Belize Open Week/DevCA2018 Hackathon – Overview

The “Developing the Caribbean Conference and Code Sprint (DevCa)” is the Caribbean’s marquee platform for discussing open data, digital governance and innovation for addressing development issues. A roll-up-your-sleeves solutions focused event, DevCa brings together innovators from the public sector, civil society and development organizations with civic-minded technologists, researchers, and entrepreneurs to share experiences, research and best practices.

Since the first staging in 2012, DevCA has had multiple editions staged in Jamaica, Trinidad & Tobago, Dominican Republic, Cuba, Guyana, Barbados and St. Kitts, with hundreds of participants across the region and has become an important pillar for the regional open data advocacy, engagement and outreach strategy.

For 2018, the DevCA Hackathon was organized as part of the Belize Open Week event and featured Open Data from the Tourism domain. Tourism is a priority sector for the Caribbean, and represents the primary economic activity for many Caribbean Islands with significant contributions to GDP through foreign exchange earnings, job creation and economic stimulus through linkages with other sectors (construction, agriculture, transportation, manufacturing, etc). In 2015, the region hosted an estimated 28.2 million tourists and 26.0 million cruise passengers with estimated expenditure of US$34.3 billion (CTO, 2016).

Tourism is also considered to be an Information-Intensive sector, and effective access to data and information provides the basis for awareness, choice and improved service delivery between the prospective tourist and local operators. Innovations that combine effective use of Open Data with interactive, location-based mobile applications can create new service and revenue opportunities in the Tourism sector, in areas such as:

- **Connecting Locals And Tourists**
  – The best part of the experience of visiting a new place, is the cultural exchange between the visitor and the local culture

- **Personalizing The Visitor's Experience**
  – How to provide enhanced tourism product information and diversity of choices for visitors with special niche interests

- **Optimizing The Time For Touristic Visits**
  – Improved quality of support services such as transportation, entertainment, merchandising

- **Enhanced Tourism Market Intelligence Tools**
  – Provide tools (eg. Dashboards) to help Tourism administrators and entrepreneurs to understand Tourism market trends and visitor preferences

DevCA 2018 encouraged innovators from the public sector, civil society and civic tech to explore ideas under the theme “Building Innovation and Urban Resilience in Tourism”. Two concurrent hackathon events were hosted in Belize (UWI Open Campus) and Jamaica (DIA Urban Innovation Lab).

The Hackathon events in Belize and Jamaica together attracted 10 teams of 28 participants who tackled problem statements framed by the Organizers. The Jamaica event featured two all-female teams, while the Belize event featured two teams from the Belize Public Sector, Central Information Technology Office (CITO) and Statistical Institute of Belize (SIB).

While there is still much work to be done in creating truly efficient and impactful open data ecosystems in both countries, we continue to be excited by the potential for Open Data in the Caribbean and the important role that it can play in facilitating Open Government discussions, collaboration and innovation across the region. We look forward to the next major DevCA regional gathering in 2019.
Belize
Event Summary

The DevCa2016 Belize Hackathon was held on November 1st – 2nd at the UWI Open Campus location in Belize City as part of the Belize Open Week (BOW) series of activities. BOW provided a unique multi-stakeholder opportunity that enabled participants from the Government and Civil Society of Belize to learn about Open Government and to participate in co-creation processes. The DevCA hackathon was organized as a 24 hour event dedicated to teams working and using open data in conceptualizing the development of new services, visualizations or applications. The Hackathon was fuelled by Open Data provided by the Belize Ministry of Tourism and was organized under the theme: “Building Innovation and Urban Resilience in Tourism”. At the end of the two days, all the teams presented their prototypes and solutions before a panel of judges.

Participant Statistics

Number of Teams: 4
Number of Submissions: 4
Number of Team Members: 12
Number of males: 7
Number of females: 5

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<tr>
<th>Project Name</th>
<th>Participants</th>
<th>Institutions</th>
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<tr>
<td>Grow Local Economies Through Indigenous Tourism</td>
<td>Marvin Vasquez, Martha Hendrikk, Kyle Neal</td>
<td>The Jaguarondis</td>
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<td>Vegan Voyage</td>
<td>Dane Cabb, Shawn Meija, Angie Hoare, Bianca Mcfadzean, Camille Wade, Roneisha Gentle</td>
<td>Central Information Technology Office (CITO)</td>
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<td>Belize Hot-Spots</td>
<td>Mark Noble, Darren Cal</td>
<td>The Statistical Institute of Belize (SIB)</td>
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<td>Tourism Strategies</td>
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Open Data Sets & Challenges

Data provided by the Belize Tourist Board included:

- Local Tourism Assets: Hotels, Sites and Attractions
- Monthly Tourism arrival statistics by Origin
- Key Tourism Sector indicators

Three specific Problem statements were provided for teams to consider:

1. Many small hotels and attractions don't have the resources to be featured in major tourist promotion channels, and hence rely on word-of-mouth referrals for their patronage. Tourists often are not aware of these “gems”.
2. Tourists generally have limited (finite) time during their visit to maximize their trip experience. This is especially true of cruise-ship visitors that typically have 4 - 8 hours available in port.
3. Although Tourism Official statistics is published on a regular basis by the Tourist Board, it is generally published as a static report digest that does not allow for further analysis and insight by industry stakeholders including local operators, and Entrepreneurs.
Projects & Prototypes
The top three projects are described below.

CITO (1st Place) with Vegan Voyage
Members: Dane Cabb, Kylon Neal, Shawn Meija, Angie Hoare, Bianca Mcfadzean, Camille Wade, Roneisha Gentle

Project Description: Vegan Voyage highlights local vendors in categories such as entertainment, transportation and food. Our main target are the passengers of the Cruise lines, to make traveling and finding reliable services easily available. Here is a special emphasis on a growing number of our world's population transitioning to a plant based lifestyle, with the trend of veganism increasing exponentially over the past five years. Even individuals who may not necessarily convert to the lifestyle has since engaged in the practice of eating healthier.

A tourist who comes to a caribbean country with such a diverse palette based primarily on meat may be disadvantaged and may not enjoy the full Belizean experience. Having a database with geographical results in order to find a vegan friendly environment makes all the difference in allowing a vegan or anyone in the pursuit of a plant based, dairy free culinary journey and more so an environmentally sustainable experience to benefit while enjoying the amenities of a new country. The app provides users with ease of access to the closest vegan friendly establishment nearby in addition to a taxi service and local guides nearest to them.

The CITO team developed a simulated mobile App experience using an online prototyping tool.

SIB (2nd place) with Belize Hot-Spots
Members: Mark Noble; Darren Cal

Project Description: Using the data provided by the Ministry of Tourism, the application uses an API to connect to the Ministry's Database (or any DB) to periodically extract geo-referenced information on Attraction and Accommodations and display on a Map. The map also allows registered users to add their own locations (not yet listed in the Ministry's DB).

Tourists coming into Belize with limited time, want to go to an area where they can see more without too much time wasted on traveling. The map groups attractions as the user zooms out as 'hot-spots', so the tourist can see where the attractions in Belize are. The map would also allow the tourist to rate the location, for future users to see.

The solution also kept in mind local entrepreneurs that do not have enough capital to do their own marketing. Giving them a free space online in the map to list their locations geographically. Once added to the map, the entrepreneur would be able to build their personal page, marketing their location and products. Any location listed will be viewable by tourists.

The application was built with mobile in mind, so it was developed as a website and ported to android and iOS using a 'wrapper' technology.

Jaguarondis (3rd place) with Indigenous Tourism
Members: Marvin Vasquez, Martha Hendrikx, Kyle Neal

Project Description: Provide a platform for strengthening socioeconomic fabric of small communities. The impact is to increase tourism income in underserved populations; strengthen social fabric by providing opportunities to young people in small communities; Let the world know hidden gems of the world. The concept is well developed. The stakeholders involve public, private and government sectors: Indigenous communities, tourists, Community-based Organizations, Govt. The conceptualized application encompasses the Web primarily, and other relevant digital tools. A web based project concept, preliminary data sources and design mock-up were developed for the ePlatform. The team now needs resources to develop the apps.
Key Outcomes

The DevCA2018/BOW hackathon complemented the other activities in Belize Open Week, and was an important 1st step in demonstrating the potential and tangible benefits that can be derived from Government Open Data. In particular, with the availability of Tourism Open Data, the activity prompted many of the participants from both Government agencies and Civil Society to think creatively about possible innovations to enhance the Belize Tourism product. This illustrates the power of Open data to provide a catalyst and a platform for creative co-production and collaboration between Governments and Civil Society.

The participating teams should be encouraged to develop their ideas further, taking advantage of the micro-Grants from the Trust for Americas initiative. The notable absence of participation from Academia was somewhat disappointing. Students from Universities and other technical institutions have formed the core of participation for the previous editions of DevCA staged in other countries, and are an important constituent in developing a vibrant open data ecosystem. A more active outreach to the University student communities will be key for future stagings of DevCA Belize.
Event Summary
On November 1 & 2, the DIA Urban Innovation Lab in Kingston, in collaboration with UWI and Slashroots, hosted the Jamaica leg of DevCA2018 Hackathon. This 24 hour hackathon included 16 participants, five from two high schools, and eleven from three universities, organized into six teams. Over the two days, the teams used open datasets from tourism in Jamaica to develop solutions which can be applied in the Caribbean and elsewhere. At the end of the two days, all the teams presented their prototypes and solutions. The winning team was a gender-balanced pair from The University of the West Indies, closely followed by a mixed gender team from the University of Technology, Jamaica.

Participant Statistics
Number of Teams: 6
Number of Submissions: 6
Number of Team Members: 16
Number of males: 8
Number of females: 8

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<th>Project Name</th>
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<td>JamGO</td>
<td>Shakeane Hinds, Stephanie Jones</td>
<td>University of the West Indies (UWI)</td>
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<td>Bout Di Place</td>
<td>Roshelle Pinnock, Kemoy Doyley, Phillip Newman, Joshua Thompson</td>
<td>University of Technology (UTech)</td>
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<td>JA Travel Planner</td>
<td>Bryanna Chang, Melissa Mitchell</td>
<td>Univ of Comm. Caribbean (UCC)</td>
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<tr>
<td>Knights in Blue and White</td>
<td>Sheniqua Johnson, Zachary Smith, Tyreque Hibbert</td>
<td>St. George’s College</td>
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<td>Dashtracker</td>
<td>Nasha Frith, Jordan Nakash, Abigail Ivey</td>
<td>Youth Can Do IT (YCDI)</td>
</tr>
<tr>
<td>DSA</td>
<td>Andrew Amiel, O’Andre Johnson</td>
<td>Univ of Comm. Caribbean (UCC)</td>
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The hackathon attracted an equal number of male and female participants. Equally noteworthy was the participation of five high school students - nearly one-fifth of the participants. The competition was judged by a three member panel, comprising Craig Perue of the Mona School of Business & Management, David Soutar of CARIMAC and Slashroots, and Phillipa Rhule-Armstrong of the OAS - DIA Lab.

Projects & Prototypes
The top three projects are described below.

UWI Pelicans (1st Place) with JamGo
Members: Shakeane Hinds, Stephanie Jones
Project Description: JamGo is a Digital marketplace that integrates mapping and payment systems to allow tourists to search for, reserve, and pay for tour guides, excursions, and rental car companies. The project combined datasets on local tourism assets and tourism providers, and is designed to allow individual tour guides to list their services and connect with tourists via the website. The team built a mockup of a travel app that allows visitors or locals to locate, book rides to and from various destinations, book guided tours/excursions from locals or tour operators, find hotels, restaurants and hotspots.

UTech (2nd Place) with Bout ‘di Place
Members: Roshelle Pinnock, Kemoy Doyley, Phillip Newman, Joshua Thompson
Project Description: A recommender system to help potential visitors to Jamaica identify the sites and tours that would most likely be interesting to them. The project team did a great job defining the problem and setting out the business context. Bout ‘di Place allows users to design personalized tour experiences of Jamaican culture including attractions, arts, events, cuisine and rent a dread feature.
UCC Young Coders (3rd place) with JA TravelPlanner
Members: Bryanna Chang, Melissa Mitchell

Project Description: Targets cruise shop operators visiting Jamaica. Uses GPS location to select attractions based on proximity to cruise ship ports. Team build a UI prototype using proto.io.

Key Outcomes

Many of the participants said they had not previously been aware of the existence of the open datasets used in the competition, and expressed interest in building other applications in the future to make use of these datasets. Given the diversity of technical prototypes - from text-based to touchscreen mobile interfaces - and the range in sophistication of the problem diagnosis and solution, the participants also said that hearing the presentations of the other teams helped them gain new perspectives on how to structure their presentations in the future.

It seems apparent that greater public awareness of the open datasets could result in much greater value being created through data-intensive application development by a wide range of stakeholders. The participants of this competition should be encouraged to continue developing their software development skills as well as their ability to identify commercial implications of their business ideas. The partnership with the DIA Innovation Lab for the DevCA2018 Jamaica edition provides an important platform for future collaborative initiatives.