Information and Communication Technologies as enablers for growth and development

Sectoral Debate Presentation
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The ICT Road Map

The Information and Communications Technology (ICT) Roadmap is an action-oriented portfolio of initiatives, formulated over three distinct time horizons: 5-years (long-term), 3 years (medium term) and 18 months (short-term). Each initiative is situated in one of the following four major pillars:

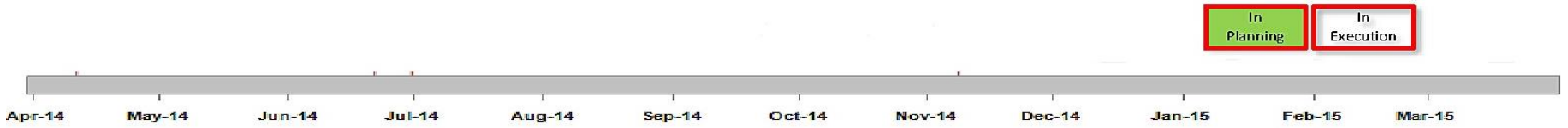
National ICT Strategy, Policy & Legislation: Strengthening the ICT governance and administrative framework through the development and promulgation of key pieces of legislation, supporting policy guidelines and regulatory reform.

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.

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; thereby 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 programs.

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

The ICT Road Map



NATIONAL ICT STRATEGY, POLICY & LEGISLATION

- Develop Policy Guidelines for **Public Sector Enterprise** Adoption of **Free and Open Source Software (FOSS)**
- Establishment of the **Single Regulator for ICT**
- Strengthen the ICT legislative, regulatory and administrative framework: **Data Protection Act**; **ICT Act**; Amendment of **Cybercrimes Act**; Establishment of a **Cyber security Strategy** and a **Cyber Incident Response Team**

NATIONAL ICT INFRASTRUCTURE

- Conduct a Broadband study and the development of a **Broadband Plan and Strategy**
- Attract new telecommunication Operator: Licensing the 700 MHz frequency spectrum and issuing a new submarine fiibre optic cable licence
- Roll-out of the island-wide **Broadband Network** and the establishment of **Community Access Points.**
- **Number Portability** Rules / Planning / Implementation
- Establishment of **Internet Exchange Point**

PUBLIC SECTOR MODERNIZATION / INTUITION CAPACITY (ICT - ENABLED)

- Wind-up CITO and incorporation of functions into MSTEM; establish eGOV as GOJ ICT implementation agency, Recruit GOJ CIO
- **e-Learning Jamaica**: Complete High school phase
- **e-Learning Jamaica:** Develop and Implement primary school pilot project

ICT SECTOR CAPACITY BUILDING / INNOVATION ENABLERS

- **Mobile Money:** BOJ Guidelines issued and Legislation passed
- The Jamaica **Venture Capital Ecosystem** Project
- Initiatives to boost Innovation: Digi jam 3.0; Kingston Animation Festival; Open Data Pilots
- Microsoft Innovation Centre
- Start-Up Jamaica: Innovation Program

National ICT Strategy, Policy & Legislation

Single ICT Regulator

Objectives:

- Removal of inconsistencies, overlapping of jurisdiction and fragmentation.
- Generate savings in staffing and other expenditures.
- Establishment of a regulatory structure that is reflective of the nature of the industry being regulated.

Achievements:

- Technical Cooperation Agreement signed between GOJ and IDB - May 31, 2013
- Conditions prior to first disbursement and conditions required to commence selection and contracting of consultants fulfilled - November 30, 2013
- Eighteen Expressions of Interest (EOI) received - January 14, 2014
- Request for Proposal (RFP) issued to 6 short listed firms - March 17, 2014
- Technical proposal opened - June 1, 2014

Next steps:

- Contract commencement - July 2014
- Duration of consultancy - 6 Months

Single ICT Regulator

Deliverables

• Review the current administrative and regulatory framework and governance model for the ICT sector and make 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.

Free and Open Source Software (FOSS) Pilot Project

Objective: The promotion of FOSS will assist the GOJ with software availability and reduce its reliance on proprietary software, thereby saving cost.

Deliverables:

- Conduct a critical review of the previous FOSS pilot project undertaken by the GOJ as part of the IDB/ICT Project and produce a report
- Develop a FOSS migration strategy and corresponding guidelines
- Implement three pilot projects, one in each of the selected Ministries, Departments and Agencies (MDAs), to validate and adapt the FOSS migration methodology
- Develop a FOSS National Governance Framework and Policy Guidelines

Milestones and Implementation:

- Three agencies identified and evaluated (MSTEM, JIS, MOH)
- Consultancy reports developed to identify FOSS value opportunities and Pilot projects
- Technical/User training conducted
- Two Pilots underway (MSTEM and JIS), to be completed June 2014; MOH Pilot delayed due to Office relocation
- National Governance Framework and Policy Guidelines being developed for Public Sector adoption of FOSS – due end of June 2014

Free and Open Source Software (FOSS) Pilot Project

Insights / Expectations:

- Although the principal motivation is to mitigate the prohibitive cost of Microsoft Desktop Licences, other significant value-opportunities in FOSS adoption beyond the desktop, have been identified across the public sector e.g.
  - National Patient Records & Health Information system (e.g. MOH)
  - Document / Media / Records Management systems (e.g. JIS, AGD)
  - Web conferencing / Virtual Meetings to offset travel/meeting costs

- Research shows that over 100 countries have instituted FOSS Adoption Policy initiatives in the Public Sector using Mandatory/Preferential/Advisory declarations.

- Targeted benefits from a GOJ FOSS Policy include:
  - Reduction in Public Sector spend on ICT
  - Stimulate competition, development and innovation in the domestic software industry
  - Facilitate more rapid development/uptake of e-government practices

The ICT Act

Objective:

To provide the ICT sector with an adequate legislative and regulatory framework which addresses:

- ✓ licensing, interconnection and access
- ✓ current trends and emerging technologies
- ✓ competitiveness
- ✓ consumer protection

Achievement:

Two workshops held in July and August 2013 with government and industry stakeholders (including providers of ICT and Broadcast services).

Next Steps:

Work will continue in FY 2014/2015 with focus on the ICT Single Regulator - the structure, functions and duties of which will form a large part of the new legislation.

Data Protection Legislation

Objective:

To implement a more uniform, robust and clear legal mandate with regard to the protection of personal data. 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.

Achievements:

- Report and Drafting Instructions received from International Telecommunication Union (ITU) consultant - June 2013.
- Hosting of a two day Validation Workshop on May 14 & 15, 2014. The legislation will be a ground breaking one and will have implications for individuals as well as entities within the public and private sector that process personal/sensitive data. Therefore, it was considered critical to hold additional consultations prior to submitting the drafting instruction to the Chief Parliamentary Counsel (CPC).

Next Steps:

- Final Report from consultant - June 2014
- Drafting Instructions to be issued - July 2014
- Bill to be tabled - FY 2015/2016

Cybercrimes Legislation

The Act has been reviewed in order to strengthen the legislation and to ensure that it is in keeping with international best practice as well as effectively criminalizes emerging types of cybercrime.

Achievements:

- Meetings held by Joint Select Committee (JSC) between January 24 - September 24, 2013
- JSC's Report submitted to Houses of Parliament - October 2013
- JSC's Report adopted by the House of Representatives on October 8, 2013 and by the Senate on January 31, 2014

Major recommendations:

- New provisions regarding forfeiture, fraud, forgery, malicious communication and actions prejudicing investigations.
- Higher fines and terms of imprisonment.
- New definitions for the terms "key" and "computer material".
- Application of the Act to the commission of criminal offences which attract a penalty of imprisonment for a term exceeding one year.

Cybercrimes Legislation

Next Steps:

- Cabinet Submission prepared and Drafting Instructions issued to CPC - June 2014
- Bill submitted to Parliament - Dec 2014

Establishment of a Cyber Incident Response Team (CIRT)

Objective:

CIRT will assist in the protection of Jamaica's Internet infrastructure by coordinating defences against and responses to cyber-attacks/threats.

Achievements:

- Project Implementation plan agreed between the ITU and the GOJ
- Stakeholder Consultation - July 8- 10, 2013
- CIRT Readiness Assessment Report prepared
- Agreement reached for the CIRT to be located/hosted at eGov Jamaica Ltd. CIRT operations will be independent of those of eGov
- Discussions regarding User Requirement Specification currently underway

Next Steps:

- Negotiations underway to identify resources to procure and implement the infrastructure.
- Process underway to create posts and identify staff.

National Cyber Security Task Force

Objective:

To create a framework to facilitate the building and enhancement of confidence in the use of cyberspace through collaboration amongst all the stakeholders; with a view to advancing Jamaica's economic interests and maintaining national security under all conditions.

Achievements:

- Task Force established consisting of a broad cross section of stakeholders in private and public sector. Subcommittees formed (Technical, Legal, Human Resource, Public Awareness)
- Task Force involved in the development of the Cyber Security Strategy and the CIRT Assessment Report.

Cyber Security Strategy

Objective:

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

Achievements:

- Obtained Organisation of American State (OAS)/Inter-American Committee against Terrorism (CICTE) support to prepare Strategy - January 2014
- OAS/CICTE in country consultation with members of the private and public sector - March 17 - 21, 2014
- 1st and 2nd drafts of Strategy prepared - April 14, 2014 & May 20, 2014 respectively.

Next Steps:

- Final draft of Strategy - July 2014
- Wider Consultation with stakeholders

National ICT Infrastructure

Making the link between infrastructure development and economic growth

Economic Benefits

A 10 % increase in broadband penetration yielded an additional 1.38% in GDP growth (1980-2002 for 120 countries [low to middle income]).

A 10% increase in broadband penetration yields 0.25% increase in GDP growth (2002-2007 for 25 Organization for Economic Cooperation and Development (OECD) countries)

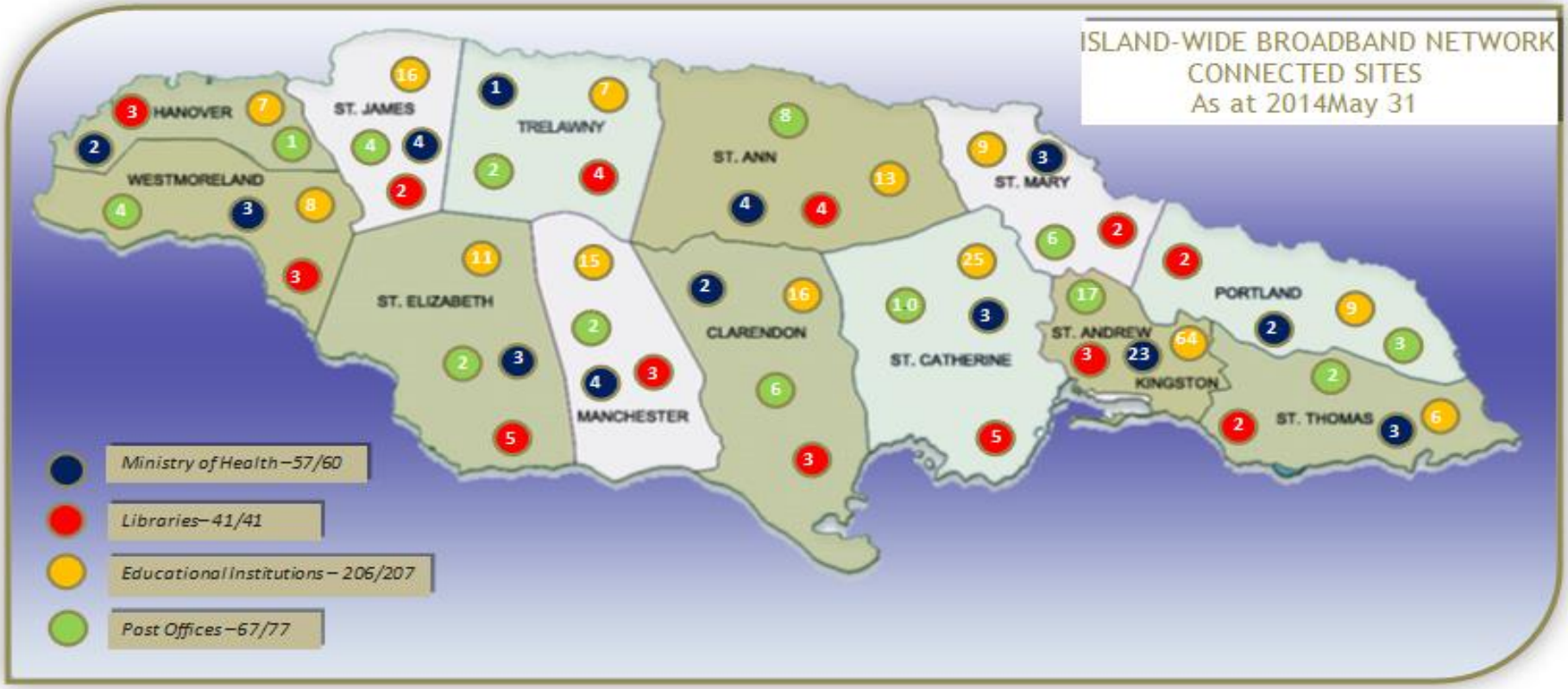
A 10% increase in broadband penetration is associated with 3.6% increase in efficiency (2001-2005 for 46 US States)

Source: ITU 2012

Correlation between Broadband speed and growth

- A study done by Ericsson in 2013 revealed that increase in broadband speeds impact development:
  - In OECD countries, upgrading from 0.5mbps to 4mbps increases income by approximately US$322 per month.
  - In Brazil, India and China, upgrading from 0.5mbps to 4mbps increases income by US$46 per month.

The Government has extended its island-wide broadband network



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. .

Commissioned Broadband Sites island-wide

As at May 31, 2014

Total Sites commissioned:	371
Total Educational Institutions sites commissioned:	206
Total Library sites commissioned:	41
Total Post Office sites commissioned:	67
Total Ministry of Health sites commissioned:	57

Parish	Educational Institutions	Libraries	Post Offices	Ministry of Health
St. Thomas	6	2	2	3
St. James	16	2	4	4
Trelawny	7	4	2	1
St. Ann	13	4	8	4
St. Mary	9	2	6	3
Hanover	7	3	1	2
Westmoreland	8	3	4	3
Portland	9	2	3	2
St. Catherine	25	5	10	3
Kingston/St. Andrew	64	3	17	23
Clarendon	16	3	6	2
Manchester	15	3	2	4
St. Elizabeth	11	5	2	3
Totals	206	41	67	57

FLOW	218	LIME	153
Educational Institutions	109	Educational Institutions	97
Libraries	22	Libraries	19
Post Offices	30	Post Offices	37
Ministry of Health	57		

Broadband – Hospitals and Health centres

Objective:

To enhance the ICT infrastructure within the MOH and its agencies by the establishment of a secure, robust and scalable ICT infrastructure to support the efficient deployment of an array of clinical, public health and management systems, including e-Health applications to health facilities across the country.

Areas of specific focus include:

- Patient Administration System (ePAS) GNU Health
- Laboratory Information System (DISA Labs)
- National Cancer Registry (CANREG)
- GOJ Health Card
- Country Response Information System (CRIS)
- Messaging (Email)
- Site to Site Health Data Backup
- Web conferencing

Next Steps:

Making other applications relevant to the health sector available including:

- Waste Management Solution
- Environmental Health Information System
- Food Handler's Permit
- Psyche Report Solution

Broadband – Police Stations and operational centres

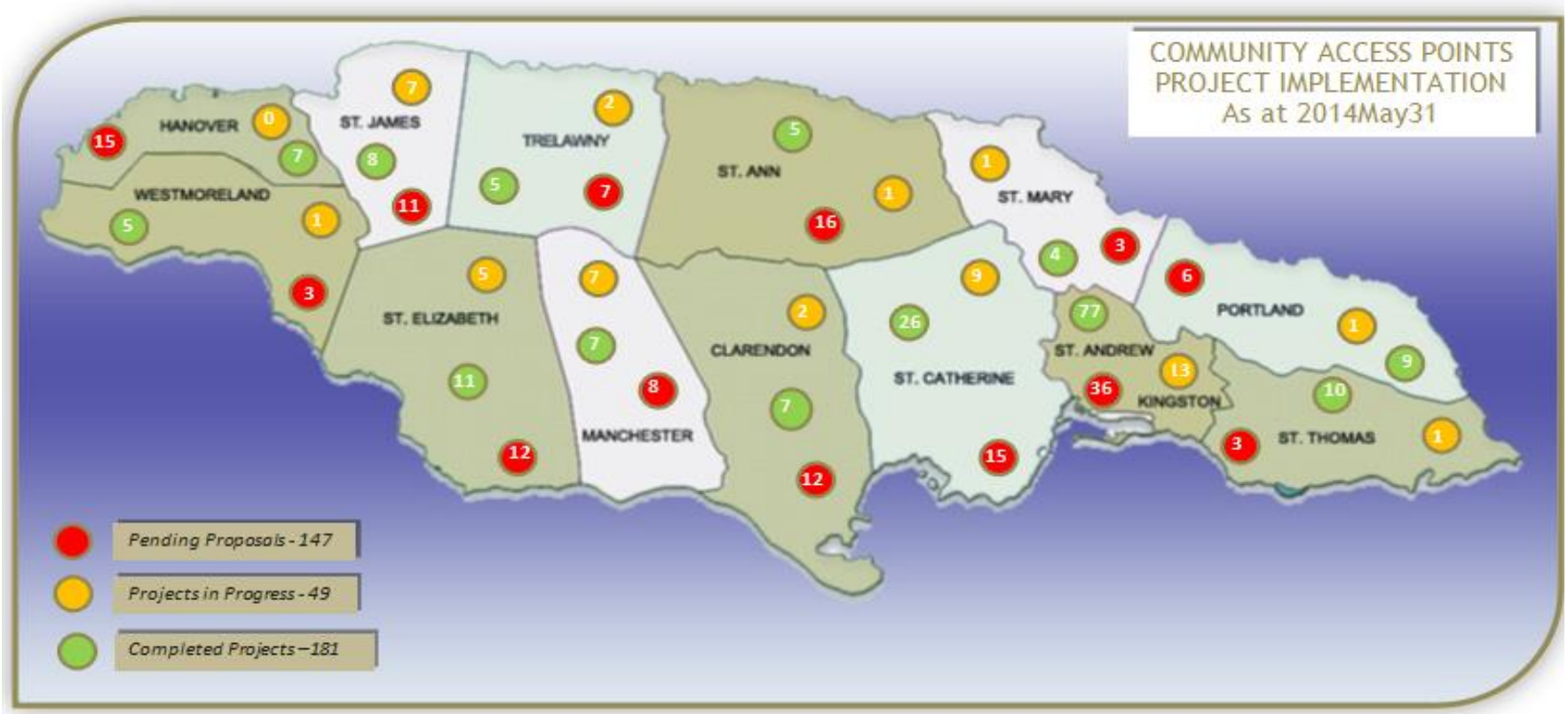
Objective:

To improve the general administrative capability of the Jamaica Constabulary Force's operations, by facilitating efficient communication and transfer of critical information in real time to enhance crime fighting.

Benefits:

- Support island-wide email communication
- Support crime fighting e.g.
  - The Automated Palm and Finger Printing System (APFIS) will more effectively and consistently capture and transmit data from rural locations to the central database in Kingston.
  - The central case management system (CCMS) will enable better sharing of crime information across the country as officers will be able to access the central database.

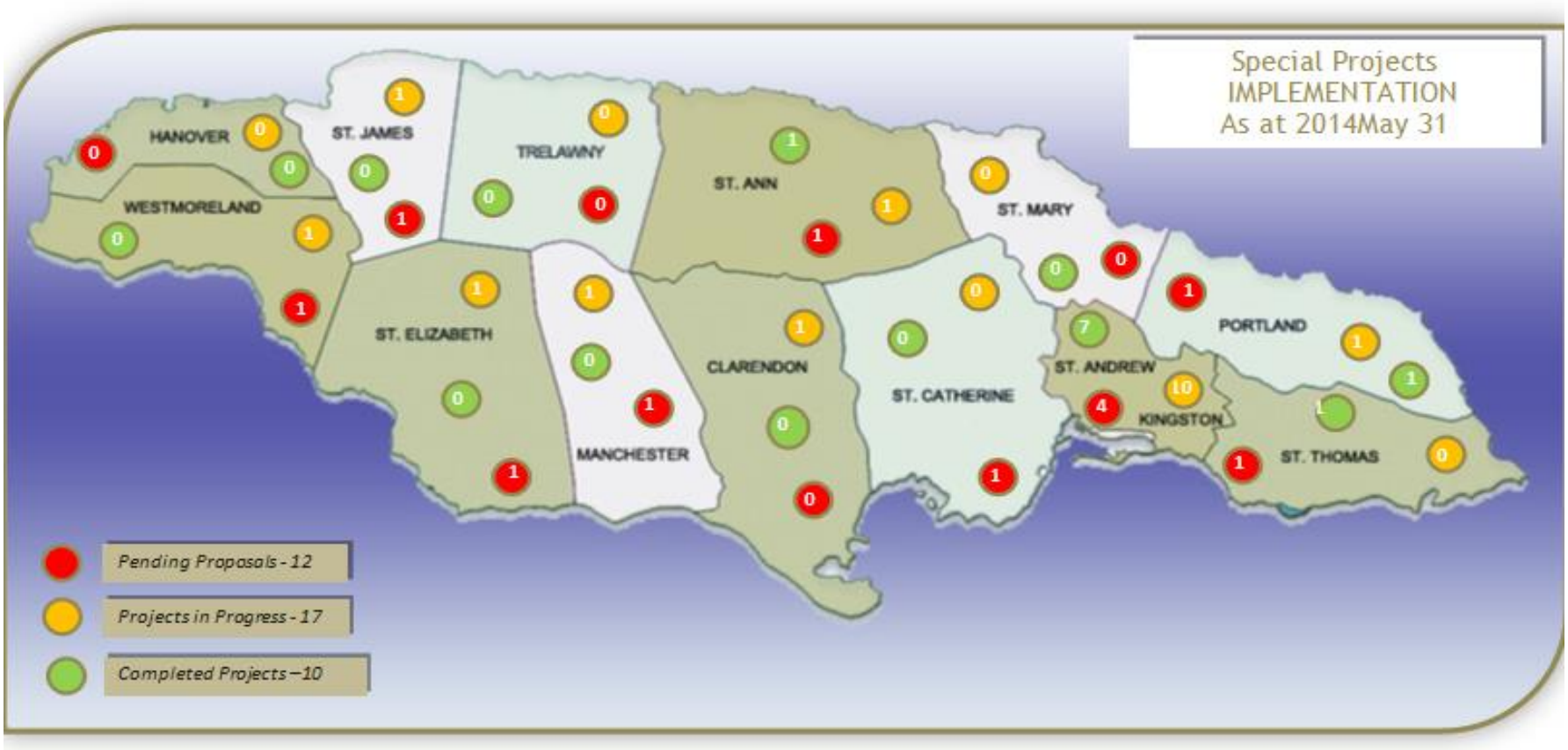
The Government has built out 181 Community Access Points



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 230CAPs as atMay 2014, 181 of which have been commissioned to service.

Broadband Special Projects



Special Projects

The Universal Service Fund has approved funding for 27Special Projects as at May 2014, 10 of which have been completed. Special projects include the following:National Libraries (JLS, NLJ), Security Forces (JCF), Disability Organizations, Postal Corporation,Women Organizations, Courts Services, Agricultural Societies andTertiary Institutions(UWI, CMI, Etc.)

Broadband Special Projects

Project Title	Parish	Description
Jamaica Library Service (2)	Kingston & St. Andrew	Upgrade of computers throughout the Library Network and Software distribution throughout the Library Network.
Police National Centre IT Training	Kingston & St. Andrew	Internet Access and Equipment for IT training
Women's Centre – Kingston	Kingston & St. Andrew	Internet Access and Equipment implementation
Jamaica Association for Deaf	Kingston & St. Andrew	Internet Access and Equipment implementation
Postal Corporation of Jamaica	Kingston & St. Andrew	Internet Access and Equipment implementation for the Central Sorting Office
National Library of Jamaica	Kingston & St. Andrew	Digitization and Online access project
UWI Open Campus - Port Antonio	Portland	IT infrastructure upgrade
UWI Open Campus - Brown's Town	St. Ann	IT infrastructure upgrade
UWI Open Campus - Morant Bay	St. Thomas	IT infrastructure upgrade

Establishment of a Broadband Strategy and Plan (Regional)

Deliverables:

1. Broadband Diagnostic and Infrastructure maps
2. Review of legal and regulatory frameworks and current sector trends
3. ICT awareness and capacity building programs
4. Public Policy recommendations for the design of national broadband strategies

Achievements:

- Scope of work revised following consultations with stakeholders
- Project budget revised
- Commenced work on Component 1 in all 8 beneficiary countries
- Extensive consultant evaluation process completed for Components 2 and 3
- Feasibility of extending beneficiary country listing to Organisation of Eastern Caribbean States (OECS) countries assessed

Next Steps:

- Review the regulatory and institutional framework for each participating country
- Draft report on the status of broadband to be prepared for each participating country
- Seminar to be held to create a Community of Practice for regulators, public officials and experts
- Design national broadband strategies for each participating country
- Develop cost model projections to implement necessary work originating from the Broadband Infrastructure Inventory and Public Awareness in the Caribbean Project (BIIPAC)

Establishment of a Broadband Development Project (local)

Objective:

To obtain a better understanding of the current Geographic Information Systems (GIS) capabilities available within the GOJ that will be relevant to plan for the future design and launch of an interactive broadband coverage map and dashboard which will assist in assessing the broadband coverage in the country.

Achievements:

- EOI and Terms of Reference developed (TOR) - May 2014
- IDB's no objection to EOI and TOR received - May 2014
- EOI published - May 31 and June 2, 2014

Next Steps:

- Deadline for EOI - June 24, 2014
- Contract Signing - August 31, 2014
- Duration of Project - 2 Months

Auction of the 700 MHz Frequency

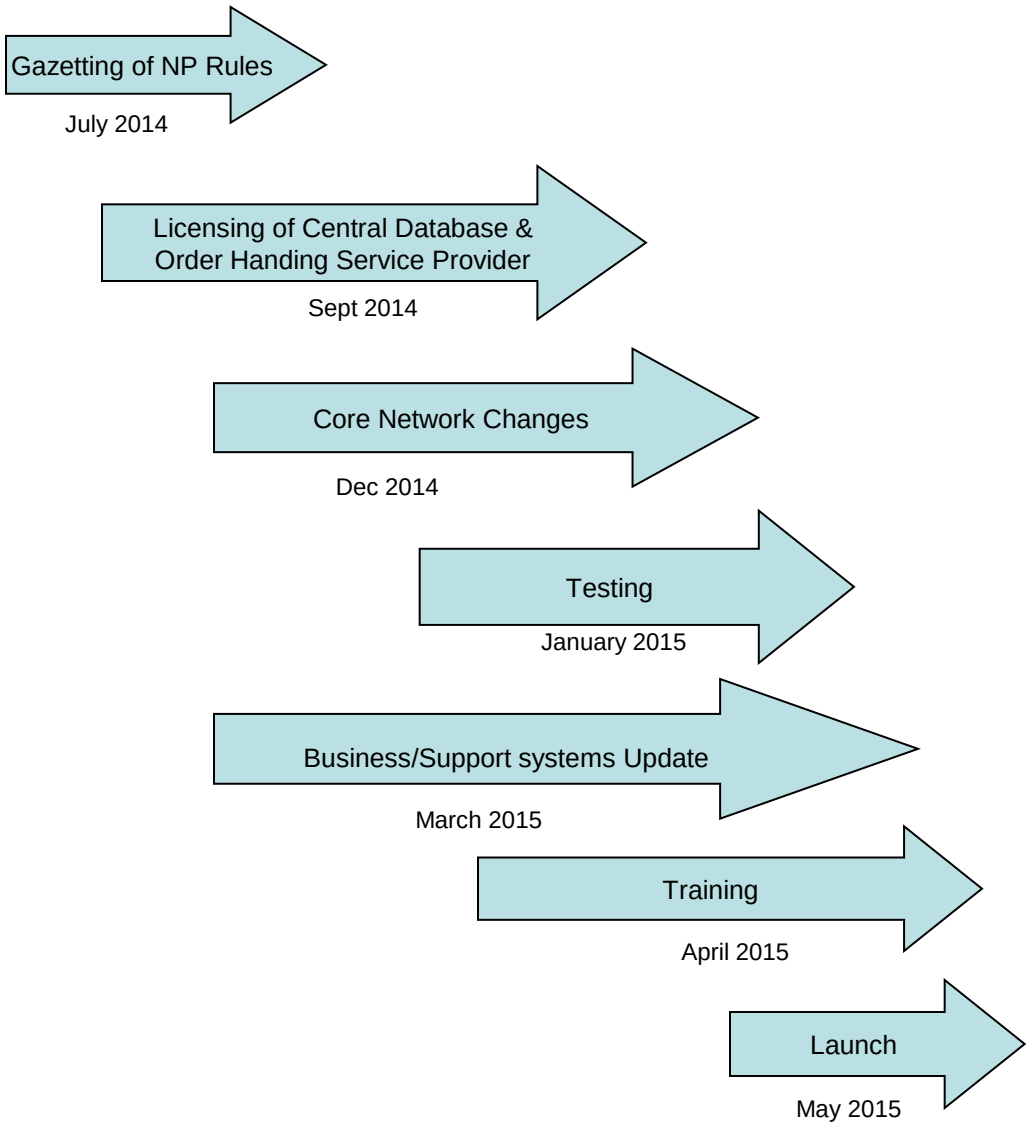
Advantages of 700 MHz Band

- More penetrative and propagates farther. This allows fewer towers to cover a specific geographic area.
- Represents a cost effective option to deploy "fourth generation" (4G) technologies such as Long Term Evolution (LTE). The Band can be used to dramatically reduce the cost of deployment, when compared to the deployment costs for systems operating at higher frequencies.
- LTE allows for:
  - ✓ delivery of data (covering internet applications, video streaming, mobile TV and music downloads).
  - ✓ streaming to mobile devices in higher definition than is possible with existing 3G technologies and at speeds that rival current domestic fixed broadband connections.

Achievements to date:

- Public Consultation - September 10, 2013
- Request for Bid issued - September 16, 2013
- Submission of Bids - October 11, 2013. No Bids received
- Negotiations held with telecom providers - Feb/March 2014 pursuant to Cabinet's approval for negotiations in these circumstances
- Award of spectrum - March 31, 2014 to Digicel for J$2.73 billion (US$25 million). Digicel expected to roll out its services across the island over the next 5 years

Number Portability



Achievements:

• Request for Information issued in October 2013. Nine companies invited to present their Number Portability (NP) centralized database and services offering to the Informal Number Portability Working Group (INPWG). This has assisted the INPWG in scoping the services required as well as with the drafting of the NP Rules.

•Telecom providers (FLOW, LIME and Digicel) agreed in November 2013 to use the local routing number (LRN) method for call routing. This decision cleared the way for the providers to develop detailed plans for the implementation of NP in their networks.

•Number Portability rules developed. Two versions of the Rules have been reviewed by the INPWG to date. Final set of further drafting instructions issued to CPC on April 30, 2014.

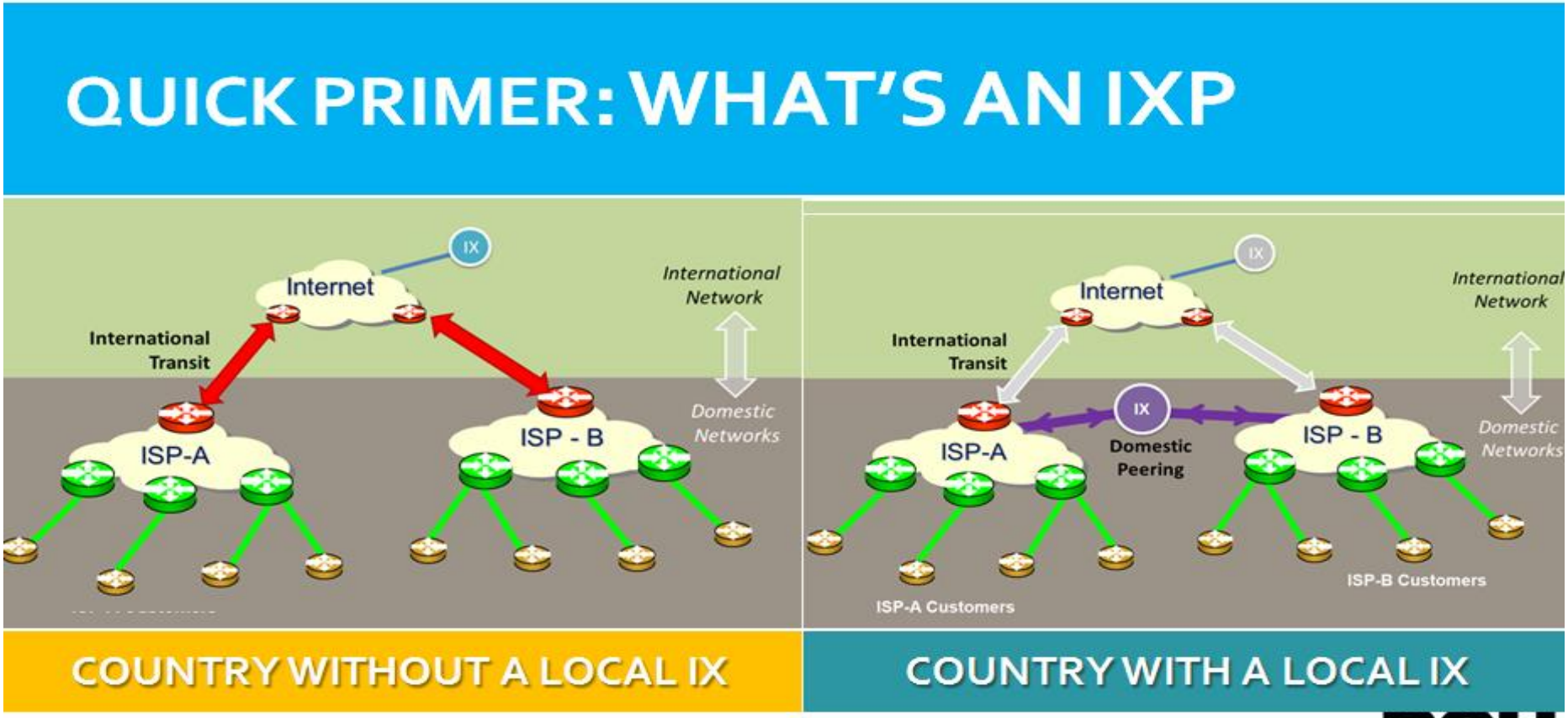
• Several meetings of the Technical, Business & Commercial and Legal & Regulatory sub committees held to address relevant issues which will be part of the industry NP guidelines being developed for all stakeholders including consumers.

• Digicel and FLOW have received necessary internal approvals and are implementing as planned.

Internet Exchange Points (IXPs)

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.



Packet Clearing House

Internet Exchange Points (IXPs)

Benefits

- Domestic websites hosted overseas can be hosted locally reducing transit charges and demand for foreign exchange needed to pay for these overseas hosting.
- Facilitates/encourages the establishment of e-government services being a low cost means to reach online users.
- Encourages international content providers/content delivery networks to bring/build network infrastructure locally to increase their customer base and usage.
- Increase in speed of service for local users.
- Reduction in access cost.
- Implementation scheduled for August 2014.

There is a growing momentum for the establishment of IXPs in the Caribbean

ACTIVE IXPs
BVI
Curacao
Dominica
Grenada
Haiti
St Maarten
St Lucia

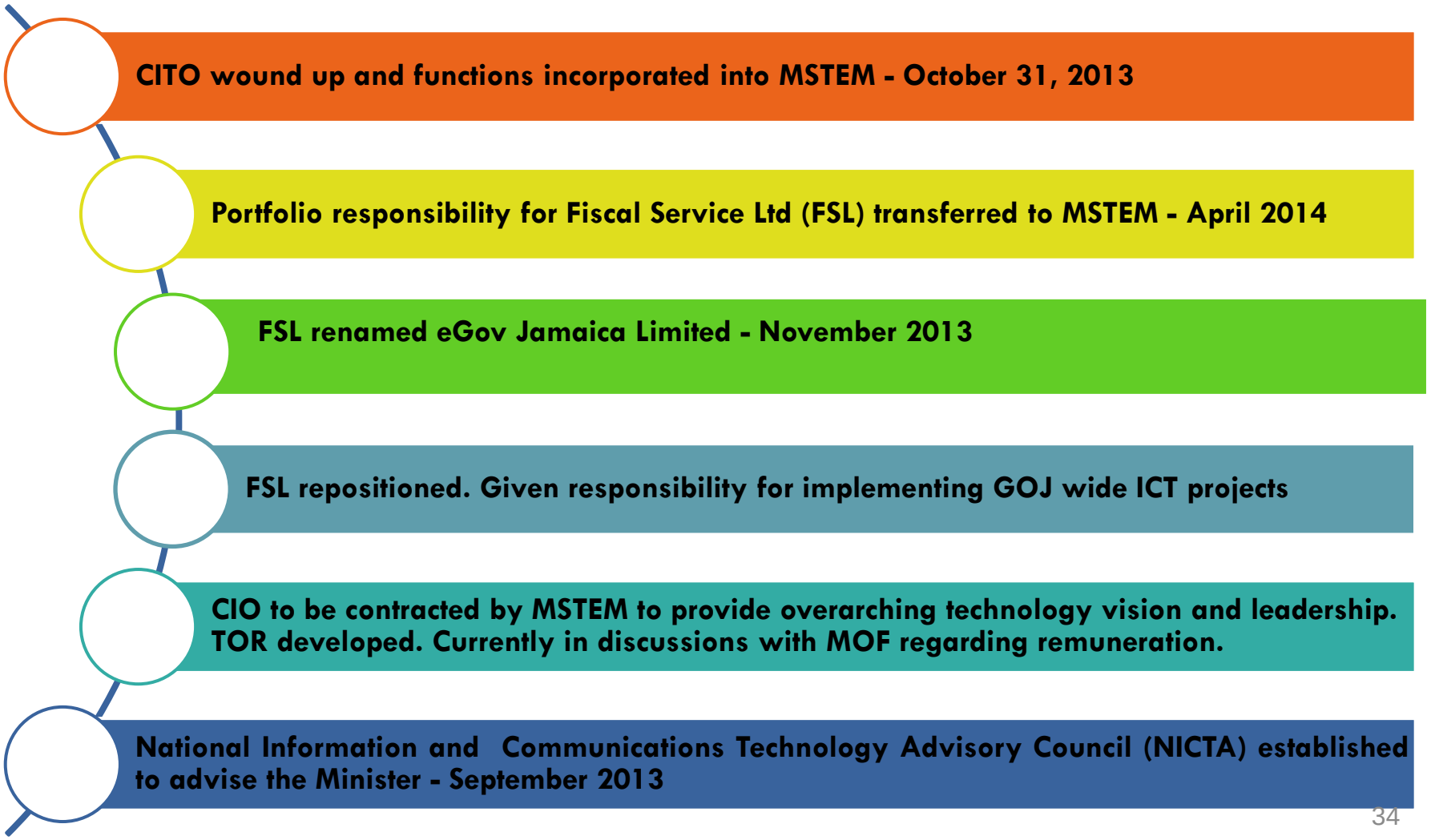
IN PROGRESS
Barbados
St Kitts
Jamaica
Trinidad & Tobago
St Vincent
Suriname

THINKING ABOUT IT
USVI
Antigua/Barbuda

ICT enabled Public Sector Modernization

ICT Governance Framework

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.



GovNet

Objective:

GovNet is to be a secure wide area network backbone communication infrastructure to interconnect Government entities to facilitate shared services, including Data Centre computing services (Gov-Cloud), consolidated voice communication system (Gov-Talk), consolidated email system (Gov-Email), and Gov-Internet, to facilitate cost effective and efficient services to citizens.

The key pillars of the design of GovNet includes:

- Authentication Services – to allow users to use a single credential to access multiple systems and resources across GOJ;
- Endpoint Access and Security – to preserve the confidentiality, integrity and availability of GOJ ICT infrastructure and information assets; and
- Connectivity of MDAs via the NWA high-speed fibre network and communication links from the network services providers as required.

The design for this new conceptualization of GovNet is scheduled to be completed by July.

eLearning - High School Project

Achievements:

- **Component 1 - Instructional Materials**
  - Developed Teachers' and Students' Instructional Materials for 10 of 11 CXC subjects, Interactive Educational Software (for 'challenging' topics), Item Bank (multiple choice and extended questions and answers) and Video Lecture Series.

- **Component 2 - Technology Infrastructure for Storage / Dissemination / Access**
  - 203 educational institutions: 166 public high schools; 6 public special schools; 10 teachers colleges (2 AV equipment only); 5 community colleges (AV equipment only); 16 independent high schools.
  - Provision of ICT equipment (including Servers, Desktops, Laptops, Printers, Multimedia Projectors & Screens, Document Cameras, Scanners, Digital Cameras and related software, Televisions DVD/CD Players, VCR Players, Netbooks in mobile kits, Interactive White Boards (fixed and mobile)

- **Component 3 - Teacher Training**
  - Training and Certification in basic ICT skills (to international standards)
  - Integration of ICT into the teaching/learning process (certification to ISTE standards)
  - Training of select group of lecturers at the Masters level to ensure sustainability
  - Training of librarians to be able to support the users of the e-content provided by the Project

- **Component 4 - Remedial Support**
  - Collaborating with existing remedial interventions providing ICT-based materials and equipment and training of tutors and support personnel.

- **Component 5 - Continuous Assessment**
  - Introduction of standard examinations across the system at grades 7, 8, 9 (Grade 11 CSEC and Grade 10 CCSC, already in place).

eLearning - Tablets in School Pilot Project

Overview of Project

- Distribution of tablets, pre-loaded with content and applications, to teachers and students to allow access to online e-learning content. The tablets have been configured to enable tracking of the device if stolen or misplaced.
- Being implemented in 38 educational institutions as follows covering approx. 24,000 students and 1,200 teachers:
  - 6 pre-primary schools
  - 13 primary schools
  - 5 all age and junior schools
  - 12 high schools
  - 1 special school (Windsor Special School, Spanish Town)
  - 1 teachers college (Sam Sharpe Teachers College, Montego Bay)
- Also involves the distribution of computers and multimedia devices including interactive white-boards/projectors, scanners, printers to pre-primary and primary schools.
- Installation of Wi-Fi at all 38 educational institutions.

eLearning - Tablets in School Pilot Project

Major achievements:

- Identified suitable educational applications to be used on the tablets
- Negotiating with existing publishers for the pre-loading of tablets with available e-books
- Signed contract with four service providers for supply of the tablets
- Trained teachers in basic ICT skills
- Customised training for teachers on how to utilize tablet in teaching
- Developed a Tablet in Schools Policy Manual
- Sensitised schools and parents in the use and care of tablets
- Launched Public Education and Awareness Campaign

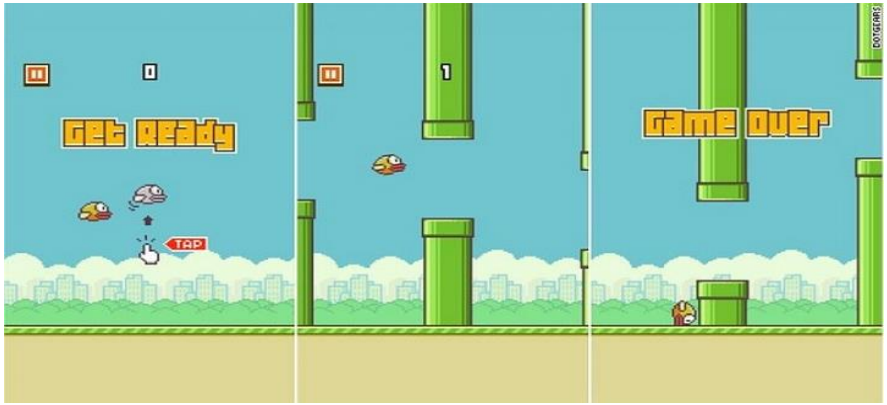
Next Step:

Delivery of tablets for start of new school year – August 2014

ICT Sector Capacity Building/ Innovation Enablement

The success of Flappy Bird is a source of inspiration for apps developers

- The game was developed Dong Nguyen, a 28-year-old who lived with his parents in Hanoi, Vietnam
- He discovered video games by playing *Super Mario Bros.* as a child, and began coding on his own at age 16
- At 19, while studying programming at a local university, he won an internship at Punch Entertainment, one of very few video game companies in Vietnam
- Created and developed the Flappy Bird game over a weekend
- The game went live on the iOS App Store on May 24, 2013
- It was offered free of charge
- 25,000 new apps going online every month
- By February 2014, it was topping the charts in more than 100 countries
- Downloaded more than 50 million times
- Nguyen was earning an estimated $50,000 a day



Digital Jam 3.0

Digital Jam 3.0 is an initiative that seeks solutions to high youth unemployment in Jamaica and the Caribbean via new opportunities in the virtual global economy - including new niches such as microwork, e-lancing and the app economy. It:

- is a regional mobile apps competition;
- provides hands on training workshops introducing youth to online work through Microwork and e-lancing platforms; and
- focuses on tech entrepreneurship, start-up investments (angel investment and crowd funding) and start-up business development.
- Included participants from Dominica, Barbados, Trinidad & Tobago, Antigua & Barbuda and St. Kitts & Nevis:
  - 720 persons formed teams and submitted 180 concepts/ideas
  - 55 teams shortlisted for final pitch

Digital Jam 3.0

Initially resulting in:

- ✓ Establishment of an Angel Investor Network in collaboration with Development Bank of Jamaica (DBJ);
- ✓ 20 of the finalist teams have entered the Entrepreneurship Program for Innovation in the Caribbean (EPIC) virtual incubator established by InfoDev;
- ✓ 2 of the winning teams (CrimeBot and Route876) have entered into an agreement with Microsoft to develop further their ideas and bring their products to market;
- ✓ The Banana Bill game app has been released on Google Play store;
- ✓ More than 100 people employed by the two main platforms used for online training - Mobileworks and Crowdflowers;
- ✓ Participants in Digi-Jam are developing android apps, relevant to the tablet in schools initiative;
- ✓ Strategic partnership between the World Bank and the Caribbean Development Bank to ensure participation of OECS nationals in activities going forward; and
- ✓ Crowd-design of new Youth Employment in Digital and Animation Industries project in Jamaica (US$20 mil) in collaboration with global leaders in the two industries.

Finalists from DigiJam participated in a Mobile boot camp sponsored by EPIC

- EPIC is a seven year $20M program funded by the Government of Canada that seeks to build an enabling ecosystem to foster high-growth and sustainable enterprises throughout the Caribbean. It is implemented by Infodev (http://www.infodev.org/EPIC) – an arm of the World Bank.

- A three-day Mobile boot-camp, focusing on technical and investment-readiness support, was facilitated in April 2014 for a selected group of growth oriented mobile app startups sourced from Digital Jam 3.0, pitchIT Caribbean Challenge, Venture Out Challenge, and Startup Weekend Kingston and Startup Weekend Trinidad & Tobago.
  - This included a total of 26 entrepreneurs from four countries, Jamaica, Barbados, Trinidad & Tobago and Dominica (35% female and 65% male)
  - This included 60% in classroom participants (Jamaica), 40 percent virtually (representing a strong online participation)

- Training covered running technical projects, building startup teams, going global, product and investor pitch practice, and how to secure investment funding. A Dragon's Den exercise was held on the final day where each startup was evaluated on their pitches and provided detailed feedback from the mentors to help them further improve.

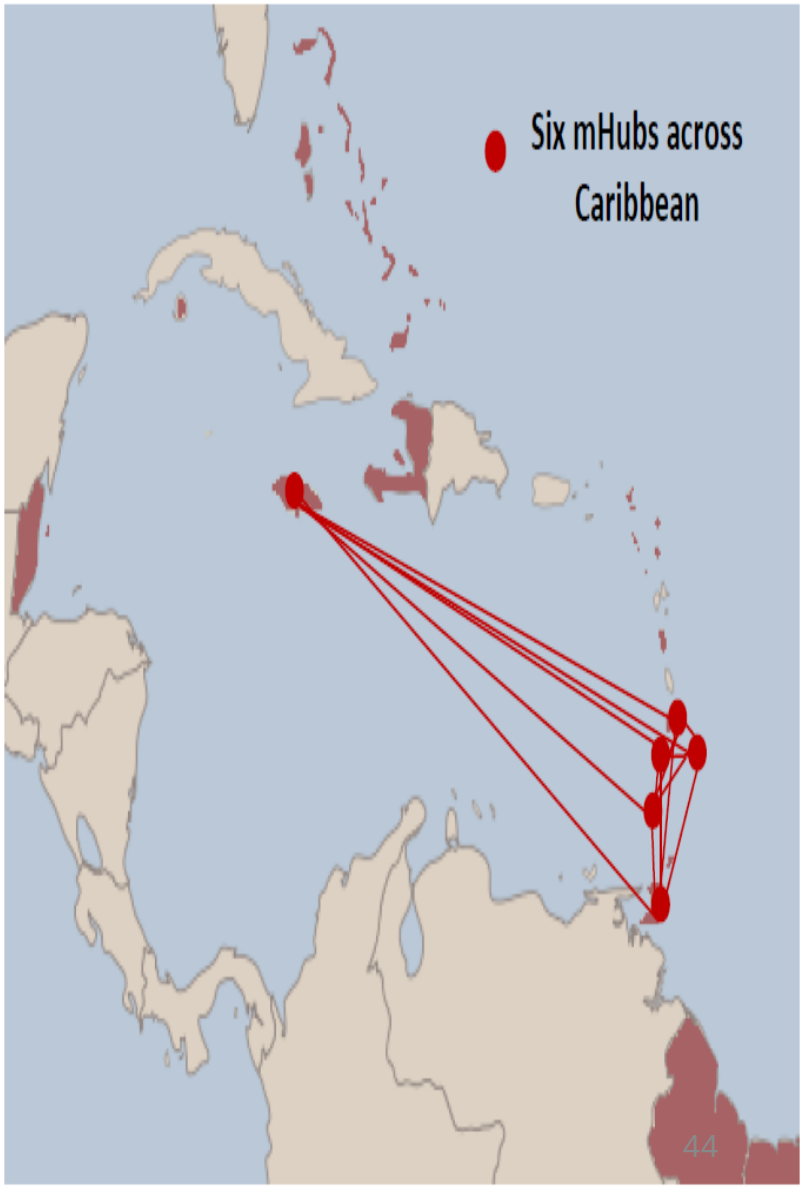
EPIC is seeking to identify 6 mHubs across the Caribbean region

Objectives:

- EPIC Caribbean Mobile Innovation Project aims to strengthen the Caribbean mobile innovation ecosystem and enable sustainable and competitive mobile enterprises to grow.

- **mHubs/mLabs** are specialized business incubation facilities that specifically target the mobile app developer. They identify talented entrepreneurs with high-growth potential ideas and recruit them for incubation. During incubation, the mHubs/mLabs provides entrepreneurs with physical workspaces, state-of-the-art equipment and app testing facilities, back-office support, as well as, technical and business training. mHubs/mLabs also connect incubatees with angel investors, academic experts, private sector companies in the mobile space, as well as, public sector leaders.

- UWI Mona has been selected as the Mobile Innovation Coordinator and will coordinate the 6 mHubs/mLabs. It is envisioned that mHubs/mLabs will be managed by an existing organization on each island.



KingstOOn – Animation festival

An initiative aimed at:

- Raising awareness on the possibilities provided by the animation industry
- Giving visibility to the pool of young talented regional artist
- Identifing key bottlenecks for the development of the industry

KingstOOn was attended by 973 registered participants. The KingstOOn FaceBook page collected 4,300 registrations over the five weeks period from its launch to the actual event, with a reach of roughly 100,000 people per day during the weeks around the event and a total reach of 1,400,000 people in total.

KingstOOn – Animation festival

Achievements:

- First animation Training Program implemented by CARIMAC, UWI. All graduates of the 1st cohort offered jobs before completion of program.
- Presentation of KingstOOn and the potential for the animation industry in Jamaica to industry hubs in Canada.
- Establishment of a working group to design a roadmap for the development of training facilitates in animation.
- Linkages with the broader **Startup Jamaica** strategy being developed by the GOJ, in particular on the development of financing instruments for existing animation studios in search of expansion, or the establishment of new animation studios.

Open Data Initiatives

Background:

Open Government data is a recent initiative where Government Agencies make data that is non-restricted by privacy concerns, freely available for use by the public. Open data has emerged as one of the most significant policy and technological trends within the last 5 years, both globally and in many national contexts. Over 55 countries across the world have formally signalled their commitment to the global Open Government Partnership. In Jamaica, Open Data Pilot initiatives are being led by the UWI – MSBM and Pilot projects are being developed in both the Agriculture and Tourism sectors.

Recent Initiatives:

• MSBM in collaboration with Slashroots completed Open Data Pilot project with RADA in the Ministry of Agriculture: that developed/demonstrated the potential for Apps that help in targeting Praedial Larceny.

- ✓ CLIP - is a mobile App that will enable the police to have instant and mobile access to RADA's Farmer Registration and Receipt book databases via SMS.
- ✓ HARVESTAPI - an open-data platform for enabling better sharing of agriculture sector information

• Other exploratory initiatives implemented in Tourism, Education & GOJ Budget that demonstrate the potential for Open Data to become a catalyst for improved public service delivery and innovation.

Milestones:

• UWI currently completing a study on the potential economic impact of Open Data on the Jamaican economy that will help to inform GOJ Policy - July 2014

• GOJ in discussion with the World Bank to undertake an Open Data Readiness Assessment for Jamaica- Sep 2014

• GOJ to establish an Open Data Policy and official Open Government Data Portal - December 2014

Mobile Money for the 'unbanked'

Background:

- Research conducted by UWI shows that 34% of the adult population in Jamaica do not own bank accounts (*unbanked*). Of the 66% that own a bank account, only 12% own transactional accounts (*Highly Banked*). Therefore, over 80% of adult Jamaicans have limited access to a low-cost, efficient and easily accessible payments channel.

- Mobile Money holds great promise as an effective means of increasing the efficiency of domestic commerce and extending financial services to traditionally unbanked consumers, with the potential to enhance financial inclusion which is an important development indicator. A readily accessible payment channel via the mobile phone can also indirectly lead to job creation and innovation by providing entrepreneurs with access to a more vibrant, inclusive financial sector.

Achievements:

- The Central Bank (BOJ) has issued Guidelines for Electronic Retail Payments Services which now opens the door for the establishment of a national mobile payments ecosystem.
- Legislation passed in June 2014. The passage of the legislation has paved the way for commercial banks and other deposit taking institutions to begin to use agents in order to offer banking services to a larger proportion of the population.

Mobile Money for the 'unbanked'

Banks will be allowed to use agents to deliver a range of banking services to include:

- Cash deposits and cash withdrawal (within specified limits);
- Cash payments of bills and loan repayments;
- Transfer of funds;
- Balance enquiries; and
- Collection of documents from customers in relation to account opening and loan applications.

DBJ has been granted approval under the Custodian Account Based Payment Service to offer:

- Microfinance loans
- Loan Repayment
- Balance Checkup
- Bill Payment
- Person-to-person transfer/payment
- Person-to-business transfer/payment

The pilot project is now in an advanced stage of completion with the start dates for key activities including the LIVE roll-out to microfinance institutions and sub-borrowers being set for July 2014.

BOJ has received 13 applications inclusive of DBJ and Jamaica Co-operative Credit Union League, from various entities for authorization to provide electronic retail payment services primarily using mobile devices.

Next Steps:

BOJ is in the process of preparing the necessary regulations to detail the criteria to be met in order for Banks to utilize agents in the delivery of mobile banking services.

The Kenyan case study – M-Pesa

- M-Pesa launched in 2007 by telecoms firm Safaricom, the Kenyan affiliate of Vodafone.
- Currently has 45,000 agents serving 18 million customers.
- 43% of the country's GDP flows through M-Pesa.
- Has lifted financial inclusion from 23% before its introduction to 80% today.

<u>A mobile money product</u>

- M-Shwari – virtual bank account used on mobile phone. Users get a formal bank account that they can save and borrow from.
- Kenya's Central Bank estimates $200 billion Kenyan shillings (US$2.3b) in informal savings (under-a-mattress).
- M-Shwari moves it into the formal system.

A study shows major benefits from using mobile money for cash transfers

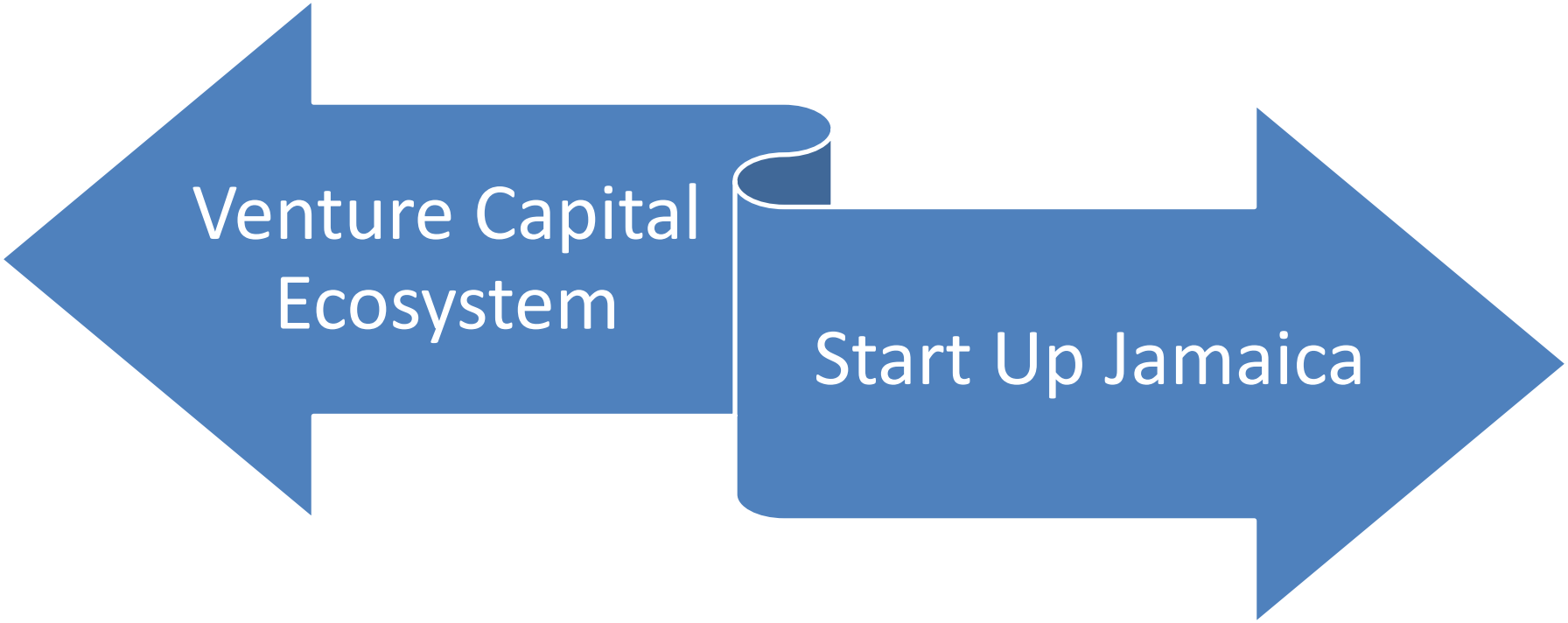
- The potential for GOJ to consider the disbursement of Government-to-person (G2P) micro-payments, such as PATH benefits, through the mobile phone promises significant benefits in terms of reduced labour intensity and cost of delivery for the Government agency as well as amplifying the developmental benefits associated with the PATH program by facilitating access for beneficiaries to a wider scope of financial services.

- The study showed, that if piloted through the PATH program in Jamaica:
  - the introduction of a low-cost mobile retail payments system could be a strong driver of financial inclusion;
  - it is a more efficient commerce and potentially a significant enabler for business/ICT-sector innovation; and
  - high volume G2P micro-payments such as PATH payments have the potential to be a significant early candidate and a catalyst for encouraging the rapid adoption of mobile payments.

Microsoft Innovation Centre

- Microsoft, UWI, Jamaica National Building Society (JNBS) and other members of the Private Sector community continue to work towards the establishment of a Microsoft Innovation Centre (MIC) in Jamaica.
- The Funding Launch Luncheon, which was held in Dec 2013, has triggered good support and plans are progressing as expected.
- Under the banner of the MIC, four workshops have been held between Kingston and Mandeville in the past year, resulting in:
  1. the creation of a community of high school and college level developers of over 100 students;
  2. the launch of a successful mobile game on the Windows platform from Jamaica – Jungle Escape. This game has seen over a 400,000 downloads worldwide! Nicolas Brown is the young developer behind this game app; and
  3. placement of a Jamaican team in the Microsoft Imagine Cup World Finals (after a four year hiatus). The team leader Orane Campbell from the University College of the Caribbean, is ably supported by team member Nicolas Brown from the Northern Caribbean University.
- This demonstrates that the depth of talent in the country, and the success of our students in the ICT domain, can be harnessed through the collaboration of multiple universities and through the relationships fostered by the MIC community.

Innovation Enablers



Jamaica Venture Capital Ecosystem Project

- The DBJ, with technical assistance from the IDB, is implementing a number of initiatives aimed at facilitating venture capital and private equity transactions in Jamaica. The program includes the establishment of an appropriate legal and regulatory framework, improving the expertise of local fund managers and investors through workshops and other training events.
- The DBJ will further strengthen capacity building initiatives aimed at improving the readiness of eligible entrepreneurs for investment, through collaboration with local academic institutions, the private and public sectors.
- Initiatives such as business model competitions, pitch events and incubation and acceleration program such as Startup Jamaica, are among the programs which have received strong support through the venture capital program.
- Local institutional and corporate investors, along with the DBJ, are collaborating in an effort to foster the establishment of venture capital funds in Jamaica, and a Call for Proposals from such fund managers will be issued during this quarter. The establishment of an Angel Investor Network is also underway to support new entrepreneurs, particularly in the ICT sector.

Jamaica Venture Capital Ecosystem Project

Achievements:

- Hosted Jamaica's first Venture Capital Conference in September 2013 with local and international participants and presenters which has resulted in Jamaica's budding venture capital industry now being on the radar both locally and internationally.

- Identified the legal and regulatory changes to be made in order to establish a suitable venture capital regime. These recommendations will be submitted for consideration to the MOF and the Cabinet, during FY 2014/2015.

- Sponsored the National Business Model Competition and Digital Jam 3.0 to encourage and promote the creative and innovative thinking of our young people, facilitate local entrepreneurial skills, and enhance collaboration and communication between the private sector stakeholders and our youth. The winner of this competition placed 8th out of 42 international competitors in the International Business Model Competition in Utah, USA during May 2014, and also won the International Business Model Award.

- Sponsored an angel investor roundtable to sensitize local investors on the potential opportunities which could arise from the establishment of an Angel Investor Network in order to facilitate quality deal flow in the local market.

Jamaica Venture Capital Ecosystem Project

Planned Activities:

- Conducting of extensive and detailed Venture Capital and Private Equity (VC/PE) knowledge-building activities through training workshops, conferences, seminars and other educational initiatives.
- Training of Venture Capital entrepreneurs through partnerships with local agencies and universities, in order to promote a deal flow of eligible projects.
- Institution of a communication and change management plan, aimed at fostering cultural changes, particularly among entrepreneurs.
- The establishment of new and enhancement of existing supporting infrastructure, including incubator networks, accelerators, venture forums (for presenting to investors), mentoring and advisory services.
- Supporting the newly established Angel Investor Group through facilitation of training and linkages with local stakeholders.
- The accessing of funding and technical assistance from IDB, World Bank/IFC and other development partners.
- The establishment of a Private Equity and Venture Capital Association in Jamaica to provide leadership of the VC/PE industry by the private sector.
- Obtain a rating for Jamaica on the Latin American Venture Capital Association (LAVCA) Scorecard.

Start Up Jamaica – Accelerator Program

Concept:

- 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 accelerator is a physical facility which takes equity in start-up companies that go through an intensive selection process, in return for seed capital, training and mentorship. The accelerator programme is generally delivered over a three to four month period at the end of which the portfolio companies 'graduate'.

- Start-Up Jamaica partners:
  - LIME
  - Jamaica National Building Society
  - DBJ
  - Oasis 500 (www.oasis500.com) an early stage and seed investment company from Jordan

Who is Oasis 500?

Oasis500 is the first development and early stage & seed investment company of its kind in the Middle East and North Africa (MENA) region. Its program is aimed at supporting entrepreneurs by providing them with funding, training, incubation, coaching, and mentoring in order to accelerate the transformation of business ideas into start-up companies. Oasis 500 focuses on ICT, digital media, mobile technologies and digital content.

Since commencing its operations in September 2010, in Jordan, Oasis500 has invested in 74 technology companies, which is unmatched by any other investment fund in the region. Many of those companies secured additional follow on investments of more than $14 million with the help of Oasis500. Furthermore, Oasis500 has trained more than 1,500 people (from more than 4,700 applicants) in 30 boot camps.

Oasis 500 has a proven model that covers and integrates all components of the investment /acceleration supply chain. This has been further augmented by Oasis 500 expansion strategy in the Middle East and North Africa: currently in Saudi Arabia and Dubai with plans that include Palestine, Morocco and Tunisia.

Start Up Jamaica Operational Plan

- Launch advertising campaign in traditional and social media

  Use Oasis 500 model to register participation in bootcamp

  Start recruitment process

- Bootcamp run by Oasis 500 with support of local SUJ team

  Teams prepare pitch and send it to Oasis 500 investment teams for review

  Company incorporation process begins

  ½ additional training for SUJ team on Business Model (Train the trainers type)

- Individual pitching sessions with Oasis 500 team via Skype

  SUJ team will participate to gather additional hands-on experience

  Teams selected will be sent to Business Model 2-day training

- 2-day Business Model training delivered by SUJ team

  Informal pitching sessions to Oasis 500 to refine pitches (via Skype)

- Pitching to panel of Jamaican CEOs who will provide feedback to them

  Oasis 500 will attend via Skype

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