DevCA-Belize
Open Data Online Hackathon
2020

Hackathon Event Report

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Overview

The Organizers (The OAS/Trust and DevCA) worked with local partners in Belize including BELTRAIDE, Total Business Solutions and the Belize Open Government Steering Committee to stage the Belize 2020 Open Data Hackathon which took place on Wednesday July 8, 2020 through to Friday July 10th, 2020. DevCA-Belize2020 Hackathon was a fully virtual 48hr event that encouraged innovators from the public sector, civil society and civic tech to explore ideas staged under the *theme "Open Data: Enabling Tourism Post COVID-19".*

The DevCA-Belize2020 Hackathon focused on solutions for the utilization of Open Data in tourism to promote destinations, highlight value-added services and improve safety and security (including access to information about epidemiological statistics). Solution areas included:

- *Tourist Travel & Stay*

Using Open Data to help to enhance destination visibility and implement health measures in ways that reduce unnecessary burden on the international traveller, in response to the nature of the new challenges being faced by the travel and tourism industry due to COVID-19.

- *Health Security & The Visitor Experience*

Utilising Open Data to help the hotel sector create innovative added-value services that enhance the visitor experience, while providing adequate health awareness mechanisms.

- *Domestic Tourism*

Given the global crisis, tourists are rethinking the distance they are willing to travel and with closed international borders there is a rising demand for domestic tourism. How can Open Data help the tourism sector adapt to changing consumer needs by tapping into the value of domestic tourism?

The Hackathon event in Belize attracted 4 teams of 12 participants who tackled problem statements framed by the Organizers. Among the four teams were a team of family members from Cayo (uncle, father and 14-year-old son) and a team of students from the Instituto Tecnológico de Chetumal.

While there is still much work to be done in creating truly efficient and impactful open data ecosystems in Belize, 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 in enabling Belize tourism post COVID-19.
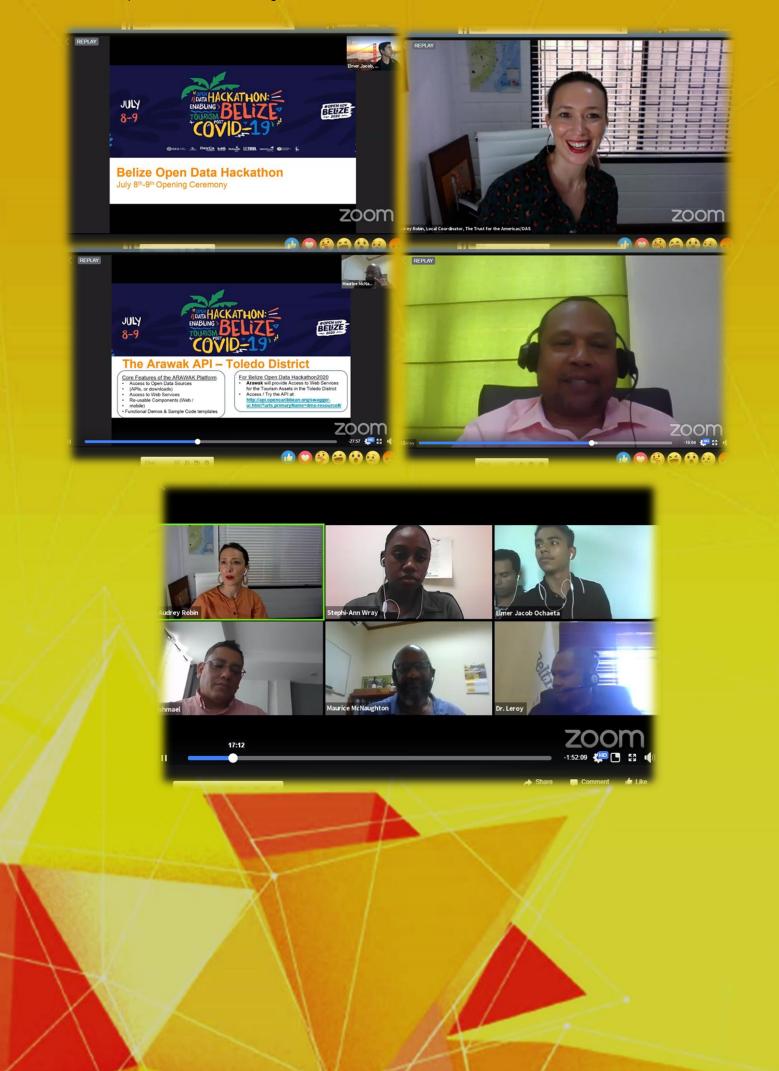
Event Summary

The DevCA-Belize 2020 Hackathon was held on July 8-10 using the Zoom platform facilitated by DevCA Organizers and streamed online via The OAS/Trust and the Open Government Belize Facebook accounts. The event 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 48-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 Civil Aviation, the Belize Tourism Board, the Statistical Institute of Belize and the Belize Ministry of Health and was organized under the theme: "Open Data: Enabling Belize Tourism post COVID-19". At the end of the two days, all the teams presented their prototypes and solutions before a virtual panel of judges.

Structure of the Event

In general, the 48-hr event was structured as follows:

- **Wednesday July 8, 2020** *(click here to watch the live stream)*
  - Key Note Address given Dr. Michelle McLeoad, Programme Director/Head of Department, Centre for Hotel and Tourism Management, UWI Nassau, Bahamas and Member of the UWI COVID-19 Task Force
  - Technology Remarks & Participants Briefing given by Dr. Maurice McNaughton, Director of the Centre of Excellence & Innovation, Mona School of Business and Management, UWI Mona, Jamaica

- **Thursday July 9, 2020**
  - Team Check-In
  - Hacking

- **Friday July 10, 2020** *(click here to watch the live stream)*
  - Submission of projects
  - Pitching of solutions to judges
  - Judging and Scoring – Judges for the event were Dr. Leroy Almendarez, Executive Director of BELTRAIDE, and Mr. Ishmael Quiroz, Executive Director of the Economic Development Council and Dr. Maurice McNaughton, Executive Director of the Centre of Excellence & Innovation (MSBM)
  - Awards Announcement

Screenshot photos of the event being hosted on Zoom and streamed via Facebook

Participant Statistics
Number of Teams: 4
Number of Submissions: 4
Number of Team Members: 12
Number of males: 8
Number of females: 4

Project Name	Participants	Institutions
Belize Tourism Market Intelligence Dashboard	David Perez Peter Hudson Karen Ramirez	Insight Data Systems
The Belize Virtual Guide	Elmer Ochaeta Hiram Ochaeta Jacob Ochaeta	Science & Information Technology Organization of Belize Intranet Systems
TravelBz.com	Cornelius Sawatzky Jonnelle Hemmans Jillian Morrison	University of Belize Ministry of Tourism & Civil Aviation College of Wooster
Raccoon Travel Guide	Carlos Obidio Monterrosa Francis Cawich Thea Ivana Samos	Instituto Tecnológico de Chetumal Instituto Tecnológico de Chetumal Instituto Tecnológico de Chetumal

The Hackathon Challenge

The Problem Statements provided by the Organizers targeted developers with the purpose of engaging them to build innovative solutions using the Data Sets available on the openCaribean.org Data portal and APIs on the Arawak API platform. Seven 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. Given the severe decline in international travel, many operators are wondering if going virtual could be a way to open up new revenue streams to stay afloat. For operators, virtual tours can be a good way to promote destinations, attractions and in person tours and experiences post COVID 19.
3. Although Within Community tourism clusters, local maps that contains a variety of points of interest including: accommodations, attractions, restaurants, etc. are typically unavailable. This makes it difficult for visitors to find their way around with a more interactive and immersive experience with all that the community has to offer.
4. 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.
5. 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.
6. How do visitors to a country become aware and have ready access to all the relevant information about the incidence of coronavirus and related guidelines in the country.
7. International travel is expected to remain severely limited for the foreseeable future. Governments have begun to explore whether domestic tourism can play a vital role in the rebuilding of economies and act as an indicator for the health and security of nations.

With the challenge, the developers/participants were willing to find new ideas that could be incorporated in the Belize tourism sector. Thanks to the given Problem Statements and the available datasets and APIs, developers had no need to conduct extensive research and could focus on the challenge and how to solve the problems.

Judging Criteria

Each team gave a short pitch and a demo of their solution and was judged and scored based on the following:

- Completeness of Project
  - How complete is the entrant's solution is compared to the envisioned product?
  - Does the project achieve all the proposed objectives?
- Open Data Usage and Usefulness
  - How much useful added knowledge or insight was achieved through using the data?
  - Was the final solution fully dependent on open data and useful to its intended audience?
- Solution Impact and Problem Solving
  - Does the project solve a problem?
  - To what degree will the project have an impact on minimizing the identified problem?
- UX/UI
  - Is the application visually appealing?
  - Is the application simple to understand and easy to use?
- Commercial Potential
  - Does the business model/method(s) of revenue stream of the solution make sense?
  - Is there a target market?
  - Is the project sustainable?
- Presentation
  - Was the presentation engaging and appealing?
  - How well did the presenter(s) utilize the allotted time?
  - Was the presentation well received?

Projects & Prototypes

The project submissions are described below:

Belize Tourism Market Intelligence Dashboard *(1st Place)*
Members: David Perez, Peter Hudson and Karen Ramirez

Project Description: An interactive web app that delivers fast and intelligent data insights about Belize's Tourism Industry. The Belize Tourism Market Intelligence Dashboard was created using the open data provided including the accommodations list, tourist attractions and sites among others to create an analysis and insight of the data permitting to easily view trends in the tourism industry. The data will be readily available and accessible to tourism board officials, government officials, non-profit organizations, universities, private companies, local operators, entrepreneurs, media, and citizens. This will permit the stakeholders to better interact, understand and further analyze the data. The dashboard solution provides a means to empower the end user and gain insight on tourism information for planning, tracking, modeling, and even forecasting trends in the industry. The Dashboard has data insights on the following:

- Hotel Accommodation Information
- Sites & Attraction Information
- Key Performance Indicators (KPI)
- Visitor Counts
- Visitor Expenditure
- Occupancy % Ratio
- Employment Data & Ratios
- Forecasting & Predictive Analysis
- Impact Analysis

TravelBz.com *(Tied for 2nd Place)*
Members: Cornelius Sawatzky, Jonnelle Hemmans and Jillian Morrison

Project Description: The TravelBz.com website/app aims to be a "one-stop-shop" that provides local and international tourists with relevant health information as well as activities, hotels, restaurants, and services that are currently available to them during the pandemic. Additionally, this site will generate data about tourists' interests/budgets/needs/wants, etc., which can be used by stakeholders to track what tourists are interested in or what they are planning to do so that they can better plan for incoming tourists.
The team built the user interface of the TravelBz.com website/app using an online prototyping tool. With this, they designed the layouts/UI and were able to link the pages to provide navigation. The site consists of three main sections:
1. Health Services – from which the user may locate all hospitals within Belize by selecting them on a map of Belize or by using their current location to find the nearest one. Upon selecting a particular facility, they will be provided with directions to that facility. Additionally, a user can also choose
to chat with hospital personnel through the application. Besides those options, users will also be provided with contact information for them to reach out to the medical facilities.
2. Tourist attractions & Hotels – the user is able to filter and search through a list of all attractions and hotels within Belize which are recognized by BTB as having proper sanitary measures in place for COVID-19.
3. Market Intelligence Insights – relevant and up-to-date information about the state of the current tourism industry in Belize using the Open Data as the historical, comparable data.

The Belize Virtual Guide *(Tied for 2nd place)*
Members: Elmer Ochaeta, Hiram Ochaeta and Jacob Ochaeta

Project Description: The Belize Virtual Guide seeks to accomplish two goals: firstly, it provides an opportunity for freelance guides to participate in the economy, giving them an affiliate web-based platform to offer their services. Secondly, visitors have an opportunity to discover attractions, accommodations, and places of interest near the general area they are visiting with the use of their mobile device. The system will use Data Mining of available data sets to provide safe recommendations on an appealing map. The Belize Virtual Guide is a web and mobile application that can be accessed with any device. Tourists will access the site using strategically located QR codes. Or they would have the option to install the app. Once in an area, for example, Belize City, a suggestion of safe areas they can visit will be provided. In addition, vlogs will be used to provide a local perspective on Belize City and recommended places, based on the visitor's interest. Additional videos will be available describing any area of interest the visitors select to see. Freelance guides affiliated with the website will participate in vlogs of certain areas giving the tourist a preview of the tours they can offer in any of the attractions. Furthermore, the tourist will be able to request a tour with the freelance guides through the website. View the online prototype at http://virtualguide.intranetsys.net.

Raccoons Travel Guide *(3rd place)*
Members: Carlos Obidio Monterrosa, Francis Cawich and Thea Ivana Samos

Project Description: This team developed a mobile app where tourist can access all data from hotels restaurants and resorts in Belize and be provided with the exact geolocation of the site. Racoon Travel Guide (RTG) is a Belizean travel app with user generated content to access different services for local and foreign visitors, including maps, accommodation, restaurants, bars, entertainment, outdoor activities, travel experiences and local operators. The app promotes responsible tourism by additionally allowing access to important travel information (location and contact of emergency services, weather forecasts, recommendations/guidelines for safe traveling). The app will also allow for marketing ads and support local businesses through the promotion of discounts, coupons, etc.

Photo the Belize Tourism Market Intelligence Dashboard presented by the 1st Place winning team
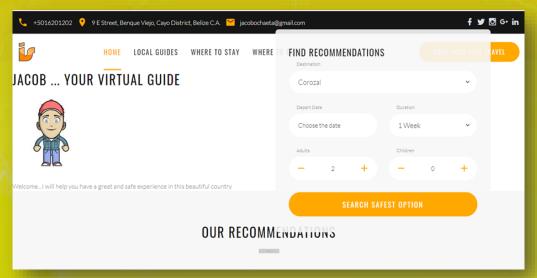

Photo of the Belize Virtual Guide website/app presented by the 2nd place winning team

Post Event Activities

Following the hackathon event, arrangements were made for the local organizers to handover the respective prizes to the winning teams. After the event, online interviews were also conducted in which team members talked about their projects and how they decided that they could build the next best tourism app using Open Data. Watch the online interviews [here](#).

Key Outcomes

The DevCA-Belize 2020 Hackathon demonstrated 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 the participants 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 in the Caribbean and Civil Society. The fully virtual staging of the Hackathon and the committed engagement demonstrated by the four (4) participating teams provides clear evidence of the opportunities available to utilize digital technologies to enable innovation and collaboration, even while the physical constraints caused by the COVID-19 pandemic persist.

Tourism organizations, governments and related actors in the Caribbean need to pro-actively re-imagine innovative ways in which to accelerate the sector's digital transformation. The participating teams should be encouraged to further develop their software development skills and to identify commercial applications of their ideas.

Photo of members of the winning teams collecting their prizes. From left: Dr. Leroy Almendarez (Executive Director of BELTRAIDE and competition judge), Karen Ramirez (1st place team member), Cornelius Sawatzky (2nd place team member), and Audrey Robin (Local Coordinator, The Trust for the Americas).