Project Charter

Mobile Wayfinder

Revised by Dallas Richmond, Tyler Maloney, and Matthew Logan
May 15, 2023

Executive Summary

The Information Management Branch (IMB) is the central IM/IT services group reporting to the Ministry of Citizen Services Chief Information Officer within the BC Government. Starting in 2022 the IMB has embarked on an initiative to modernize its portfolio of applications which support a diverse range of business units within the Ministry to support the delivery of services to Citizens and the Ministry. An integral part of the modernization process includes adopting Agile and LEAN approaches for the development of IM/IT solutions. The IMB has invested in expanding their in-house capacity and competencies in modern, open-source applications hosted on the BC Dev Exchange containerized hosting platform.

The Team Wayfinder Capstone seeks to contribute to the IMBs modernization efforts by developing a suite of common components that can be leveraged by other development teams in the coming years.

Project Purpose
Business Need/Case

Access to Government services falls into a range of categories such as information retrieval, permits, and obtaining social programs like benefits. Citizens seek access to Government services through a diverse set of channels, including web-based search engines and the Governments main web page: gov.bc.ca. Increasingly citizens use their mobile phones as their preferred channel. There are occasions when citizens are required to attend an in-person government agent through one of the over hundred ServiceBC offices located throughout the province. Locating a ServiceBC office can be challenging. Citizens may use Google Maps which may result in an unreliable address being suggested.

<u>Client Motivation</u>

Team Wayfinder has identified three client motivations:
1. Development of a suite of common software components that can be integrated into mobile solutions to provide location specific information.
2. Deliver a mobile solution "exemplar" that can be repurposed to assist other Ministry teams to reduce the time and effort required to develop a mobile application.
3. Add to the IMB's in-house adoption of full stack programming best practices.

<u>User Profile</u>

Team Wayfinder is adopting the provinces approach to Service Design to "deliver simple, effective products and services in response to citizens' needs. Apply human-centered design practices, working directly with people who will use the product or service. Communicate in plain language. Strive to meet the highest standards of accessibility, inclusion and equity". While the solution that is to be developed is intended for Citizens' usage, they are not the only beneficiary of our project.
By contributing code to the BC Government solution repository Team Wayfinder is furthering the provinces' support of open-source software developed in a modern and sustainable manner. While the solution will be delivered on the provinces private cloud infrastructure the adoption of containerized technology will allow the solution to be deployed on any of the leading vendors clouds. To achieve this goal, it is important to gain a detailed understanding of the IMBs adoption of 'DevOps'. Team Wayfinder will actively participate in all learning opportunities provided by the IMB, either as self-directed training or guild chapter-lead led sessions.
To be successful, Team Wayfinder enjoys full support of the IMB who is providing human resources to the team in the form of a Product Owner (PO), Technical Owner, Scrum Master and other subject matter experts as required. The team is adopting Scrum methodologies and two-week sprint cycles over the entire twelve weeks of the Capstone project starting May 1st, 2023, and expected to run till mid-August. The team will build out a knowledge and code repository as their prime deliverables and use a suite of tools to manage the product development lifecycle all with full support of the client.

Project Parameters
<u>Scope</u>

Team Wayfinder aims to contribute to the Information Management Branches' knowledge and understanding of Mobile Application development leveraging on-device sensor location information to map our Wayfinder routes between a user's current location and the nearest ServiceBC government agents' office. The solution will generate service data that will help the client to understand how the solution user interacts with the mobile application. This can include frequency of use, types of services requested, network online/offline usage and other information that will surface throughout the product development phases. By adopting an Agile approach to product development (rather than a traditional waterfall method) Team Wayfinder will pivot requirements analysis as we engage the client on biweekly product sprint reports.

<u>Core Deliverables</u>

An Agile "product support environment" utilizing the IMBs preferred tooling.

A knowledge and code repository containing the documents solution.

A containerized solution deployed to the BC Governments private cloud environment.

A suite of 'common components' that are self-describing to foster reuse.

To achieve their core deliverables, the team has identified a set of milestones that will act as a success measures:

Phase 1: Requirements and Design Phase (Planned completion date: June 31st 2023)

- Complete basic project outline and design
- Complete platform knowledge transfer
- Experiment and design system specifics and User Interface (UI)

Phase 2: Development Phase (Planned completion date: July 12th 2023)

- Allow citizens/users to self-install the mobile application.
- Allow the users to receive feature updates.
- Provide the user with a list of services and service locations.
- Map the best path between the user's current location and the ServiceBC location.

Phase 3: Refine Phase (Planned completion date: July 26th 2023)

- Provide the IMB with a service analytics dashboard.
- Demonstrate to the IMB the use of a "code co-pilot" to verify code quality.

Phase 4: Hand-off Phase (Planned completion date: August 8th 2023)

- Complete a final demonstration of system features.
- Complete handover documentation

<u>Requirements</u>

In addition to reaching each of the milestones, the project has several final requirements before it is considered a success:

- The solution must facilitate consistency and reliability specifically in the information provided to citizens/users.
- The application must be easy to understand for non-technical users.
- The application must be designed and built for reuse.
- The application must be hostable in a distributed environment such as the BC Government's OpenShift environment.

<u>Out of Scope</u>

When writing the Project Charter, scope constraints have not been identified in accordance with Agile best practices as Phase 1 (mentioned in the previous section) is intended to identify and prioritize the solutions feature set.

<u>Stretch Goals</u>

 While not (yet) articulated, the client has expressed a desire to include advanced telemetry logging to the Ministries security data lake. This will be prioritized by the team during the feature backlog creation and refinement sessions.

Constraints

Several constraints have been identified that the sponsor and the product development team must consider:

- The project team must embrace its own 'way of working' principles and adhere to them.
- The project sponsor (who is the Product Owner) must adhere to identified principles and refrain from scope creep this will be achieved by following Agile and Scrum best-practices.
- The core team must complete the project within the allotted Capstone period.

Assumptions

Several assumptions have been made by the core team regarding this product development project. They include:

- Adequate support will be made by the sponsors to clarify requirements.
- The BC Government hosting environment is operational.
- Additional project funding other than for SME resource time has not been approved by the client, where required a submission must be made to the Product Manager/Executive Sponsor
- Personal resources will be available from May till August 2023 with coverage provided.
- Staff availability is Monday-Friday 8am till 4pm
- Team availability is primarily Monday, Wednesday, and Fridays with a limited number of non- core hours at the discretion of the Consider each team member's constraints. If you are working closely with your client or other personnel outside of your team, consider their constraints, too.

Change Management

The IMB has a set of established and evolving Change Management practices as part of their DevOps best practices. The proposed Wayfinder solution should be intuitive and not require specialized end-user training. By incorporating a push enabled feature upgrade to process the end user will be able to control product upgrades. The project's purpose is to develop a suite of common components and a mobile application exemplar. Therefore, handover documentation detailing how to operationalize the proposed system must be created.

Risks

The Wayfinder project is being developed as a prototype mobile application consisting of a suite of common software components. The development lifecycle may or may not be sequential within the identified six "sprint" calendar. The project core team and IMB sponsors agree to work towards mitigating all risks and to manage the feature backlog and service features to achieve the core purpose of the Wayfinder project.

Risk #	Risk Description	Owner and Recommendation	Priority	Risk Treatment (Accept/Mitigate/Transfer)
1	**Inexperienced with developing location-based services on disparate end user devices** The project team has not previously developed senor-based services on Android and iOS devices	**Project Team** The core team will spend the required time to learn and experiment 'progressive web apps' using Android and iOS devices	Medium	Accept
2	**Inexperienced with the OpenShift platform** The project team has not previously worked in an OpenShift environment prior to start of this project.	**Project Team** The core team will spend the required time to learn the platform and deployment process under the guidance of the Technical Owner	High	Accept
3	**Yet to be determined requirements** The project sponsor has yet to fully outline the analytics and telemetry constraints. The core team will work with the Product Owner and Ministry Subject Matter Experts to propose a series of experiments to validate the viability of developing these services within the previously identified project constraints (e.g.: scope creep).	**Sponsor** Allocate two sprints to analyze processes, data and define our approach to success. Hold enough meetings with stakeholders	High	Accept

Approach

The Wayfinder project will follow Agile development best practices with two-week sprints. Sprints will begin on Thursdays and end on Wednesdays. Each sprint will begin with a sprint planning meeting and end with a sprint retrospective meeting. Also, a sprint review meeting will be held midway through each sprint with the sponsor and additional meetings as required. The project core team will utilize a hybrid meeting method attending onsite at 4000 Seymour Place in Victoria on identified dates and additionally using MS Teams as the primary communications channel. Weekly check-in sessions will be held with Camosun College instructors where the team will present their weekly status report. College instructors will also be invoiced to attend Sprint retrospectives.

The team agrees to hold daily stand-up meetings, these will be either in-person or virtually. Meetings will be limited to 15 minutes where each member will:

- State what they have done since their last stand-up meeting.
- State what they plan to do that day.
- State anything that may be blocking their progress.

The following table outlines the teams planned sprint cycle and timeline.

	Week 1							Week 2						
	Su	M	T	W	Th	F	S	Su	M	T	W	Th	F	S
Project Scoping		X												
Client Check-in		X								X				
Sprint Planning						X								
Scrum Meeting (full team)	X		X		X	X			X		X		X	
Scrum Meeting (core team)		X			X				X			X		
Instructor Check-in												X		

Sprint Number	Sprint Start & End Date	Focus of the Sprint	Phase of the Sprint
0	April 26th – May 3rd	Learning, Researching	Requirements And Design
1	May 4th – May 17th	Design	Requirements And Design
2	May 18th – June 31st	Ramp Up	Design And Development
3	June 1st – June 14th	Develop	Development
4	June 15th – June 28th	Features (including Telemetry)	Development
5	June 29th – July 12th	Features (including Telemetry)	Development
6	July 13th – July 26th	Test, Refine, Analytics	Refine
7	July 27th – August 9th	Deliver	Handoff

To achieve a successful project completion within the Capstone, the product development team has identified the following tooling we will be using which will allow the team to work in the open and to facilitate interdependent conversations with out stakeholders:

Product management
- Mural Whiteboarding (ideation and design documentation)
- MS teams (team collaboration. Scrum meeting presentation repository)
- Atlassian Jira (task management/Kanban board)

Artefact Repository
- BCGov public GitHub (code repository, documentation WIKI)

Solution Development
- IDE: Microsoft Visual Studio
- Docker Desktop

Hosting Environment
- OpenShift
- GitHub Actions

Skill Development and Learning Goals
Skills Inventory

Matthew Logan
- Technical Proficiencies: React, JavaScript/Typescript, C#, API Design, and Implementation.
- Job-Ready Skills: Initiative, Leadership, Organization, Critical Thinking.

Dallas Richmond
- Technical Proficiencies: React, Docker, JavaScript/Typescript, C#
- Job-Ready Skills: Organization, Teamwork, Responsibility, Critical Thinking.

Tyler Maloney
- Technical Proficiencies: React, JavaScript/Typescript, C#
- Job-Ready Skills: Conflict Management, Written Communication, Critical Thinking.

<u>Learning Goals</u>

Matthew Logan
- Skills to develop: Teamwork
- SMART goals: By the end of the year, I would like to be able to work within a small team of developers and be able to direct them (and myself) towards successful deployment of a product.
- Reasoning: I will need to be able to demonstrate to employers that even as a junior developer, I am capable of delegating responsibility within my workgroup if necessary, and that I am reliable.

Dallas Richmond
- Skills to develop: Teamwork
- SMART goals: By the end of the year, I would like to be able to manage an orchestrated suite of containers and their respective images, to further develop my professional skills in containerization. In addition to the previous goal, I would like to create and manage a PWA of my own making, to better acquaint myself with full-stack development. This will also be completed by the end of the year.
- Reasoning: I will need to demonstrate my ability to manage a suite of containers to prove my prior learning. Also, I would like to demonstrate to my employer that I am capable of self-directed work.

Tyler Maloney
- Skills to develop: Initiative, Responsibility, Teamwork
- SMART goals: By the end of the year, I would like to be able to fill my personal GitHub repository with 10 working projects (webpages, react apps, PWAs, standalone applications, games).
- Reasoning: I will need to take more initiative in my professional development to prove myself useful to my future employer.

Success Criteria

<u>Teams</u>
The criteria for us determining whether the time/energy spent has been meaningful are mostly based on continuous learning. Simply being able to witness the level of organization and protocol that our sponsor follows allows us to integrate those patterns within ourselves through applied practice, which is a great boon to growing our understanding of what it means to work within the technology industry. Our specific criteria are listed below.

- That we have all gained a greater understanding of how to produce a product through the practical application of Scrum Methodology.
- That we have all further developed our soft skills, especially teamwork and communication.
- That we have established contacts within the technology industry and the government.
- That we have sharpened our technical prowess through direct application of learned skills, and problem solving.

Client

The client has identified this projects goals to include:

- Development of a documented set of common components that extend the existing knowledge base within the IMB.
- Development of additional best practices including the ability to conduct code reviews conformant to best practices and style guides.
- Engaging participation in Scum ceremonies.
- Furthering the common goal of continuous education by all Capstone team participants.

Milestone Summary

Project Milestone	Target Date (mm/dd/yyyy)
1. Project Start	04/26/2023
2. Project Charter	05/21/2023
3. DevOps Training	05/15/2023
4. Design, Data Models, UI	06/08/2023
5. Mobile App Prototype	07/08/2023
6. Data Analytics Platform	07/30/2023
7. Final Client Demonstration	08/08/2023
8. Handover of all project artefacts	08/08/2023
9. Project Complete	08/08/2023
10. Symposium Presentation/ Demonstration	08/11/2023

Conclusion

The primary goal of this Capstone is to contribute to the Information Management Branches continuous improvement its internal personal capacity allowing it to deliver modern applications using evolving technology on a diverse set of platforms and devices. A key component is the development of additional 'common components' such as location-based services, telemetry and data services. As a team we aim to achieve these goals by defining the opportunities, designing a suite of experiments and incorporating our lessons learned into a robust proof of concept delivered via the provinces containerized cloud-based hosting platform. The sponsor will engage with the core team regularly and has devoted an agile team to support the teams learning of these new methods and technologies throughout the Capstone project. Matthew Logan will assume the role of primary contact for this project team.

AUTHORIZATION

This section provides the names and authorization, once signed, for the project to move forward in accordance with the information contained in this charter. PLEASE leave this as a separate page. In the future this page will be removed and destroyed based on the requirements of the Freedom of Information and Protection of Privacy Act.

Project Sponsor

Robert W. Kobenter

Robert Kobenter

Solutions Architect   **Signature**   16/05/2023
                                                                          Date

Team

Matthew Logan

Matthew Logan

                          Signature   16-05-23
                                                            Date

Dallas Richmond

                          Signature   15/05/2023
                                                            Date

Tyler Maloney

Tyler Maloney

                          Signature   16/05/2023
                                                            Date