invested approximately US\$1M to upgrade primary and secondary infrastructure.
- JPS service centres operated by Community Facilitator
- Community Engagement , through Community Meetings, door to door visits, Energy Management Sessions
- JSIF to expand the program to 18 additional communities

# Case study: McGregor Gardens

	November 2014	May 2016
No. of Legitimate Customers	7	224
Energy Losses	> 90%	70%
Collections	No. Collections	>J\$500K in 7mnths

- Sponsored 4 members of the community completed Electrical Installation Level 1 & 2
- Facilitated 230 legal connection through house wiring
- Each customers benefit from Light Bulb swap from Incandescent to Fluorescent bulbs (UTECH)
- Invested approximately US\$214K to upgrade the existing infrastructure
- Installed approximately 20 LED streetlights
- Successfully installed and tested a new solutions – Pay As You Go (PAYG) Prepaid
- Wellness Fair – (Doctors, JSIF, RGD,)
- Community meetings, Energy management sessions
- Back to school sponsorship