UBC CIC Playbook
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Coming Together

How does the CIC team work together to solve challenges?

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The Story

Purpose
The University of British Columbia Cloud Innovation Centre (UBC CIC) playbook provides insight into the different processes and mechanisms used in the innovation program.

The UBC CIC uses methods and resources that have proven to be successful. We are happy to share this for anyone to use with any use case. These resources can be referenced to support your use case, whether it is the operationalization of a new innovation program, supporting existing capstone programs you may be running, or shaping an existing work-integrated learning environment.

Background
The UBC CIC serves as a hub for public sector community-driven ‘challenges’ that address real-world problems and opportunities. We seek to support and benefit the community: from the people that live, work, and learn on UBC’s campuses, to our many community sites and partners, including public sector organizations in education, health and life sciences, non-profit and government, and the indigenous community. All our project outcomes are published under an open source license; the ability to publicly publish our outcomes is a requirement to collaborate with us.
Program Overview

i. The approach

Cloud innovation programs provide a unique offering to students and support the Educational Institution’s work-integrated learning objectives. The program provides students with hands-on experience developing functional technical prototypes using AWS solutions. Students work on interdisciplinary teams, alongside external sponsors and professional staff from AWS and UBC so that the student experience is rich with mentorship, collaboration, connection and learning. Additionally, their knowledge of technology and projects grows exponentially, equipping them with skills that can be used well after graduation, as evidenced in the employment they attain after they graduate.

ii. The challenge process

There are 6 potential stages to each challenge as outlined below. Not all Challenges will go through each phase, and we work with our challenge sponsor (the entity that has submitted a challenge) to determine which phases are needed.
a) Pre-Innovation Phase

The CIC receives proposals or inquiries on an ongoing basis through word of mouth, connections from previous project contacts, and/or from the Expression of Interest form on the CIC website. Once contacted, the CIC engages in several conversations with the potential sponsor to better understand the challenge and how the CIC can help. Conversations help surface the following:

i. Scope and fit – what is the challenge aiming to address? Does it address opportunities to impact and benefit the community?

ii. Feasibility – how feasible are the challenge goals, with respect to time and resource constraints?

iii. Impact potential – what subsequent opportunities might the outcomes of this challenge lead to?

b) Working Backwards Workshop

If the challenge is a fit, it is often further refined using the AWS innovation methodology: Working Backwards. This methodology is used to help ‘customers’ focus on the end-user benefit of addressing the challenge.

The workshop is designed to help participants ‘put themselves in the customer’s shoes’ and think innovatively about the problem or opportunity. We encourage attendees to THINK BIG and maintain a customer-centric outlook on the challenge. An optimal workshop has 6-15 attendees coming together to tackle the opportunity or challenge.
c) Scoping Phase

Following a Working Backwards Workshop, the team creates a Pre-Work Document that outlines the challenge and the ‘big idea’ outcomes. A Solutions Workshop is sometimes used to ideate the solution and define a technical scope for the project. An outcome of the Scoping Phase is a scope document which is a collaborative document that outlines the agreed-upon challenge, approach and success criteria. Once the scope document has been finalized and approved by the sponsor, prototype development will commence.

d) Prototyping Phase

Developers get assigned to the project, and a Project Manager (PM) leads sprint development. The PMs track progress via bi-weekly sprints using internal meetings and check-ins, as well as by using a Project Management platform called Asana. Asana acts as a repository for the developers to document their tasks and gives the PM insights into developer’s tasks and progress. This helps give an overview of the project timeline and health of the project. The development team meets with the sponsor on a weekly or bi-weekly basis to share progress, provide demos of the solution, receive feedback and answer/ask any questions. These sponsor meetings are crucial in the prototyping phase because valuable feedback is collected, and this allows the team to pivot quickly as we iterate the solution based on the sponsors’ input.

Developers also have weekly meetings with developers from other projects to share technical progress and get support for troubleshooting from their team or the Solutions Architects.

e) Completion Phase

Timelines vary depending on the complexity of the prototype build, and generally span 3 to 6 months to complete. Because we support student outcomes, projects are typically shaped to be completed within 1-2 academic terms so that students can leave the CIC experience with a completed project as part of their experience portfolio. This is also a consistent time frame used in
innovation methodology. Because of this, projects may be broken into phases. In the completion phase, the Project Assistant and Student Developers work on detailed documentation, user and deployment guides to be published on the project's GitHub repository. The documentation requires approval by the PM and Solution Architects. A project is considered complete when the team holds a handover meeting with the sponsor, during which an end-to-end demonstration of the prototype takes place and all documentation is delivered, and when the solution is published in the open-source GitHub repository and on the CIC website.

**Key Documents**

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<th>Document</th>
<th>Description</th>
<th>Learn More &amp; Examples</th>
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<tbody>
<tr>
<td>Scope Document</td>
<td>After the PRFAQ has been approved by the sponsor a scope document is created stating the challenge, proposed solution, success criteria and risks and assumptions of the project.</td>
<td><a href="#">Scope Document Template</a></td>
</tr>
<tr>
<td>Technical Documentation</td>
<td>GitHub Repo and README Documentation</td>
<td><a href="#">Tech Documentation</a></td>
</tr>
<tr>
<td>Handover Documentation</td>
<td>Since we provide POC solutions to sponsors this guide helps them employ solutions on their own and provides next steps.</td>
<td><a href="#">Handover Document template</a></td>
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**Landing Zone**

Landing Zone is a solution that helps customers more quickly set up a secure, multi-account AWS environment based on AWS best practices on AWS Control Tower. It helps save time by automating the set-up of an environment for running secure and scalable workloads while implementing an initial security baseline through the creation of core accounts and resources.
The UBC CIC crafted service control policies (SCPs) on top of the organizational units (OUs) within the UBC CIC organization, which refrains students from 1) running expensive services, and 2) saving data on AWS Regions other than the Canadian Regions and US West coast.

For managing user account access, the UBC CIC AWS Control Tower integrates with the IAM Identity Center to manage access to multiple AWS accounts based on a group permission sets that dictate the user access to the AWS Accounts they were associated with.

**Name convention:** When the team needs to create AWS Accounts, a valid email address is required in the process. To better control the uniqueness of the email the team leveraged the plus addressing, meaning that any email sent to awsadmin+suffix@domain is still sent to awsadmin@domain. This means the team can have a lot of variations when associating email addresses to give out to AWS Accounts.

These are the OUs that aggregate the AWS Accounts the team creates:

- **Sandboxes:** When someone needs an AWS account for testing and experimenting, the team creates them here. Within the Sandbox OU there are other sub OUs that define the user's group, for example students, staff, collaborators among others. For the AWS Account naming standard the team used FirstName.LastName-GroupName. Having a GroupName tied to the accounts makes it easy to filter for reports in Cost Explorer.

- **Projects:** Sponsor projects have a separate account. These accounts have multiple students added to the account as well as external collaborators in some instances.

- **Security:** Audit and Log accounts. Audit is the central access point for aggregated Guard Duty and Security Hub from all the accounts.
Coming Together

Initial Training

Students have access to training through online courses such as Coursera, Udemy, Whizlabs, A Cloud Guru, and AWS self-study material. For Student Developers, the focus is on training that is used to prepare for the AWS Certified Solutions Architect - Associate Certification which provides a broad overview of AWS services and understanding of the AWS Well-Architected Framework.

Depending on the challenge the students are associated with, workshops developed by AWS are recommended to provide more in-depth hands-on exposure to services that will be used to complete challenges.

For the non-technical roles, Project Assistants are encouraged to learn more about Cloud technology by taking the AWS Certified Cloud Practitioner Certification. They are also directed to resources on project management and learning about business tools such as Outlook, Zoom, Doodle and other project management software.

How We Work

The UBC CIC emphasizes collaboration. The UBC CIC has functioned both on-site and in hybrid-remote modes. To foster communication, the CIC uses both synchronous and asynchronous tools to ensure openness. The team is encouraged to use chat features to communicate frequently and with ease. Collaborative documentation and online workspaces also help team members to work together.

In addition to communication tools, the whole team meets regularly online and in-person. Full-team online meetings take place weekly where status and demos are shared. In-person days allow the team to connect, work together and meet. In person meetings have helped foster connection and build relationships between team members to support remote communication.
Call to action

If you have or are planning an innovation program on your campus and would like to discuss how to incorporate any of the components listed here, please contact cic.info@ubc.ca for more information.
Socials

https://cic.ubc.ca/
https://www.linkedin.com/company/ubc-cic