

Travelling Technology Bus Schedule System

Agile Project Management Plan

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(Group T08_02 Tutorial 8)

1. Executive Summary

We are building a website for a 'Travelling Technology Bus' system. This would be a well-designed bus and a system with implementation of the latest technologies. This bus would travel to the regional schools and interact with the technologies displayed. This project is likely to benefit the children in regional areas who have less exposure to STEM subjects and have been highly impacted by the COVID-19 restrictions.

Considering the requirements of the business case, we have developed a good project management plan for building a website for business owners Sally and Anna. Our approach towards the project plan started with detailed reading of the business case several times, identification of tasks, and recording the possible challenges and risks that could occur. Project information contains the key stakeholders of the project, scope, the Software Development Life Cycle(SDLC) we use, the business value of the product we would develop and the constraints which we would face. The key stakeholders of this project are the project team, Sally, Anna, the government, end users of the project and the funding agencies which would support this project. We have finalised on the agile SDLC model for project management plan. We have chosen the agile model as the software development approach as we work on the concept of iterative development.

The tasks are broken down into small iterations and do not involve long term planning. The division of the entire project into smaller iterations helps to minimize the incoming risks and reduce the delivery time. Even the business case contains the list of all the requirements, therefore it becomes easy to follow an agile approach. In addition to the usual constraints of time, scope and cost, we have some unique constraints such as online collaboration with group members, lack of technical skills, troubleshooting issues and different business considerations. In terms of project governance, we assign various roles and responsibilities to group members according to their skills, design a good communication plan, create a risk management plan by classifying risks according to their nature, and select appropriate technology. In terms of risks, we summarize the risks into a risk table and identify their probabilities and priorities. We also have taken into account the possible triggers and impact that could happen due to these risks. In terms of technology, we did research on many technologies such as HTML, CSS, Bootstrap, React, Wix and Wordpress and compared their advantages and drawbacks and considering the skills and hands-on experience of all team members on these languages, we finalized Wordpress as our development tool for creating web pages. Due to the zero budget of our project, we have decided to choose a lower level software tool for development.

In terms of project planning, user stories are created and tagged with the necessary story points so as to estimate the time required for completion of the project. We are using burndown charts for tracking the current progress of each group member. There are a total of 3 sprints required. Each Sprint accounts for 1 week. The maximum time required for completing these sprints is 50

hours. Furthermore, we are using a trello board for the proper managing and allocation of the tasks among the team members. In the group planning phase, we are giving some rules and guidelines for participation, code of conduct and meeting to our team members to be followed.

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3. Introduction

3.1 Purpose

The main purpose of this document is to provide a detailed project management plan for developing a 'Proof of Concept' web application system as an aim to help to develop the functionality for Sally's business 'The Travelling Technology Bus' and building a website prototype for project's end users such as the government, users (schools) and funding agencies. This document also facilitates project management and progress tracking.

3.2 Audience

The target audience of this document are the stakeholders of the project who include Sally, Anna, project managers, technical leaders, the external stakeholders such as the government and the sponsors for the project. They are key people in building and managing all the tasks for the project.

3.3 Evolution

Version	Individuals	Date Created	Comments
0.1	Lee Guo Yi	04/09/2021	Created template, added titles and sections
0.2	Lee Guo Yi Yuqing Zhou Qiutong He Yateen Chiplunkar ZhanzhaoYang	06/09/2021	Added content for section 6.1, 6.2, 4.3, 4.5, 4.6, 4.1, 4.2, 4.4, 1, 3.1, 3.2, 3.3, 5.1, 5.2, 5.3, 5.4, 5.5
0.3	Yuqing Zhou	07/09/2021	Edited content for 4.3
0.4	Yuqing Zhou, Zhanzhao Yang Qiutong He	09/09/2021	Edited content for 4.5,4.6, 5.1-5.4, 4.4
0.5	Qiutong He Lee Guo Yi Zhanzhao Yang	11/09/2021	Edited content for 4.2, 6.1, 6.2, 5.1-5.4
0.6	Zhanzhao Yang Yateen Chiplunkar Lee Guo Yi	13/09/2021	Edited content for section 5.1-5.4, 5.5, 4.2
0.7	Yateen Chiplunkar	14/09/2021	Edited content for sections 1, 3.1, 3.3

4. Project Information

4.1 Key stakeholders

Project team:

External / Internal: Internal
Influence: Low
Engagement: Supportive
Description:

The project team is hired by Anna's firm, the team normally follows the order, it doesn't have enough power to make a change or key decision, but it can be aware of the project and support the change.

Sally:

External / Internal: Internal
Influence: High
Engagement: Champion
Description:

One of the co-founders of this "Not for profit" organization, and she is also the proposer of the project and event. Should update her advice and requirements frequently. The project team is hired by Anna's firm, the team normally follows the order, it doesn't have enough power to make a change or key decision, but it can be aware of the project and support the change.

Anna:

External / Internal: Internal
Influence: High
Engagement: Champion
Description:

Experienced with this development, and she is one of the co-founders of this "Not for profit" organization. Should manage closely and frequently asked for her advice.

Government:

External / Internal: External

Influence: High

Engagement: Neutral

Description:

As the project needs to be granted by the government, the government has the key decision right, but it would be neutrally engaged, as it is the external stakeholder, the potential grants and funding would depend on the prototype's quality, and due to the Covid pandemic, the government would evaluate the risk to support this project. It should be communicated frequently to update the current restriction policies and other requirements.

Users:

External / Internal: External

Influence: Low / Medium

Engagement: Supportive

Description:

Users or schools are normally the taker sides, even if they don't have enough power to bring significant change or make the decision to the project, they could actively support the change, the project could help to bring extracurricular activities to assist normal on-campus education.

Other funding agencies:

External / Internal: External

Influence: High

Engagement: Supportive

Description:

Similar to governments, funding agencies' funding determines the upper bound of the budget, and as external sponsors, they would evaluate the project to figure out if there are any future financial benefits, they would actively support the change if it is beneficial. Should frequently communicate with them to recognize their need and their investment target to make this project a reality.

4.2 In-scope

The in-scope requirements for this project is the necessary development and creation of a prototype web application for school representatives to be able to book appointments with the Travelling Technology Bus.

The In-scope details consist of a booking website with 2 different user access: Admin and Customer. It also requires a database storage that stores all the information details from the booking website.

Website access for Admin requirements:

- Admin User is able to login using the default e-mail address and password.
- Admin User receives an email when a customer indicates a new expression of interest with the following details:
 - School Name
 - Address
 - School Type
 - Message
- Admin User is able to view the list of all expression of interests received from the school with the following details:
 - Name of School
 - School Type
- Admin User is able to click the schools in the list of all expression of interests as a Hyperlink.
- Admin User is able to schedule time window for the school to choose the bus visit with the following details:
 - Expression of Interest Acceptance ID
 - School Name
 - School Type
 - State Date
 - End Date
- Admin User will receive an email if a cancellation of the bus visit has occurred.

Website access for Customer/school representative requirements:

- The Customer is able to register an account with the following details:
 - School Name
 - School Contact Name
 - School Contact Number
 - E-mail address
 - Password
- The Customer is able to login with the registered e-mail and password.

- The Customer is able to register an expression of interest to request a bus visit with the following details:
 - School Name
 - Address
 - City
 - State
 - Postal Code
 - School Type (Hosting School or Visiting School)
 - Is Secure Parking Present (Yes or No, only if School Type = Hosting School)
 - Total Car Parking Spaces (Numeric Field, only if School Type = Hosting School)
 - Total Open Areas (Numeric Field, only if School Type = Hosting School)
 - Visiting School Name (Text Field, only if School Type = Visiting School)
 - Nearest Host School Name (Text Field, only if School Type = Visiting School)
 - Distance from Nearest Host School (Numeric Field, only if School Type = Visiting School)
 - Message (Text Field)
- The Customer should receive an email to schedule the time for the bus visit and would be able to choose a time from the schedule with the following details:
 - Expression of interest Acceptance ID
 - School Name
 - School Type
 - Start Date
 - End Date
 - Participate In Specialised Activities?
 - Total Students Participating
 - Cost per Student
 - Total Cost
- The Customer is able to change the Start and end Date if necessary, within the condition that the start date and end date difference is at least one week and not more than 3 weeks.
- The Customer should be able to cancel a scheduled visit with the following details:
 - Expression of Interest Acceptance ID
 - School Name
 - School Type
 - Start Date
 - End Date
 - Participate in Specialised Activities?
 - Total Student Participation
 - Cost Per Student
 - Total Cost
 - Reason for Cancellation

Website Database Requirement:

All information from the inputs and data that are filled up by both Admin and User are required to be stored and be available in a database storage.

4.3 Out-of-scope

- Although Sally and Anna need to build an application and a web application to manage the tour bus schedule, the project team is only required to choose either, and thus only chose to work on the website.
- The requirement of this project is to build a prototype of the product, not a complete product. The team is only required to realize the main functions and features of the product, whereas optimization of further details and design is not necessary.
- We do not need to develop any of the requirements listed in the subsequent design of Phase 2. The project team only needs to complete the design and development of the first stage to help Sally and Anna get the funding from the government and sponsors.
An example: Implementation of a payment functionality. Even though this is a necessity in completing the booking appointment process, the shopping cart and payment system are part of the second phase of development.
- Integration of separate UI interfaces for both Admin and User. Separating the interface would help ease the usage functionality in various aspects between Admin and User, however, it is not required in this project.

4.4 Delivery Approach

In this case, the required product is a Web application for booking and scheduling, the project size is not large, even the customer doesn't give an explicit delivery time for the first phase of development, but it should have one. Considering the current funding demand from Sally and Anna, the budget or cost of this project would not be generous. Even if the current requirements are stable, Sally and Anna would also be able to make changes in the future under such uncertain scenarios, and due to Anna's profession in Web development, frequent advice can be given. The developing team are University of Melbourne students, and most of the team members are inexperienced with full-stack development.

The software development life cycle (SDLC) to be used for this project is an Agile model of Scrum, as this project size is small and the budget is not sufficient, the customer is still seeking external funding at the current stage, a more flexible delivery approach would be applied, the Scrum method could be used to improve cost control, after each sprint is completed, the team would review the budget and make a future decision [1]. And even though Anna is experienced with this project, the project team members are not, most of the team members are first time to develop Web application, it is a learn by doing process, therefore, it is very hard make a

comprehensive plan before the start of the project, the development process would have some potential difficulties which we could not well foresee given the team members' limited experience, the flexibility from Scrum method for any changes would make in the future is essential, such that the project could reduce the exposure to some product risk, for example, the implantation risk, if the project team find any required function cannot be implemented by current platform or techniques, the back-up plan or other substituted method would be applied. By using the Scrum, project team could be cross-functional, each member could be developer or tester in the project, so if anyone has a difficulty to resolve a problem, other team members could give a help, but in the formal models, each team member has a specific roles, for example, if someone is assigned to be a tester, any problem in developing or designing stage are non-related to his or her job, the collaboration within the team would be too rigid, and such kind of work may cause a delay for delivery or loss of required functionalities. Considering Sally and Anna are highly actively engaged in this project, as mentioned in the stakeholder's part, both of them are "Champion", in order to keep aligning the product with business needs to maximize business value [2], they would keep communicating with the project team to deliver their enhancements or changes to the expected outcome, and Anna's rich experience characteristic would make her give advice frequently, Agile model's feature of focusing on communication and demanding customers' time would fit such scenarios. Furthermore, under the Covid pandemic scenario, everything changes from the normal case, the restriction policy and work from home condition would bring too much uncertainty to the development process, therefore it is not wise and unlikely to plan everything at the beginning, Agile's embracing changes' feature would be more suitable to deal with such situations. Flexibility on time and management, and resources for adjustments for any potential changes are highly demanded in this case. Hence, Scrum is the ideal choice for the project team.

However, using Scrum does also have some drawbacks, it is inevitable, but some potential solutions could be used to reduce the effect from the disadvantages. Because the Agile model highly demands communication, but under the Covid scenario, face to face communication would not be available at the current stage, finding a substituted method to achieve the same level of high-quality communication is a big challenge, and the process management and state tracking would become more difficult [3], but the project team would fully utilize the currently available communication tools like discord, zoom and WeChat to maximize the communication quality and efficiency to hold the Scrum ceremonies like daily stand-up and sprint reviews, the Trello board would also be used for process tracking. And it is different from the formal model, the effort cannot be assessed well at the beginning stage, the story points may be estimated with errors, but due to the flexibility feature and the small size of the project, such errors in estimation would be easily eliminated. As Scrum needs an experienced scrum master to manage the project, even if the members are not professional, Anna would give suggestions and directions to lead to success based on her previous professional experience in this area.

There are several reasons to reject the Waterfall delivery approach. Waterfall delivery approach not only would incur a large amount of cost, time and effort on documentation, but also if the unexpected problem happens, the whole process would restart from the origin, which would be way too challenging at the current stage with no other external funding. And as discussed above, there are too many uncertain issues may happen during the future development process, Sally and Anna would highly actively engage the project, however the Waterfall approach is a too rigid one [4], it does not provide any flexibility to adjust to the changes, and the product testing is only done at the final stage, so if there is any product risk happened, for example, the Web application is completed, but auto email notification cannot be implemented, the software need to be redesign and reproduce from the first stage, delay of delivery or fail to deliver the product may happen, and the such duplicated process would incur further large cost on resources and time. And as mentioned, even Anna is experienced with the process, but the development team is not experienced, a rigid plan cannot efficiently direct the team to complete the task, flexibility and changes should be the key considerations. What's more, Waterfall and other formal models are required to do loads of documentations, each step needs a sign on, the procedure is rigid and complicated.

4.5 Business Value

School (The most direct user for the product)

Non-financial Benefits :

- The school activity arrangement is more convenient, which can help the school to arrange the activity time reasonably.
- Get young students in area schools interested in STEM subjects. Stimulate students' further interest in the subject.
- Reduce the need for district schools to organize short trips.
- Maximize the number of students who visit the bus.
- Book a skill improvement class with a teacher.

Sally & Anna & Founding agencies

Financial Benefits :

- Each student participating in the activity needs to pay a fee of 30 US dollars.

Non-financial Benefits :

- Creating such a public welfare software helps Anna's company's reputation.
- By sponsoring this public welfare project, they have enhanced their reputation.
- Sally's children can have access to STEM knowledge.

The project team

Non-financial Benefits :

Since we are a student team, we are relatively lacking in project management and development experience. This is a good opportunity for us to practice, so as to help us better learn project management and project development.

Government

Non-financial Benefits :

- Benefits for local education.
- Enhance the authority of the government in the minds of the people.

4.6 Constraints

Time:

The project also has a time limit. We have to finish it in 3 weeks. Because we are a student team, we are not very experienced. However, the project is not very small, so three weeks is a very tight time to complete the development of the project. We must rationally divide the labor and pay attention to the progress of the project to ensure that the project is completed on time.

Cost:

Sally needs to obtain the sponsorship from government departments and sponsors through this preliminary model, so the cost of this project will be strictly controlled in the early stage and the budget will not be too much. This is a non-profit organization, but the project requires money in many areas, such as staff training, so it is uncertain how much of the future sponsorship funds can be used for the development of this product. Sally and Anna also need to build a Web application and an application to implement the tour bus schedule. The whole project requires a lot of money, so the cost control must be strict.

Scope:

Only the transactions in the product backlog above need to be completed. Because the time and cost of this project are strictly controlled, if we do some additional design and development outside the project, our cost and time will become more compact. Therefore, we must strictly control the scope of the project to ensure that the work within the scope of the project can be completed on time and in quantity.

5. Project Governance

5.1 Roles and Responsibilities

Product Owner (PO): PO is responsible for managing and making product backlogs as well as prioritized lists. Also, PO should understand the customer's (Sally and Anna's) needs and answer questions regarding the agile team's needs (communication). The PO is required to analyse the requirements and determine how the development team interprets the requirements and transfers them to concrete modules in the software. – Yuqing Zhou

Scrum Master: The person should coordinate the team, ensure the progress of the instruction from the PO and communication between team members about evolving requirements and planning. The Scrum Master is responsible for organizing the date and time of the meetings, management of the Sprints, and ensuring team members are working towards the goal. He is responsible for managing the project development files as well as project management information in Trello. – Lee Guo Yi

Dev Team Members: Everyone in the development team should participate in all development activities such as product designation, coding, program testing and UI/UX designation. The reason is that this assignment is a great opportunity to practice and experience web/application development as a student. Everyone has the wish to go through each part. – Lee Guo Yi, Qitong He, Yateen Chiplunkar, Yuqing Zhou, Zhanzhao Yang

Subject Matter Expert (SME): The person should know the knowledge of technology related to the project well. In practice, the person is responsible for the development tool selection and giving guidance on how to realize some expected functions if other team members have technical problems. Specifically in this project, every team member is required to gather information about different development platforms for learning purpose, but SME makes the final decision. – Yateen Chiplunkar

5.2 Communication Plan

The communications within the development team include meetings twice to three times a week (based on the expected workload) as well as casual information exchanges whenever someone wants to share new findings or ask questions.

All members are required to register Discord and Facebook applications for communications. For weekly meetings, the communication tool is discord, at least one meeting during weekends and one meeting during weekdays. The meetings will be held at night mostly, as all team members are full-time students.

The exact dates and time of the meetings will be determined at the end of the previous meeting and announced in Facebook group chat.

In emergency situations, such as Discord/Facebook server shutdown, all appointments and discussions will be arranged through Unimelb student emails. The backup meeting tools are Zoom and WeChat. If someone loses connections for several days, other team members will try to contact the person through phone calls. If the person is still missing, other team members will contact the subject instructor to resolve the issue.

The project-related files are stored in the shared Google Drive managed by Lee Guo Yi. The project management tool is Trello, which is also managed by Lee Guo Yi. Every team member should inspect and check updates of the shared workspace daily. Any local update by personnel should be uploaded to the shared drive to ensure the progress of the project.

If any team member disagrees on the interpretation of requirements, he or she should leave the opinion in the Discord channel. All team members should join the discussion about it, but the decision will be made by Yuqing Zhou at the closest group meeting.

Any technical issue during development should be posted in the Discord channel as soon as it is spotted. Yateen Chiplunkar is responsible for giving suggestions, but the others are also encouraged to share their knowledge about it. Solutions and updates should be reported on the closest group meeting.

5.3 Risk Management - specific risks

Risk ID: S-1	Type: Product	Probability: 70%
Description: School representatives might type in incorrect registration information which is crucial for communication and tour organizing such as addresses and emails.		
Justification: As the registration information is meant to be filled by school representatives manually, there is a chance that they input incorrect registration information due to many reasons. They might forget the exact addresses or the names, or just accidentally make a typo. As there is no information validation requirement mentioned in the context, Sally and Anna might use the incorrect information for their work. The consequence can be neglectable or severe. For example, only one incorrect characteristic or digit number can result in the loss of connection to the school representative, which can delay the efficiency of tour organizing heavily. Therefore, our team considers it as a key risk.		
Impact: 4	Owner: Sally and Anna	Response Type: Avoid
Response: After schools finish registration, Sally or Anna might need to confirm the schools' information through phone calls. And if necessary, they can ask schools to upload validation documents.		
Trigger:		Resource required:
(1) Sally and Anna can't contact the school representative using the information registered in the database for days. (2) Sally and Anna can't find the campus using map softwares such as Google Maps using the information registered in the database.		Sally and Anna's time

Risk ID: S-2	Type: Business	Probability: 40%
Description: In practice, the number of host schools and visiting schools is unpredictable. Therefore, an unbalanced ratio of hosts and visiting schools may exist in the database, which is hazardous for activity organizing.		
Justification: After launching the product, the ratio of hosts and visiting schools might be very unbalanced. Sally and Anna may not be successful in inviting schools to join this activity. Potential hosting schools may reject their invitation as they can't see too much benefit from it. Regional schools may be reluctant to participate as they are not interested to begin with. If there are too few host schools or too few visiting schools compared to the other, it will be super difficult for Sally and Anna to organize the tours, and result in a long waiting queue on one side. The infinitely long waiting is a waste of attention and disappointment to collaborators. Therefore, it is a key risk as well.		
Impact: 5	Owner: Sally and Anna	Response Type: Mitigate
Response: Anna or Sally may have to pay more attention to school selection and the ratio of hosts and visiting schools.		
Trigger:		Resource required:
(1) Long waiting queue of host schools or visiting schools remains in the database; (2) School representatives' calls complaining about the long waiting time.		Sally and Anna's time

Risk ID: S-3	Type: Business	Probability: 20%
Description: Schools may have emergency issues on the day of bus traveling which can impact the travel but haven't canceled the tour.		
Justification: Even if the project includes a cancellation module, such an issue is still possible. For example, if on the day of touring some issue happens to the bus driver, the tour will be canceled without previous notification. These unpredictable issues are beyond the cancellation function's ability. If it happens too often, the collaborations can be heavily disrupted.		
Impact: 3	Owner: Sally and Anna	Response Type: Transfer
Response: Sally and Anna should inform both schools and related persons that the tour is canceled. Afterward, Sally and Anna can charge additional fees from the absent schools if they don't have an acceptable reason for that.		
Trigger:		Resource required:
School representatives' calls about cancellation on the day of the event.		Sally and Anna's time; end users' money

Risk ID: S-4	Type: Product	Probability: 20%
Description: Email notifications might be ignored by the school representatives if the emails are deemed as spam emails or representatives just don't check their emails regularly.		
Justification: As described in the materials, many steps such as registration, appointment are confirmed through email notification. But it is pretty common that these confirmation emails might be sorted as spam emails automatically by the system. In such situations, school representatives may not be able to complete their intentional actions. If it happens too often, the consequence can be critical as the booking system is extremely inefficient, users may tend to choose verbal communications instead of using such apps/webs.		
Impact: 2	Owner: Sally and Anna	Response Type: Avoid
Response: Admins should notify the representatives to set our email address into the whitelist.		
Trigger:		Resource required:
No response from school representatives after they finish certain steps such as intimation for several days.		Sally and Anna's time; end users' time

Risk ID: S-5	Type: Business	Probability: 20%
Description: School representatives sometimes may make commitments verbally but don't do it in our digital system.		
Justification: Some school representatives may make commitments such as accepting the offer, providing the tour or canceling the tour verbally during the communication with Sally and Anna. But for many reasons such as forgetfulness, regression or lack of basic computer knowledge, they might not accomplish their commitments in our digital system. These invalid communications will waste a lot of time and effort of Sally and Anna, and potentially result in the frequent cancellations of touring. Furthermore, dissatisfactory collaborations may lead to the whole project failure.		
Impact: 2	Owner: Sally and Anna	Response Type: Avoid
Response: Admins should notify the representatives to set our email address into the whitelist.		
Trigger:		Resource required:
Sally and Anna may ask the representatives to do the actions during the talk or ignore the verbal commitments completely.		Sally and Anna's time

5.4 Risk Management - generic risks

Risk ID: G-1	Type: Project	Probability: 5%
Description: There is a risk that the requirements may have additional changes.		
Justification: Many issues may result in the change of requirements. For example, if certain functions are too difficult to accomplish during development, the requirements mentioned in the assignment might be modified, deleted or updated. In these situations, team members may have to develop existing functions over again and modify the related modules as well. Potential costs of these adjustments in terms of time can be too long for the team to finish in time. Therefore, it is a key generic risk.		
Impact: 3	Owner: Every team member, especially PO.	Response Type: Mitigate
Response: The team should have a group meeting closely after the change of the requirement and estimate the potential time cost. Next, the team should make adjustments to their plan and potentially increase the daily workload.		
Trigger:		Resource required:
Subject instructor releases announcements about updating assignment requirements/deadline		Every team members' time, Yuqing and Lee will spend more time re-organizing the plan.

Risk ID: G-2	Type: Project	Probability: 20%
Description: Team members may lose contact with others.		
Justification: Team members can be absent from some meetings or unable to respond to messages in time for many reasons, such as illness and family issues. In such situations, the progress of an agile project can be heavily influenced as it requires frequent meetings and communications among team members. Therefore, it is a key generic risk.		
Impact: 3	Owner: Every team member	Response Type: Mitigate
Response: As the team is using the agile management method, everyone will communicate with each other frequently, thus someone's absence can be notified fast. As mentioned in the communication plan, everyone should try to contact the missing person as soon as possible. If he or she is not reachable for 2 days, team members will ask subject coordinators to resolve the issue.		
Trigger:		Resource required:
The other team members lose connection with a certain team member, while he or she is absent from meetings without any reason.		Every team members' time; the time of the subject instructor and the police's help (potential)

Risk ID: G-3	Type: Project	Probability: 20%
Description: The devices used for development or communication may shutdown or be out of work.		
Justification: As our team is using third-party platforms to develop the app/web and communicate with each other, the temporary shutdowns of these platforms might happen at critical timepoints in our project, thus it can be a key generic risk. For example, if the development platform is under maintenance for several days, and at the same time the development team is busy with coding before a deadline, this temporary system shutdown can lead to late-submission penalty.		
Impact: 3	Owner: Every team member	Response Type: Mitigate
Response: The team should choose multiple tools for communications, one as primary and the others as backups. Programs under development should be uploaded to a shared cloud server such as google drive whenever they are updated. Many development tools have offline versions, every team member should install the software in his or her computer and make sure they can work as normal under offline situations.		
Trigger:		Resource required:
The team members receive the notifications from the platforms, and can't connect to the software server.		Every team members' time, especially Yateen as he is the subject matter expert.

Risk ID: G-4	Type: Product	Probability: 5%
Description: General IT security issues may happen during the development process.		
Justification: Although this is a non-profit project, it is possible that hackers penetrate the system and steal user information for benefit. More often, some users just accidentally expose their account details. Such issues will cause severe consequences such as lawsuits from users and subsequent financial loss. Therefore, it is a key generic risk.		
Impact: 4	Owner: Sally and Anna	Response Type: Transfer
Response: Sally and Anna should emphasize the importance and responsibility of account privacy to every user, and charge fees for possible consequences if it is due to certain end-users. Moreover, if the project is expanded to a big enough scale, collaboration with cybersecurity corporations can be considered		
Trigger:		Resource required:
Sally and Anna notice the weird changes of information stored in the database.		Sally and Anna's time and money; end users' money.

Risk ID: G-5	Type: Business	Probability: 10%
Description: The external funding may be insufficient or not be granted.		
Justification: The project will be funded by the government and potential business sponsors, thus there is a lot of uncertainty of the funding sources. If the actual funding is lower than the planned budget, the progress of the whole project can be impacted as members may leave the team for insufficient salaries, some modules have to be cut. In turn, the impact can further reduce the funding as sponsors can't see the future of the project. Therefore, it is a critical generic risk.		
Impact: 5	Owner: Sally and Anna	Response Type: Mitigate
Response: It would be great if Sally and Anna can spend more effort on seeking business sponsors. Redundant funding is better than insufficient funding.		
Trigger:		Resource required:
The actual funding amount is lower than the estimated budget.		Sally and Anna's time

5.5 Technology

In this project, the expected software product is a mobile or a web application. Our team has decided to build a website for the business owner's Sally and Anna. A web app/website needs a user interface, a backend programming language for implementing logic and a database for storing the website content. There are many different ways in which a website can be built. They include using frameworks such as PHP, React, Angular and languages such as Javascript, Html, CSS, Bootstrap. If any of the individuals in the team doesn't have the skills of coding then there are other ways to develop a website using Wix, Wordpress, Adobe Dreamweaver. They work on the principle of drag and drop with not a single line of code required to be written. Instead they use templates for implementing web pages. We came to a conclusion that the software tool which we would be using for developing our system would be Wix. It is one of the best tools providing cloud based web development services. It is based on the concept of templates with drag and drop method and thus no programming needed. As the current members in our team didn't have any prior experience with any of the web development languages, the team has concluded to further evaluate the other suitable options: Wix and Wordpress.

Wix provides the users to choose from around 900+ templates. Design implementation of wix is fully responsive and written in HTML5. It comes with very efficient and easy tools for users to build their website. It is very useful for beginners who don't have hands-on experience in coding. Wix consists of some built-in tools which help further with designing the website, layout changes, rearranging items according to the size. Templates are categorized into ecommerce, business, personal, travel and tourism, arts and crafts. It has nearly 200+ inbuilt applications which can be added to the website. These applications provide various features such as gallery, comments, social media buttons, marketing and many more. Many of these applications are either free or have a lite version. They cover almost all the common requested features by the website owners.

Wordpress is also considered as a potential choice in website development. Wordpress uses PHP paired with MySql/Maria database for development of the web content. It has a very powerful block editor which allows users to edit their pages with a live preview. Stunning layouts can be created by addition of blocks. The blocks are present for all elements like text, background, headings, images, buttons, etc. Wordpress also provides a lot of website template themes to add into the website. They can be customized using the live theme customizer. For a code-free website, it has some drag and drop page builder plugins. These drag and drop editors help in creating good looking professional websites. Furthermore, it has a range of themes from small personal websites to large ecommerce ones. Most of these come with inbuilt customization options. Many other style plugins are available for giving the best touch to wordpress themes. There is even a facility of hiring a developer for building a professional website. Plugins like SeedProd help to quickly deploy a website using the theme of our own interest. Wordpress

comes with around more than 58000+ free plugins available in the plugins directory. A plugin can be very useful for building any type of website, contact form, online sources selling, etc.

If we compare Wix and Wordpress, Wordpress is far better as a web publishing platform for any kind of website. Though wix offers an easy to use website builder, we can make much more over Wordpress over a long time period. Wix has free plans but we need to use their brand domain name and advertisements. Thus, taking all the above factors into consideration, we chose Wordpress for the development part.

6. Project Planning

6.1 Project Outline

In planning of the project, user stories are created and tagged the necessary story points required so as to be able to estimate the required time to finish the project. The story points are ranked from 1 to 10, with the appropriate hours listed in the table 6.1.1 below.

Story points	1	2	3	4	5	6	7	8	9	10
Hours	1	2	4	6	8	10	12	14	16	18

Table 6.1.1 – Story points and hours allocated

Below are the listed Epic Stories, User type, User Stories, hours and story points that are required for the development of the website for A Travelling Technology Bus.

Epic	Story Details
Registration	Contains the creation of user profile for the customer
Login	Page to login for admin and user
Landing page	Home page where the user and admin can access all the features of the page, which includes Interest, Schedule, Confirming, Cancellation
Profile Details	Page to edit existing details, emails, password
Interest	Page to express interest in the Bus appointment
Schedule	Page to access information on the scheduling for bus visit
Confirming	Page to confirm the information for the bus visit
Cancellation	Page with information on cancelling the bus visit

Table 6.1.2 – A Travelling Technology Bus Epic Stories

Epic	User	User Story	Hours	Story Points
Registration	Admin	作为一个管理员，我不需要创建一个帐户，但需要一个电子邮件地址和密码登录。需要预先创建一个admin帐户。	8	5
	Customer	作为一个客户，当我进入注册页面时，我可以将我的学校信息注册为一个账户。	12	7
Login	Admin	As an Admin, at the Login Page, I want to be able to login into the system with my email address and password.	8	5
	Customer	As a Customer, at the Login Page, I want to be able to login into the system with my email address and password.	8	5
Landing Page	Admin	As an Admin, at the Landing Page, I want to be able to see all the admin available links and features available.	6	4
	Customer	As a Customer, at the Landing Page, I want to be able to see all the customer available links and features available.	6	4
Profile Details	Admin	As an Admin, at the Profile Page, I want to be able to change password if required.	6	4
	Customer	As a Customer, at the Profile Page, I want to be able to change my personal/school details if required.	6	4
Expression of Interest	Admin	As an Admin, at the Interest Page, I want to be able to view the list of all expression of interest from schools.	12	7
	Customer	As a Customer, at the Interest Page, I want to be able to register the expression of interest.	14	8
Rostrering	Admin	As an Admin, at the Schedule Page, I want to be able to schedule the time window.	12	7
	Customer	As a Customer, I should receive an email when the Admin has scheduled a time window.	8	5
Confirming	Admin	As an Admin, I should receive a notification for the confirmation of the time by the Customer.	12	7
	Customer	As a Customer, at the Confirmation Page, I want to be able to choose and confirm the time for the bus visit	16	9
Cancellation	Admin	As an Admin, I should receive an email when the Customer cancels a scheduled visit.	6	4
	Customer	As a Customer, at the Cancellation Page, I want to be able to cancel a scheduled visit.	8	5

Table 6.1.3 – A Travelling Bus User Stories Breakdown

In accordance with the user stories in table 6.1.3, an appropriate Sprint Plan is required to be created with consideration of the available time that the participating team members can contribute. As the team members are students of University of Melbourne, with consideration of other day-to-day activities in their schedule, it is estimated that each student will be able to allocate a minimum 2 hours of their time to be set aside for the development of the website in this project.

In consideration that each team member can work for 2 hours per working day, with 5 working days per week, with a team size of 5, this means that there is a total of 50 hours per week that the team is available to work on the project, an estimated 30 story points per week. The allocated start date would be on September 27, up till October 17.

The project would last in total for 3 weeks, with a total of 3 sprints, one for each week. As the sprints allocated in this project will be of cadence of a duration of 1 week per sprint, the team is able to complete a maximum of 50 hours during each sprint. With the 4 sprints taken into consideration, the Epic stories are split in accordance below:

Sprint Count	Epic Stories	Total Hours	Total Story Points
Sprint 1	Registration, Login, Landing Page	48	30
Sprint 2	Profile Details, Expression of Interest, Rostering(Admin)	50	30
Sprint 3	Rostering(Customer), Confirming,Cancellation	50	30

Table 6.1.4 – Project sprints details

With each sprint, a burndown chart is created, so as to ensure that the team is on track throughout the duration of the project. Figure 6.1.5 to 6.1.7 shows the burndown chart for each week, with the story points planned per day and the estimated required to be done on a daily basis.

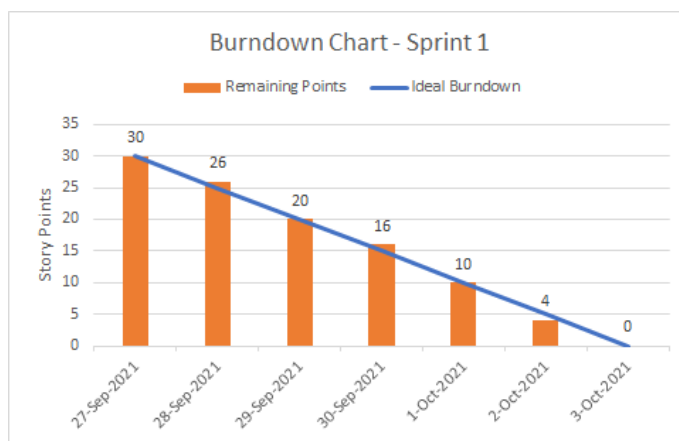


Figure 6.1.5 - Burndown Chart Sprint 1

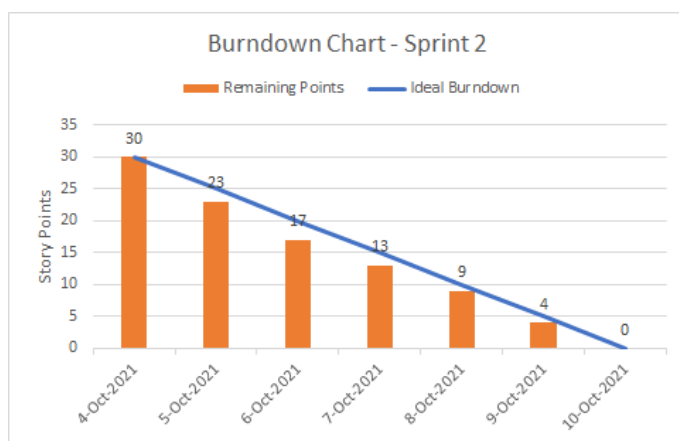


Figure 6.1.6 - Burndown Chart Sprint 2

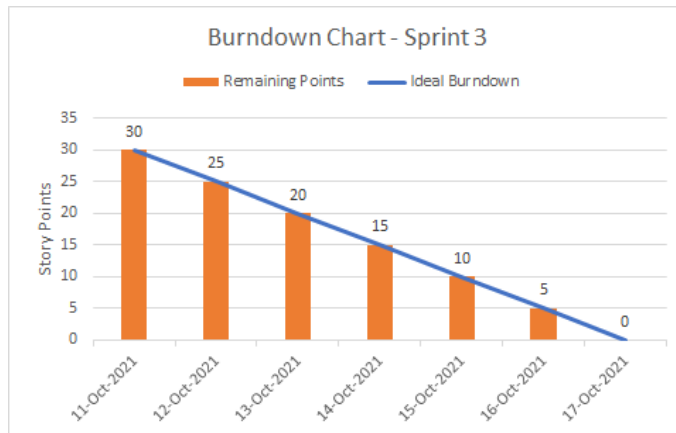


Figure 6.1.7 - Burndown Chart Sprint 3

The project is further implemented into a Trello board, categorising them into the 3 Sprints, and the necessary lists required to keep track of progress: To-Do, Doing, Testing, Done. Each card in the list represents the necessary User Stories required for the project. The Trello board is located at this [link](#).

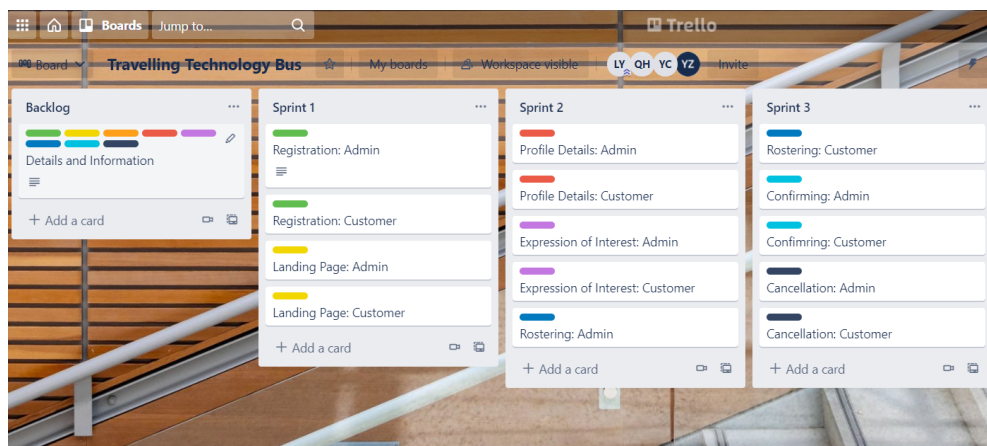


Figure 6.1.8 - Trello board detailing sprints and user stories

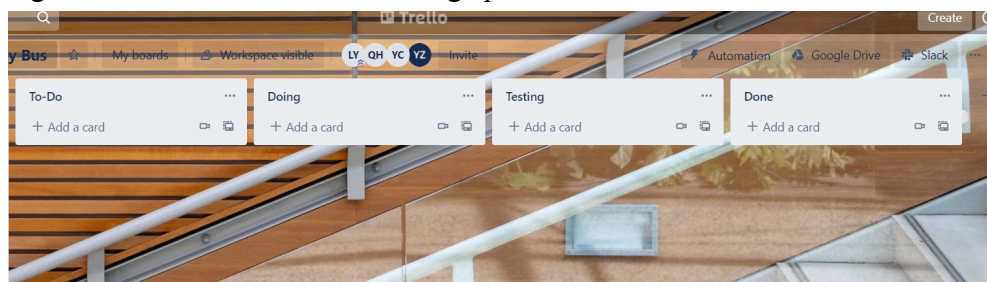


Figure 6.1.9 - Trello board detailing the progress lists

6.2 Group Planning

In preparation for the project, there is a need to outline a basic few guidelines for the team to adhere to: Participation, Code of conduct, meeting guidelines.

Participation:

- All members are expected to turn up for the daily group meeting at the expected time set based on the previous meeting.
- At each daily group meeting, each member must discuss and show their progress.

Code of conduct:

- If the member is absent due to valid reason, he/she has the sole responsibility of getting the timing for the next meeting.
- No progress in a group meeting will not be tolerated unless with valid reason.
- All work must adhere to the deadline and timeline set. Any discrepancy must have a valid reason.
- A reason is only “valid” only when the team has voted and agreed upon unanimously.

Meeting Guidelines:

- Group meetings will occur daily at 18:00 AEST (Australian Eastern Standard Time)
- Rescheduling may occur but must be agreed and discussed as a team

A team contract has been drafted, approved, signed and agreed upon by all team members to adhere and follow during the duration of this project. The contract link can be found [here](#).

Team Contract for SWEN900016 Assignment 2

Project Name: Travelling Technology Bus Schedule System

Project Team Members' Names and Signatures:

Name	Student ID	Signature	Date
Zhanzhao Yang	1219934	<i>Zhanzhao Yang</i>	13/9/2021
Yateen Chiplunkar	1200013	<i>Yateen</i>	13/9/2021
Qitong He	1190929	<i>Qitong He</i>	13/9/2021
Lee Guo Yi	893164	<i>Lee Guo Yi</i>	13/9/2021
Yuqing Zhou	1140794	<i>Yuqing Zhou</i>	13/9/2021

The goal of this document is to clearly outline the group's rules and regulations, expectations and required dedication to be part of the team and project.

Participation:

- All members is expected to turn up for the daily group meeting at the expected time set based on the previous meeting.
- At each daily group meeting, each member must discuss and show their progress.

Code of conduct:

- If the member is absence due to valid reason, he/she has the sole responsibility of getting the timing for the next meeting.
- No progress in a group meeting will not be tolerated unless with valid reason.
- All work must adhere the deadline and timeline set. Any discrepancy must have a valid reason.
- A reason is only "valid" only when the team have voted and agreed upon unanimously.

Meeting Guidelines:

- Group meetings will occur daily at 18:00 AEST (Australian Eastern Standard Time)
- Rescheduling may occur but must be agreed and discussed as a team

This contract is in effect until 3rd October 2021, or until the project has been completed.

Figure 6.1.10 - Snapshot of team contract

Reference List

- [1]R. Singh, "Agile methodology: advantages and disadvantages", *appvizer.co.uk*, 2020. [Online]. Available:<https://www.appvizer.co.uk/magazine/operations/project-management/advantages-of-agile-methodology>.
- [2]R. Shankarmani, R. Pawar, S. S. Mantha and V. Babu, "Agile Methodology Adoption: Benefits and Constraints", *International Journal of Computer Applications*, vol. 58, no. 15, pp. 31-37, 2012. Available: 10.5120/9361-3698.
- [3]R. Kumar, A. Gupta and H. Singh, "Agile Methodologies: Working Mechanism with Pros and Cons", *GLAN JYOTI E-JOURNAL*, vol. 4, no. 2, 2014.
- [4]R. Sherman, "Project Management", *Business Intelligence Guidebook*, pp. 449-492, 2015. Available: 10.1016/b978-0-12-411461-6.00018-6.

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Zhanzhao Yang	zhanzhaoy@student.unimelb.edu.au	1219934

Action Items:

- 1) Executive summary - Yateen
- 2) Table of contents - to be discussed
- 3) Introduction - Yateen
- 4) Project information - Qitong, Yuqing
 - a) Key stakeholders
 - b) What is in-scope?
 - c) What is out-of-scope?
 - d) Delivery approach / SDLC - Formal or Agile
 - e) Business Value (Financial & Non-Financial Benefits)
 - f) Constraints
- 5) Project Governance
 - a) Roles and Responsibilities - Yang
 - b) Communication Plan - Yang
 - c) Risk Management -specific risks - Yang
 - d) Risk Management -generic risks - Yang, Qitong
 - e) Technology - Yateen
- 6) Project Planning
 - a) Project planning - Guo Yi
 - b) Group planning - Guo Yi