
Project Management Plan

for

Project Tyr

Version 1.0 draft 1

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Washington Hospitality Association

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Revision History

Name	Date	Reason for Changes	Version
The early worms	9/16/22	initial draft	1.0 draft 1
The early worms	10/16/22	Update to reflect clarified milestones	1.1 draft 2

1. Overview

When making important decisions, it is important to be as well-equipped as possible. This project aims to equip policy makers, industry leaders, researchers, and the public body with the information they need to make educated decisions in the hospitality domain. Improving the accessibility of information and important data metrics for the hospitality industry will help facilitate crucial ongoing research in the domain and improve the body of knowledge available regarding it. When the project is finished, it should provide an accessible resource where industry leaders can go to see clear benchmarks and statistics about the health of the hospitality industry in Washington state.

Work on improving accessibility to these data sets has been in progress for several years. This project is the culmination of that work. Improved accessibility to this data will be achieved by creating a data visualization pipeline. The pipeline will do several things. First, it will allow important data from the state to be easily and directly uploaded to a secure database that will anonymize any personally identifiable information contained within and aggregate the data so it meets legal obligation for display to the public before being loaded onto a publicly accessible database. From there, data visualization tools can be configured to request data from the public server and display them in various graphical forms. The pipeline will utilize Microsoft BI dashboards embedded in a WSU website to accomplish this.

The project will be considered successful if all milestones are implemented, verified, and deployed by May 23rd, and there is no need for follow up work outside of maintenance of the system or adaptation of the system to new data visualization software or new business domains.

Constraints: This project will need to integrate with work done by previous teams. Specifically, the data ingestion, storage, aggregation, access control systems, and dashboards that are already in place.

1.1. Project Purpose, Objectives, and Success Criteria

Project Scope:

The timeline for delivery of the product to the Washington Hospitality Association has already been pushed back by a year or two. So, the priority is to create a system that meets their needs as soon as possible. Which, in summary, is to have objective data available to them regarding the health of the hospitality industry in Washington state on demand. There are aspirations for the project to be replicable and scalable to a wide variety of enterprise purposes, such that it could be used at a federal level or to visualize data in other industries, as well as for the data ingestion system to be completely format agnostic and visualization system agnostic. However, these are not things the client needs from the system themselves, they just add value to the resource that is being created. Thus, the scope of the project has been reduced from its aspirational goals to focus on functionality for the client, with the anticipation that if resources allow, the project can be expanded upon once those crucial obligations are met.

The primary deliverable will be a WSU hosted webpage that contains embedded power BI dashboards that are configured to query the public database containing aggregated data and display by what percentage various metrics have changed over time. The project will be considered a success if that milestone is delivered on time and the website is able to quickly and clearly conveys relevant statistical information about the hospitality industry. Another highly desirable but not critical deliverable will be to create documentation and user manuals for the whole system, such that those without technical expertise can successfully upload data to the

system, and software maintainers have documentation that allows them to effectively troubleshoot the system.

Feature dependencies:

The largest feature roadblock is the handling of the data after it has been aggregated. It needs to be stored in a database, and that database needs to be connected to the Power BI dashboards that were created by the previous teams. Those steps likely need to happen sequentially, followed by the creation of the website as it is dependent on the dashboards.

Resource dependencies:

The software team needs access to AWS, the aggregated data, the previous team's Power BI dashboards, and authorization to create a WSU website. Those things should be resolved as future meetings are held with Bill Bonner and Nathan Roberts.

1.2. Project Deliverables

Deliverable	Delivery Date	Delivery Method	Comments
Website with Embedded Power BI dashboards	May 23rd	Deployment of website	
Press release kit	May 23rd	Execution of a press release about the product	
Storage of aggregate data		Code turned over to Bill Bonner's team	
Configuration of Power BI Dashboards		Dashboard's will be within Nathan Robert's Care	
System Documentation / User manual	May 23rd	Manuals given to Brad Gaolach	
Preliminary Project Plan	September 16th	Turn in to Dr. Zeng	
Project description, clarification, and broader impacts report	September 30th	Turn in to Dr. Murray and Dr. Zeng	
Phase 1 final submission	October 16th	Turn in to Dr. Zeng	
Agile sprint report	October 21st	Turn in to Dr. Murray and Dr. Zeng	
Concept Selection	November 10th	Turn in to Dr. Murray and Dr. Zeng	
Report of Alpha prototype activities	December 10th	Turn in to Dr. Murray and Dr. Zeng	
Phase 2 final submission	December 11th	Turn in to Dr. Zeng	

1.3. Assumptions, Dependencies, and Constraints

Assumptions:

- The BI dashboards that have been made previously are applicable to the project, and the match up to the aggregated data.
- The aggregated data is suitably organized to be housed in a public database.
- The final website will be housed in WSU's system, and will thus need to be built using WSU's internal tools for branding.

Dependencies:

- Access to AWS
- Access to the aggregated data
- Access to the previous team's Power BI dashboards,
- Authorization / tools to create a WSU website.

Constraints:

- The project needs to be compatible with existing software tools. Like BI, word press, etc.

1.4. References

Example of what a WSU website containing visualizations could look like:

<https://business.wsu.edu/bnw-2022/>

Covid 19 dashboard Microsoft BI reference: <https://doh.wa.gov/emergencies/covid-19/data-dashboard>

1.5. Definitions and Acronyms

Power BI – Data visualization software developed by Microsoft. BI stands for Business Intelligence

WHA – Washington Hospitality Association

WSU – Washington State University

2. Project Organization

The Washington Hospitality Association tasked Washington State University with the creation of a tool that could provide data about the health and wellbeing of the hospitality industry in Washington state. As such, the Washington Hospitality Association is the client, and Washington State University the producer of this tool. The software development team has been tasked with the production and engineering of this tool, so the software development team reports to managers of the project at Washington State University, and they are the source of project specifications.

Kris Koehn is the designated technical communication liaison and interfaces with the technical mentoring team, faculty volunteer and instructors as needed. Selena Cha interfaces with the project's clients and marketing contacts on behalf of the software development team as needed.

2.1. Process Model

This project will use the incremental process model. The incremental model divides the system's functionality into increments and emphasizes getting core system functionality working as soon as possible so that stakeholders can see the product in action quickly and can indicate whether it does what they desire it to do or not. Once core functionality is implemented, each component of the system is incrementally expanded upon until the full feature set of the system is implemented and sufficiently iterated upon. Using this approach, each increment goes through

several development phases. Defining requirements, design of a solution that meets those requirements, implementation of the solution, and testing/verification of the solution.

This project will also utilize two-week sprints like are done in Agile process models. These sprints might not have a one-to-one relationship with the project's components but will provide concrete structure and goals regarding feature development and will allow the development team to demo the work they have done frequently, so that if there is mentor or client feedback regarding the work done, they have opportunity to give it.

Using this kind of hybrid process model will require significant project management overhead to make the most of it, but it is anticipated that those costs will be offset by increased development team productivity. Additionally, this model allows for requirement changes throughout development, but if there are not significant requirement changes, adhering to this model does not cost significantly more project management overhead than a less flexible model would.

2.2. Organizational Structure

The software development team is non-hierarchical. All developers are both team leaders and team workers. Decisions are made democratically and collaboratively. Tasks are dynamically taken up by members such that each team member's strengths are leveraged where they are most valuable, and weaknesses are mitigated. Working in close collaboration with the software development team is Selena Cha, who lends her business insight to the project.

The software development team reports most directly to Dr. Zeng and Dr. Beattie concerning the progress of the project through communications liaison Kris Koehn.

2.3. Roles and Responsibilities

The major team members of this project include:

- Clients
 - *Anthony Anton*
 - *Mark Beattie*
 - *Brad Gaolach*
- Faculty Volunteer
 - *Bolong Zeng*
- Marketing Contact
 - *Corrie Wilder*
 - *Sara Druffel*
- Technical Mentors
 - *Bill Bonner*
 - *Nathan Roberts*
- Business Consultant and Communications Liaison
 - *Soyeong “Selena” Cha*
- Software Engineers
 - *Arlo “Teddy” Jones*
 - Responsibilities: Project documentation / User manual
 - *Jadin Sadler*
 - Responsibilities: Website development
 - *Kris Koehn*
 - Responsibilities: Configuring Power BI dashboards
 - *Vlad Onyshchuk*
 - Responsibilities: Storage of aggregate data
- Technical Communications Liaison
 - *Kris Koehn*
 - Responsibilities: Setting meetings, submitting documentation, reporting progress to clients

3. Managerial Process Plans

3.1. Management objectives and priorities

The software development team will be using Discord, Microsoft Teams, and a third-party project management application YouTrack to work towards a complete application. To ensure that the team remains on track they will hold meetings twice a week to check on the completion of tasks. The team liaison will be responsible for reaching out to the stakeholders with any questions that might arise and will be the main point of contact for gaining additional information the team needs.

Flexibility Matrix			
Project Dimension	Fixed	Constrained	Flexible
Impact			X
Schedule	X		

Scope		X
Quality	X	

The impact the project will have is difficult to quantify. Anthony Anton envisions that by virtue of this software, WSU will be a national leader in hospitality research and information for the next several decades. That impact might be significantly greater if the project is scaled to include data from multiple industries or scaled to include data from other states with similar tax structures. It might be less impactful however if the product is not sufficiently useful or useable for its audience. The schedule is fixed because the project is in its final steps of development and needs to be completed by the end of this year. The functionality and implementation of the project can still be changed over the course of the year, but the client's expectations regarding the scope are very clear in the short term. Quality metrics still need to be established, but a lot of feedback has been given to previous teams, so that feedback may offer insight.

3.2. Assumptions, dependencies, and constraints

Assumptions:

- Stakeholders will attend scheduled meetings
- The development team will stay on track with the project deliverables outlined
- Team members will communicate effectively and get their work done.
- The software development team will have the discretion to pivot the project requirements and milestones according to client needs.

Dependencies:

- The process model specified above does rely on having well defined core functionalities to build and iterate on. If those functionalities are prone to change, or their definitions are elusive, the process model will not be an effective strategy.

Constraints:

- The software development team is responsible for the management of the project. In general however, project managers maintain a close working relationship with their clients. In the case of this project, the development team is one degree removed from the client so the team will need to rely on Bill Bonner and Mark Beattie to ensure the project is hitting it's mark appropriately.

3.3. Risk management

Current sources of risks include communication breakdowns, tight schedules, inexperience with new software development tools, missing or unclear project documentation, and choice of process model / objective prioritization.

Those risks can't be completely eliminated, but they can be mitigated with proactive effort to facilitate ongoing communication, manage schedules, and tackling project unknowns. Arlo Jones will oversee tracking and mitigating project risks.

4. Technical Process Plans

4.1. Methods, tools, and techniques

It is likely most of the code for this project will be developed using C# or Python, but that may change depending on how the project will need to integrate with existing code. Version control will be done using Git. Documentation will be done using Microsoft Word. Amazon Web

Services are utilized for data ingestion and storage. Data visualization systems will use Power BI.

Requirement analysis will mostly utilize interview methodologies, as well as domain research. Design generation and selection will be done through a breakdown of solutions for each subsystem and the comparative analysis of different combinations of solutions for each subsystem.

4.2. Software documentation

Document	Template or Standard	Created By	Reviewed By	Target Date	Distribution
Project Management Plan	Template	The early worms	The early worms	9/18/2022	
Engineer oriented maintenance manual	Standard	The early worms	Bill Bonner	5/23/22	
Data upload user manual	Standard	The early worms	Brad Gaolach	5/23/22	