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The Developing the Caribbean Conference & Code Sprint is a product of a unique collaboration of Caribbean and International organizations. This report was produced by the SlashRoots Foundation with contributions from country partners.

Report Editor: Matthew McNaughton

Contributors: Maurice McNaughton, Kyle Defraites, Yoandy Pérez Villazón, Abel García Vitier, Ayanna Samuels

Regional Coordinators: Caribbean Open Institute, SlashRoots Foundation

Country Coordinators: Department of Computing, University Of The West Indies, St Augustine (Trinidad); Centre of Free Software, Universidad de las Ciencias Informática (Cuba); Mona School of Business & Management & SlashRoots Foundation (Jamaica)

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Thank you for helping build a more open and collaborative Caribbean region.
The Caribbean’s Open Data movement is a rapidly growing community. Since the previous DevCa event, Jamaica, the Dominican Republic, St. Lucia and Trinidad & Tobago have all launched official Open Government Data programmes, three of which include Open Data Portals. The World Bank ICT Unit has launched a regional Open Data support programme to complement the existing civil society and research-led initiatives. The Developing the Caribbean Conference & Code Sprint has become the annual gathering of this community.

The 2015 hosting of DevCa brought together more than 340 attendees participating in 8 events across 4 countries. The event expanded from two-day event to a month long series of activities, creating a “big tent” in which distinct communities can find common ground to share experiences, lessons learned from ongoing work, and collaborate to unlock the potential greater adoption of open data and digital government can have on the Caribbean’s development.

While the code sprint remained popular, many new partners came aboard to celebrate and promote open data through new ways. These events and activities ranged from technical workshops and data visualization code sprints to the launch of a open data research initiative. In Trinidad, the local organizers partnered with the Caribbean Telecommunications Union to organize an Open Data Track as part of their 25th Anniversary ICT Week Celebration. Cuba, through the leadership of the CESOL, became the largest DevCa Code Sprint side with more than 50 participants. The DevCa event also saw the launch of the Caribbean first regional open data portal, openCaribbean, which aims to increase the accessibility of Caribbean data.

We continue to be excited by the direction of open data in the Caribbean, even as there much work still to do. DevCa plays an important role in driving the discussion and we are thankful for the sponsors, local organizers, attendees, data contributors and code sprint participants that make it possible. We look forward to seeing you all in 2016.
The Trinidad & Tobago leg of the Developing the Caribbean Open Data Conference and Code Sprint was held on the 5th and 6th of February in association with the Caribbean Telecommunications Union as part of their 25th Anniversary ICT week celebration. In recognition of the increased importance of Open Data in Caribbean, the CTU, who have participated in previous DevCa TT events, invited the DevCa TT organizers to lead an open data track of their ICT Week celebration.

CTU’s ICT week brought together Heads of State, Ministers, Policy makers and practitioners from across the region and beyond. The collaboration with DevCa TT assisted in both raising the profile of Open Data amongst these groups, and provided a platform for discussing the potential impact of open data in Trinidad and the rest of the region.

Building on DevCa’s tradition of partnering with Government agencies to publish new open data each year, for DevCa 2015 local organizing teams were encouraged to engage data owners not only as suppliers of data, but also as problem owners and mentors during the event itself.

The aim of this deeper collaboration was to:
- Provide better guidance for the teams participating in the code sprint through domain experts
- Create channels for interactions between innovators and data custodians that would otherwise not exist
- Demonstrate tangible use cases to data owners for how their data could create value through partnerships with innovators outside of their organizations.

For DevCa TT the following agencies provided data and mentorship to the participating teams on specific domain areas:
- The Meteorological Office of Trinidad and Tobago - Marine & Meteorological Services
- The Telecommunication Authority of Trinidad and Tobago - Telecommunication
- The Guardian Media Trinidad Ltd - Security & Justice
- University of the West Indies, Department of Computer Science - Agriculture
Code Sprint
The teams participating in the DevCa Code Sprint were drawn from a wide cross section of interest groups, representing students from multiple tertiary institutions, developers from private companies and as well as from a number of government IT departments (particularly Science and Technology & Public Administration). Fifteen (15) teams consisting of five (5) individuals each participated in the code sprint.

Representatives from the supporting organizations made presentations at the opening of the Code sprint to the participating teams. These presentation gave participants a better appreciation of the challenges and opportunities from the perspective of the data providers.

The top team in DevCa TT build an API around education data from Jamaica. They created algorithm for ranking schools in specific geographic areas that other developers and data analysts could use.

Key Outcomes & Next Steps
• The Meteorological Office, one of the most supportive data contributors, has committed to ensuring more data is available for access in open formats
• Developers and partners that participated in the DevCa TT event were invited to participate in the World Bank’s Open Data Readiness Assessment for the Government Of Trinidad & Tobago. The Government is in the process of implementing a Government Open Data Programme.
• A small local group of developers that were interested in exploring more ideas on open data beyond the single yearly competitions.
• Developers in government agencies have a greater appreciation for open data. The DevCa TT team is planning to leverage this interest to encourage the creation of APIs or ensuring datasets be updated in a timely manner for true value to be realized.
Partners
Caribbean Telecommunication Union
- Support with participation mobilization
- Accommodation (Hyatt Regency, Port of Spain)
- Offset of cost for food and other related event expenses

Meteorological Office Trinidad and Tobago
- Historical and Spatial Datasets
- Mentors to help development teams

Caribbean Telecommunication Union
- Cell tower and recent census (stored on data.tt)
- Mentors to help development teams
On March 5th and 6th the Universidad de las Ciencias Informáticas (UCI), located on the outskirts of Havana, Cuba hosted DevCa Cuba 2015. An integral partner in the DevCa movement, the activities in Cuba are coordinated by the Centre of Free Software (CESOL), a department of the University.

While Cuba does not yet have its own open data initiative, the UCI has been a long-time advocate and thought leader on the adoption and utilization of open source software in Cuba and the region. CESOL, a software centre based at the UCI is home to Nova Linux, a Cuban Linux Distribution, and recently launched their own Android Innovation Lab. CESOL has played an integral role in the growth of the DevCa movement, and this year became one of the largest Code Sprint events in the Caribbean.

The DevCa CU 2015 programme was launched by Dr. Lizandra Arza Pérez, Director of Research, who urged the participating developers to maximize use of their creativity over the course of the 2-day event. Also present at the opening, were Silvano Merced Len, Dean of Faculty; Delly Lien González Hernández, Vice Dean for Research and Graduate Studies; Yoandy Pérez Villazón, Director of the Center for Free Software and Abel García Vitier, lead coordinator of the local organizing committee.

With an active participation of 20 registered teams consisting of more than 50 designers, developers and domain experts, the competition saw teams exploring and building innovative software applications to provide tangible solutions to a range of Caribbean problems using open data. The 24-hr event provided an opportunity for UCI students to hone their skills, create re-usable software public goods and increase the profile and visibility of the institution in the Caribbean software development and Computer Science community.

At the conclusion of the 24-hr codesprint the participating teams presented new and innovative software approaches to indigenous Caribbean challenges that were also being tackled by software developers in Kingston, Jamaica and Port-of-Spain, Trinidad & Tobago.

The top 3 apps from DevCA CU 2015 were:

• @Spot: an application that promotes small businesses outside the mainstream tourist areas providing a diversified product for tourists interested in exploring into lesser known attractions off the beaten track.
• CMIP Convergence platform: provides an online Registry and map-based visualization for stakeholders and initiatives in the Caribbean mobile ecosystem. The App identifies and recommends potential business and collaboration opportunities based on stakeholders functional area and the initiatives types.
• RDF Coauthorship Network: Several international institutions such as ACM, IEEE and DBLP publish their bibliographic metadata as linked data. RCN provides web tools to detect, identify, quantify and visualize existing communities in these bibliographic metadata from RDF graphs.

DevCA CU 2015 was an integral part of a larger regional initiative that celebrates innovation and collaboration, and was made possible thanks to individuals, organizations and communities from across the region that come together to share ideas and information to create something bigger than any single entity could do themselves – a core philosophy underpinning the vision of a Caribbean Digital Commons.
On March 5th and 6th, the Mona School of Business and Management and the SlashRoots Foundation hosted Jamaica’s 4th annual Developing the Caribbean Conference and Code Sprint event. DevCa Jamaica, the birthplace of the Developing the Caribbean movement, continued its tradition as the region’s marquee platform for discussing open data, ICT4D and civic technology.

Since the conference’s inception in 2011, interest in Open Data amongst policy makers, academia, development institutions, and government agencies across the region has steadily increased. While motivations for adoption vary, DevCa has become a common platform to share research, lessons learned and future plans on the topic of open data and technology innovation in the Caribbean development community.

Globally, attention on the open data as a catalyst for economic growth has increased, with a number of governments and research studies supporting its real world impacts. These include publications such as the Governance Lab’s Open Data 500 and McKinsey’s “Open data: Unlocking innovation and performance with liquid information” estimated the economic value contribution of Open Data to the US economy to be over US$3 trillion. Similar to many countries in the Caribbean, Jamaica has struggled to sustain economic growth and restructure its economy to be competitive in the increasingly globalized landscape. With both economic growth and national debt reduction overarching policy priorities of the Jamaican administration, the DevCa organizers focused the 2015 Conference theme on how Open Data could contribute the driving efficiency and creating economic value in the Jamaican economy.

Conference topics and panels spanned research estimating the potential economic value open data could unlock in key sectors of the Jamaican Economy, its potential impact as a catalyst for entrepreneurship, the current state of open data landscape in Jamaica, and practitioner reflections from ongoing work in sectors such as agriculture and tourism. The event attracted over 150 conference attendees and 40 code sprint participants over the two days.

**Conference Recap**

The potential of open data as a catalyst for growth and structural reform to sectors of the Jamaican economy was the dominant theme of Devca 2015. A recently released study by the Caribbean Policy Research Institute and the Mona School of Business estimated the potential economic impact of adopting open data in the agriculture, tourism and education sectors to the Jamaican economy to be over US$272 million. This research, in conjunction with increased policy engagement by the World Bank and the evolution of open data initiatives spearheaded by organizations such as the Caribbean Open Institute and the SlashRoots Foundation have continued to build local momentum around the topic.
The opening panel of DevCa 2015 set the tone for the event with context on the global momentum and community surrounding open data, the opportunities it presented for Jamaica, and the progress being made to craft Jamaica’s own open policy framework. It included presentations from the Honorable Julian Robinson, State Minister in the Ministry of Science, Technology, Energy & Mining, Anat Lewin, ICT Policy Specialist at the World Bank and Professor Densil Williams, Executive Director of the Mona Schools Of Business & Management.

The morning session concluded with an insightful discussion on the findings of CAPRI’s research paper on the Economic Value of Open Data. The discussion, led by Dr Christopher Tufton (CAPRI), also included Ricardo Williams (Tourism), Craig Perue (Research Fellow-Education), Dr Maurice McNaughton (MSBM and Co-author of the paper) and Prasanna Lal Das (Lead Program Officer, World Bank) as discussants. Preceding the panel, Mr Lal Das shared case studies on how Open data was driving economic growth and innovation in other parts of the world.

The afternoon session saw the focus shift to sectoral discussions in agriculture and tourism. With global food production needing to double by 2050 to combat hunger, malnutrition and and meet the needs of world’s growing population, agriculture can be an important conduit for growth of the Jamaican economy for many years. However, while an estimated 18% of the Jamaican population is employed in the sector, systemic challenges such as praedial larceny, small-farmer efficiency and market linkages continue to hinder the sector’s development and ability to be competitive on the global scale. Innovators from RADA, SlashRoots and startup companies AgroCentral and Node420 shared how they were using and enabling greater access to data to build a more data-driven agricultural sector could assist with ad-
dressing these challenges.

The agriculture panel was followed by the launch of the Caribbean Open Institute’s Open Data Sector Studies, a research initiative documenting readiness and opportunities for adoption of open data at a sectoral level across the Caribbean. The Sector study initiative is being executed by researchers across the Caribbean and focused on Education, Agriculture, Fisheries, Tourism and National Statistics. Dr Maurice McNaughton, Director of the Caribbean Open Institute, shared the scope of the Sector study initiative and launched the accompanying Caribbean Open Data Census, a ranking of openness of Caribbean islands in the target sectors. Dr. Michelle McLeod presented early findings from her study on the Tourism sector.

Day Two of the Conference provided a practitioner’s guide to the emergent tools and approaches that are increasingly being employed by innovative teams in the public and private sector to leverage open data. This field of innovation has come to be known as Civic Tech.

The Opening Session, “Civic Tech -- A new Stack for designing services and experiences” featured presentations on Research, Design Thinking, Continuous Deployment and the role of Storytelling in the Product Development process. Dr Sameer Verma opened the panel with a presentation on the role of Academia in the emergent Open Data and Civic Technology ecosystems, through his experiences at San Francisco State University. Dr Verma was followed by David Soutar of the SlashRoots Foundation and Kenia Mattis of ListenMi Caribbean. Both spoke on role of design in the product development processes of their organizations. David shared how SlashRoots is applying design thinking, participatory methods and agile software development to design more citizen-centred public services. On
the other hand, Kenia shared how she been applying participatory storying in the development of League Of The Maroons, the Caribbean’s first graphic novel based on indigenous folk stories. To close the panel, Shawn McLean gave an introduction to “Continuous Delivery”, a engineering workflow approach that the best companies are utilizing to both increase the speed and quality of the software they deliver to their users.

This last session of the morning, “Civic Tech -- Startups & Data”, focused on opportunities for companies to leverage data and the experiences of companies that were early movers in the Jamaican ecosystem. Prasanna Lal Das (World Bank) gave another presentation on the global context and progress being made by startups utilizing open data. He was followed by Winston Wilkins, CEO of Startup Robot, a startup aiming to streamline the business registration and compliance process for companies. Winston shared his view on the potential synergies and opportunities for the private sector to augment traditional government services if more open data was published. The final panelist, Chris Whitfield, Co-founder of Antuilla a travel search company, demonstrated how his company utilized data to assist consumers finding travel experiences using natural language searches. Chris shared his thoughts on the impact the lack of data available on Jamaica’s tourism products was having, how his company was addressing it and where more open data could catalyze growth. The session closed with a panel discussion chaired by Robert Whitehorn, Project Manager of PitchIt Caribbean.
The second half of the day focused on the Code Sprint, with presentations from the participating teams and the announcement of the competition winners.

**Code Sprint & Partner Engagement**

As with other DevCa Code Sprint sites, the organizers of DevCa Jamaica worked closely with domain experts and problem owners for DevCa 2015. In response, several partners came on board to contribute data, expertise, and mentorship on problems in various sectors for the code sprint participants. These organizations included:

- The Consumer Affairs Commission
- Rural Agricultural Development Authority
- PitchIt Caribbean
- Education

The top 3 apps developed during the code sprint were:

1. **Ambizi** - A crowdsourcing application for mapping the Caribbean tech ecosystem. Ambizi was built in response to the PitchIt Caribbean Ecosystem Map Problem statement.

2. **FarmScore** - FarmScore is a credit score generator from farmers based on economic, physical, and environmental factors.

3. **It Cheap** - A supermarket price comparison tool to assist consumers with determining which supermarkets offered the deals. The application that utilized the open data price information published by the Consumer Affairs Commission in Jamaica.
Partners & Sponsors
Having become a platform for critical discussion and reflection on open data and technology innovation in the Caribbean, each year new partners come on board to share their experiences and show their support for the conference’s objectives and values. In 2015, in addition to a number of corporate team sponsors, DevCa JA organizers collaborated with the World Bank, PitchIt Caribbean and government agencies such as the Consumer Affairs Commission.

The World Bank ICT Unit is currently leading a Caribbean Open Data Programme, which includes country specific programmes in Jamaica, Trinidad & Tobago and St. Lucia. There were natural synergies between the public sector agen-
In addition to the event partnerships, a number of companies sponsored teams in the Hackathon. These included Trafalgar Travel, Fujitsu, eLearning Jamaica, MC Systems, Spatial Innovation
For the 2015 hosting, DevCa grew beyond a two day regional conference and code sprint to a month of activities in response to growing interest and diversity of open data activities across the region. While the code sprint model remained popular, many new international partners and local organizers came on board to add new ways to celebrate and promote civic engagement and innovation across the Caribbean.

From celebrating the Caribbean Telecommunication Union’s 25th Anniversary in Trinidad, to open data code sprints in Cuba and the launch a regional open data portal, DevCa has grown significantly since its inaugural event in 2011. Below is a recap of tap the events and the activities that took place across the region in February and March of 2015.

Open Data Data Microgrants
This year, the Caribbean Open Institute partnered with the Open Knowledge Foundation and a number of other organizations around the world to offer Micro Grants of up to $300 to help local communities organise amazing Open Data Day events without incurring prohibitive personal costs. The coalition also provided in-kind support in the form of mentorship and guidance or simply by providing a list of suggested activities proven effective at engaging new communities!

The global coalition consisted of the following organisations (in alphabetical order): Caribbean Open Institute, Code for Africa, DAL, E-Democracy, ILDA, NDI, Open Access Button, Open Coalition, Open Institute, Open Knowledge, Sunlight Foundation and Wikimedia UK.

In the Caribbean the Open Knowledge grant was awarded to the Mona School of Business & Management in Jamaica to organize a data visualization workshop.

Open Data Day
In celebration of Open Data Day on February 21, 2015, citizens in cities around the world gather to write applications, liberate data, create visualizations and publish analyses using open public data to show support for and encourage the adoption of open data policies by the world’s local, regional and national governments.

As part of this global event, the Mona School of Business and Management (MSBM) hosted the only Caribbean event out of 125 events in 65 countries, carried out by students at the Mona Campus of the University of the West Indies.

The day started with a 1-hr hands-on workshop exposing students to data extraction and visualization tools and techniques, including Tableau, Open spending, and other online resources available at the School of Data (http://schoolofdata.org/). The workshop was delivered by Dr. Maurice McNaughton, Director of MSBM’s Centre of Excellence for IT-enabled Innovation.

After the initial workshop, teams of students then chose to work on one of three data visualization challenges:
One team explored data made available from Development Alert!, an online tool for increasing transparency and public engagement on projects that impact the environment and public health.

Developed by the Jamaica Environment Trust (JET), the World Resources Institute (WRI) and the Access Initiative, the online, interactive website allows the public to submit reports on projects they are concerned about or track information about new and existing high-impact developments. The data captured on Development Alert! was made available as open data through a RESTful API, and the students explored different visualization techniques to make the data more accessible, visually appealing and engaging for the average citizen.

A second team focused on Jamaica’s national budget. Jamaica’s current 2015-16 Budget debates are being intensely scrutinized and discussed. An important aspect of this debate is making budget information available and accessible to Civil Society (NGOs, journalists, citizens, etc.) in such a way that it provides a basis for discussions, participation and provides mechanisms for greater media / civil society engagement in the entire budget process. The team was provided with the 2014/15 GOJ Budget data from the Ministry of Finance and explored ways of creating more visually appealing and interesting views of the budget. The team explored both the Open Knowledge Foundation’s OpenSpending platform with Tableau Visualization software for ease and flexibility of budget visualization.

The 3rd team focused on the interesting challenge of visualizing high school track & field data. Jamaica’s world acclaimed Boys & Girls Championships is the culmination of an intense season of development meets that take place between Jan - March each year. Trackies (Jamaican Track & Field Fanatics) are constantly dissecting, discussing and debating athlete and school performances throughout the season, in an effort to predict the likely winners and break-out performances at the flagship Boys & Girls Championships.

This team used data on athlete performances from Champs 2014 together with data from the various development meets, to create a track & field performance dashboard that provides performance metrics and visualizations for schools and individual athletes. This dashboard was published and made available to the local Track & Field fraternity. With further development the application will contribute to the ongoing excitement surrounding Jamaica’s premier sport.

At the end of the day, each of the student teams presented their own impressions of their visualization challenge, techniques learned and outputs produced, in front of a small but appreciative audience. Overall, fuelled with Pizza, Coca-Cola and Coffee, Open Data Day at MSBM, turned out to be a rewarding and learning activity for all involved.
Caribbean Mobile Innovation Programme Web Workshop

On the weekend of February 28th, the Caribbean Mobile Innovation Programme (CMIP) hosted a two-day bootcamp to expose participants to emergent web technologies. The workshop was attended by over 25 software developers and organized as a side-event to the DevCa Conference in Kingston, Jamaica.

CMIP, which is coordinated by a consortium including UWI Consulting, the Mona School of Business & Management (MSBM) and Mona Support Services, aims to support the development of the mobile entrepreneurship ecosystem in the Caribbean.

In addition to hosting the workshop, the CMIP programme also sponsored a regional problem statement to map the Caribbean mobile innovation ecosystem. The problem statement was aimed at helping Caribbean entrepreneurs identify resources and partnerships often needed along their startup journey.

Caribbean Open Data Census

DevCa 2015 will establish the baseline for the status of adoption Open Data in the region through the launch of the inaugural Caribbean Open Data Census. The Census will be an annual crowdsourced survey of openness and access to information in key sectors across the region published by the DevCa organizers. In its first year of publication, the Caribbean Open Data Census will be accompanied by a series of sector studies examining the opportunities for open data in the sectors of education, tourism, agriculture and fisheries, public sector budgets and national statistics.

openCaribbean Data Portal

Each year, through DevCa, the local organizing committees and supporting partners collaborate to open up new data and make others more accessible from public sector agencies and academia. Over 70 data have been released since the inception of the conference, including high value resources such as the National Census in Dominican Republic, rainfall data in Trinidad, Agricultural market and production information in Jamaica. With growing interest in open data regionally, several government agencies and organizations have articulated the need for a shared platform for the publication Caribbean data or support in setting up individual data portals.

At DevCa 2015, the openCaribbean Data Portal was launched to respond to these requests. openCaribbean is a shared data platform for organizations and governments to publish data on the Caribbean. openCaribbean will aim to aggregate data about the Caribbean in one central place, making data more easy to find and use. The portal is built using the CKAN platform and allows for the aggregation of data from other regional data portals in one place. Currently the portal pulls data from the Trinidan data portal (data.tt) and will expand over time through conversations with other regional partners.