Reporting and Dashboard Service Improvement Project

Memorandum

To: Katie Tanigawa, Instructor, English Department
From: Samara Flueck, Skylar Kramer, Sunghwan Park
Date: June 20, 2021
Re: RDSI Project Progress Report

Summary Statement

Team RDSI has made significant progress on the initial user research and creation of our development pipeline and we can expect to meet our project goals by the end of our final sprint. Scope adjustments are required due to the initial learning curve that the team encountered and information discovered through our stakeholder engagements; however, these adjustments would ensure that the initial deliverables agreed upon are of a high standard and adhere to the initial goals of the project. We have confidence that a well defined minimum viable product will enable efficient development of our proof of concept prototype and handover documentation. We strongly believe that with the appropriate actions taken we will successfully complete the project by the end of our final sprint, August 4th.

Background

Client

The Digital Investment Office (DIO) belongs to the Ministry of Citizen Services of the Government of BC. They manage capital funding for projects aimed at improving digital services for British Columbians. Ministries awarded funding must submit quarterly reports detailing their performance to the DIO.

Situation

Ministries fill out the quarterly reports manually using spreadsheets; this process is time-consuming, error prone, and is a barrier to good decision making. Currently, dozens of projects are ongoing simultaneously. Therefore, it is difficult to ensure effectiveness and accuracy while reviewing, analyzing, and assessing reporting data with manual processes.

The DIO wants to improve the current manual process through the utilization of a web application. The system could pre-populate fields in a report using historical data to reduce the time it takes for a submitter to fill out a report. Data validation can be utilized to enforce data accuracy and will allow the user to be confident that data adheres to the business rules. In addition, executives could quickly summarize the overall performance with a dashboard and charts generated using data from these reports.

Parameters

The BC Government has an OpenShift platform that it uses to deliver services to citizens and has experience with Camosun capstone projects. These two factors guide this project as we develop and deploy on the OpenShift platform implementing continuous integration and continuous deployment (CI/CD) processes. We also learn and practice Agile methodology alongside select waterfall methods in our approach.

We share the source code and documents through a GitHub repository and do Agile sprint planning on a ZenHub board integrated with our GitHub repo. We share our tasks with daily standup notes and meetings while planning two-week period sprints with bi-weekly sprint review meetings.

Our final deliverables should be a working web application as a proof of concept and handover documentation demonstrating the rationale for promoting this project to be fully developed and funded.

Discussion

Results

DevOps pipeline set up

Thanks to Poornima Sivanand, senior technical architect at OCIO, we had several training sessions on the OpenShift platform. We now have a pipeline that streamlines the process from creating a pull request to deploying our app to the production environment. Although we had set it up mostly with her help, we can manage the workflow ourselves to meet our needs. It helps us focus just on implementation due to the time constraints of this project.

Stakeholder engagement and user research

The clients emphasized the importance of use case analysis and business requirements. Thus, we spent the first month interviewing stakeholders through several virtual meetings and exchanging questions and answers by email. Although their business process is complex, we now have enough material to develop the prototype to discuss the actual needs with concrete research.

Problems

An ongoing problem for the team is communication in an online work environment. Due to the complicated nature of the project and the wide experience gap, communicating technical difficulties and details requires more attention and forethought.

The team is also unfamiliar with the OpenShift platform prior to beginning this project. This platform has several quirks and can be difficult to understand for new users, so the team has encountered unexpected technical issues.

Finally, the team has problems regarding business requirements and standards due to a lack of clarity from stakeholders. Since the reports are currently filled out on an excel spreadsheet each submitter interprets each field slightly differently. Individual stakeholders each have a different idea of how the reporting process should go and what information is important to include. Scope should be adjusted to ensure we are still addressing the user needs and meeting the initial goals of the project. Additionally, this project is a government sponsored project and therefore must adhere to government privacy and security standards.

Individual Roles and Group Dynamics

Scrum Master

Samara fills the role of scrum master by facilitating sponsor and team communication. She also directs meetings and helps ensure any blockers are identified and addressed as soon as possible.

UX/UI Lead

Samara oversees the user experience and user interface design. This involves updating personas and journeys as we gain new information and overseeing all wireframe and screen mock-up work.

DevOps

Sunghwan implements and maintains Github and Openshift CI/CD Workflows so that the test and deployment processes will not impede members' tasks.

Back End Development

Sunghwan designs, implements, and manages the database and APIs so that data could be adequately presented on the front-end side.

Front End Development

Skylar develops the front end application with the team. This involves creating react components, feature implementation, and connecting the front end application to the API.

Data and Materials Collected

Due to the ongoing COVID pandemic, the team is unable to meet in person. However, the sponsors have provided digital resources and accounts to the team. The project sponsor provided examples of past quarterly reports and the team conducted interviews with possible users of the system. The team can use these to design the data model, create form fields, and develop a quarterly reporting system that is easily understood by its users. In addition to this, the team was provided with a provisioned instance on the OpenShift platform which will be used to host the application and its database. Our sponsor team provided the necessary training to use this platform effectively. The sponsors offered to make commercial software available if needed, however the team has not required additional software licenses up to this point.

Goals

Our overarching goal is to design a solution that improves the current quarterly reporting process. The deliverables for this goal are to develop a proof of concept prototype and handover documentation that details how to operationalize the system. This prototype should consist of a back end database to store reporting data, a responsive front end application as a tool for users to submit reports with, and an API to connect the front end to the back end.

The complete application will require a system that allows users to register, log in, view projects they are assigned to, submit quarterly reports, view quarterly reports, and, if logged in as a user with sufficient permissions, view detailed financial breakdowns of the available report feedback. The team's goal is to have these features implemented at a level where the application can be used to demonstrate the value of continued development on the platform.

Our short term goals are to complete the first iteration of front end prototypes before June 19th and to define the minimum viable product (MVP) for our prototype. The front end prototype involves a user being able to log in to the application, view existing projects stored in the database via an API call, and use a form submission to add data to the database. The MVP should be what we can reasonably accomplish to meet the overarching project goals by the end of our Capstone.

Concluding Sequence

The project is on track and we expect to complete our immediate and overarching goals within the expected time frames. Our short term goals are to present a basic front end prototype that can send and retrieve data from the database through an API and to define what our prototype should consist of to be considered a project success. Our long term goal of designing a solution to improve the current reporting process and develop a prototype with handover documentation is on track. We are pleased with our progress thus far and with some slight scope adjustments we are confident we will produce the deliverables required for this project to be a success by August 4th.