UNIVERSITY OF MELBOURNE

SOFTWARE PROCESSES AND MANAGEMENT

SWEN 90016

Project Management Plan

for

Shipping Management System

Prepared by Team CSR_04_5

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Executive Summary

This project aims to develop a web-based shipping management system for our client Susanto.

Susanto used to work in the cargo shipping business from Melbourne to Jakarta, Indonesia for years and has been seeking to change the practice of the business by introducing a dynamic, efficient and more user-friendly shipping service. This project will deliver the software platform for his new company.

A small team named CSR_04_5 consisting of postgraduate students from the subject SWEN90016 at University of Melbourne will be responsible for evaluating, planning and implementing the project. The roles and members in the team are shown below.

Linrong Chen	Full-stack Developer & Scrum Master
Boheng Luan	Back-end Developer & Product Owner
Ruihan Zhang	Front-end Developer & Quality Assurance
Zeyu Huang	Front-end Developer & Risk Manager

Table 1: Members and Roles

As this is an experimental product in the market with constraints in time and budget, the Agile framework will be followed as the Software Development Life Cycle (SDLC) to ensure flexibility and productivity.

All members of the implementing team are not paid for the project. The financial cost of the project can thus be ignored.

The desired outcome of the project is a web-based system facilitating door-to-door shipment service. Users of the system, as Shipper, Collector or Customer, should be able to initiate, monitor, modify and/or be notified of shipping orders from Melbourne to Jakarta, Indonesia. Shipping booking information such as size, destination and cost can be stored and viewed on the system.

Benefits of the project are multifold. The desired product will help boost the efficiency and customer satisfaction of logistics service that ships cargo from Melbourne to Jakarta. It will also build a solid competitive edge for Susanto's start-up company against traditional shipping companies and bring potential profit to the company.

Through the project, members of team CSR_04_5 will gain experience in project management within Agile framework and develop skills in implementation of a web-based system.

The project schedule will be consistent with the curriculum plan of the subject. The team will implement the project through multiple Agile sprints in roughly 6-8 weeks. The project will be finalised by week 11 of the semester (14 Oct 2018).

Contents

1 Introduction

There is a big Indonesian community in Melbourne, and they provide a lot of demand in sending gift boxes back to Indonesia. Project sponsor Susanto is committed to providing better logistics services to the Indonesian community in Melbourne via information technology. This project aims to develop a website-based system for Susanto's logistics companies to facilitate users to obtain information, including shipping schedule, price information and so on. Users can also fill in/modify/query their orders information on the website, and the system will notify the sender and recipient by automatic mail whenever the order information changes.

1.1 Purpose of Document

The purpose of this document is to provide a complete project management plan for this development project. This document will not only guide the development process, but also document progress of the project.

In the following chapters, we will discuss in detail the key Stakeholders of the project, the scope of the project, the reasons for choosing Agile as the SDLC, and the business value and constraints of the project. We also documented the roles and responsibilities of each member in the first release, as well as the communication plan, the initial technical framework, risk management and project plan.

1.2 Audience of Document

This document is oriented to external stakeholders, the project managers and the developers of this project.

1.3 Limitations of Document

Since the project is still in the initial planning stage of development, the technical framework and system features described in the first version of the plan document is determined by preliminary discussions, which may be changed with the project progresses and further communications with stakeholders and mentors. Similarly, since it's a planning phase, this document doesn't cover specific Project Execution, Monitoring and Control.

1.4 Evolution of Document

version	created by	date created	location	comments
1.0	all members	14 Sept 2018	unimelb ERC	initial version of project management plan including sections 1 to 3

Table 2: Evolution of Document

2 Project Information

2.1 Key Stakeholders

The key stakeholders of this project are identified as below.

Name	Position	Project Role	In/External	Contact Information
Susanto	Initiator	Client, Sponsor, Shipper	External	
Susanto's brother-in-law	Truck Fleet Owner	Collector	External	
Linrong Chen	Postgraduate student	Full-stack Developer & Scrum Master	Internal	linrongc@student. unimelb.edu.au
Boheng Luan	Postgraduate student	Back-end Developer & Product Owner	Internal	bluan@student. unimelb.edu.au
Ruihan Zhang	Postgraduate student	Front-end Developer & Quality Assurance	Internal	ruihanz@student. unimelb.edu.au
Zeyu Huang	Postgraduate student	Front-end Developer & Risk Manager	Internal	zeyuh3@student. unimelb.edu.au
Professor Shanika Karunasekera	Subject Co-ordinator	Management Consultant	External	karus@unimelb. edu.au

Table 3: Key Stakeholder Declaration

2.2 Scope

2.2.1 What is in-scope?

The project is to develop a web-based platform for door-to-door shipment management which should be dynamic, efficient and user-friendly. The scope for this project can be classified as below.

User registration and login

- **Shipper**: A Shipper should have a pre-defined email username with a default password for login. A Shipper should be permitted to perform Shipper specific functions.

- **Collector**: A Collector should have a pre-defined email username with a default password for login.

- **Customer**: A customer should be able to register with their personal information including name, home address, contact phone number, email address and initial password. A customer can login with their email address and password.

Personal_Information The personal information of customers should be maintained as profiles of users and can be updated by customers.

Shipping_Booking system

- ***Requests***: Logged in customers should be able to make ***Shipping_Booking: Requests***, which specify size, destination, pick-up address, preferred departure and arrival dates and (optional) message to the shipper.

- ***Acks***: A shipper can respond to a ***Shipping_Booking:Request*** with ***Acks***, which must specify status, pick-up date and time, cost, HBL number and (optional) message to the customer.

- **Viewing**: Logged in customers can *view* the status and all associated data of a ***Shipping_Booking*** that they created earlier.

- **Modifying**: The Shipper can *modify* a ***Shipping_Booking:Ack*** with permitted status but cannot change the cost.

Notification The customer and the collector should get email notifications of modification to the Shipping_Bookings with all the information.

Shipment_Information The shipment information should be selected from a list of dates with at least three date set options customizable to the users.

Persistent Storage The customer information and Shipping_Booking details should be persistent in the system.

2.2.2 What is out-of-scope?

The following features are out of the scope of the project.

- Integrated payment system

- Multi-Collector or Multi-Shipper support

2.3 Delivery Approach

We prefer Agile SDLC for this project based on the following considerations.

- **Flexibility** The desired product is innovative and adapts to a boosting business which can be volatile in style and paradigm. Thus, the Agile framework is suitable for this project where user requirements are not fully defined and functionality are up to change.

- **Reduced Cost** As we will discuss in Section 5.5, this project has very limited budget and available staff (labour). Using Agile frameworks can reduce the cost of the project by having cross-functional teams and improved productivity.

- **User Experience** One of the competitive edge of the desired product is enhanced user experience and efficiency. By adopting Agile, the development team is client-facing and can improve user satisfaction through communication and collaboration.

Stakeholder	Financial Benefits	Non-Financial Benefits
Client/Sponsor	Profit	Delivering a dream product
Shipper	Profit	Expanded business types and improved communication & scheduling efficiency
Collector	Profit	Expanded business types
Product Owner	None	Product management skills
Scrum Master	None	Agile development skills
Developers	None	Front-end / Back-end development skills
Risk Manager	None	Risk management skills
Quality Assurance	None	Quality assurance experience
Customers	Reduced cost	Improved service

Table 4: Business value distribution

2.4 Business Value

Table 4: Business value distribution shows the business value distribution among stakeholders.

The project improves efficiency and experience of both clients and services. By providing a platform for request passing, order management and message sharing, it enables customers and shippers to communicate and negotiate over the order in a smooth and timely fashion. It can also be a workplace for the shipper and the collector to organise and schedule requests they have to fulfil.

Because this IT project is such a fundamental part for building a dynamic and user-friendly shipment management system, it will also influence the box shipping market in Melbourne by introducing a new end-to-end service model and benefit a broader range of users.

2.5 Constraints

The main constraints of the project is time, budget, labour, and management skills. There are also additional constraints like technology stack.

- **Time** The project has to be delivered in roughly eight weeks, which is about 4-8 sprints in an Agile SDLC. Within such a short time, it is critical to schedule the project properly so that user stories are released in time.

- **Budget** The initiator and sponsor of this project, Susanto has very limited capital to start his business. Additional cost in developing is not allowed.

- **Labour** The Collector (Susanto's brother-in-law) in this project works part-time because he runs a Truck Fleet with regular business in furniture delivery. The developing team are master students. These labour can only dedicate limited time to this project compared to full-time staff.

- **Management skills** Although Susanto is familiar with box shipping business, he has no experience with software development management. Neither are the scrum

team members knowledgeable in managing SDLCs.

- **Technology stack** The development team have some experience with Java and Python programming. But none of them is familiar with front-end frameworks and techniques.

3 Project Governance

3.1 Roles and Responsibilities

We use Agile as our project management framework, which enables us to have a small cross-functional scrum team with members taking on multiple roles.

There will have a Scrum Master, a Product Owner, one Full-stack Developer, one Back-end Developer, two Front-end developers, one Quality Assurance and one Risk Manager. Since our team consists of only four members. Each member will take on management roles in addition to their development role.

The roles and responsibilities in this project are listed as follows:

- **Product Owner**
  One of our team members will take this role. He will in charge of communications with Susanto to define features of the software and decide detailed schedule of the team as a product owner.

- **Scrum Master**
  For the team member who take the role of scrum master, he will in charge of all management decision in the team, to make team fully functional and productive.

- **Front end programmer**
  They take charge of all front end including web design and request design. Since all of the team members are not familiar with this part, three of us will take this role.

- **Back end programmer**
  They take charge of all back end including building server environment and inner logic of the service. 1-2 team members will take this role.

- **Risk manager**
  There are many possible risks for this project. The team member who take the role of risk manager should try to avoid the occurrence of these risks.

- **Quality assurance**
  When some pieces of codes have been done, team member with the role of quality assurance will check the program to achieve higher quality.

3.2 Communication Plan

Since we are in an Agile framework, communication is critical to the productivity of development and quality of the product. We will be utilising both formal and informal communication channels to maximise message sharing and collaboration within the team.

3.2.1 Communication Channels

The formal and informal communication channels for the project are described as below.

- **Formal: face to face meetings**
  For every sprint, we will set 1-2 face to face meetings at school. All of us should attend this meeting and we will choose an appropriate time for all of us. Sprint plan will be discussed in the meeting.

- **Formal: emails**
  Communication between clients and develop team will through emails. It is official and convenient. When needed, we can access the email box and check from records easily.

- **Informal: online communication**
  We will use messaging app for online communications. All of us are in a chatting group and able to chat with each other conveniently. Also, history of our communication will be saved.

3.2.2 Communication Matrix

To enhance communication within the project so that features are delivered in a timely manner, we have drafted the following Communication Matrix.

Communication Type	Purpose	Frequency	Owner	Distribution	Outcome
Ice-breaking meeting	Introducing team members; Introducing the project	One Time	Product Owner	Product Owner, Scrum Master, Developers, Quality Assurance, Risk Manager	Agenda, Initial product backlog
Sprint planning	Discussing how to achieve sprint goal	Before each sprint	Product Owner	Product Owner, Scrum Master, Scrum team	Sprint backlog
Daily stand-up	Daily updates of each member to avoid other unnecessary meetings	Daily	Scrum Master	Product Owner, Scrum Master, Scrum team	Updates to sprint backlog
Sprint retrospective	Reviewing what is and what is not working	After each sprint	Scrum Master	Scrum Master, Scrum team	Updates to product backlog

Table 5: Communication Matrix

3.3 Risk Management

Risks are listed in table 6.

risk ID	Risk Type	Description	Probability	Impact	Justification
1	Project	Budget	high	low	No funding supply, using free nectar platform for implementation and test
2	Project	Schedule	median	median	Time is quite limited for such a project, especially some assignments of other subject exists
3	Project	Personal	median	low	Team members have different subjects and assignment deadlines as personal events
4	Product	Implementation problem	high	low	None of us has front end skills
5	Product	Maintenance problem	median	high	Nectar can not be used for business, it should be transformed to other platforms when we finished the subject. No maintenance supply at that time
6	Business	No demand for product	low	high	Other companies with same service may appear before the service starts.
7	Business	loss of external funding for the project	high	median	Due to the scale of the company, it may have financial difficulty

Table 6: Risk Impact Analysis Table

3.4 Technology

- **Front-end**
  The front-end website would be built with Wix. Since every team member does not have much knowledge of front-end developing, we choose to use tools like Wix that is able to do layout without using HTML/CSS.

- **Back-end**
  The server is going to be implemented with Java programming language. Java is the most popular server side language and each team member is familiar with Java programming.

- **Database**
  We will use MongoDB to store persistent data. We can store data in JSON format with MongoDB which is flexible for potential changes. In addition, MongoDB can be easily scaled at need to ensure data security or availability if business grows fast.

- **Others**
  We are going to use cloud computing resources to host server. Specifically, we will use virtual machines on Nectar Research Cloud. We will use Docker to deploy database services since it is easy and reliable.

3.5   Project Planning

User Stories:

1. As a *shipper*, I can acknowledge and modify shipping booking orders so that I can pick up orders from customers and ship them. - 3 story points

2. As a *collector*, I need to view shipping status and get notified so that I can arrange delivery. - 2 story points

3. As a *customer*, I can sign up so that I can use the service. - 1 story point

4. As a *customer*, I can log in so that I can place orders and view order status. - 2 story point

5. As a *customer*, I need to provide the shipping details so that the order can get to intended destination. - 4 story points

6. As a *collector* or *customer*, I want to be informed whenever shipping status changes so that I can get updated with orders. - 1 story point

In the first sprint, we intend to complete user story 3 and 4. Since we need to configure environment and set up server first, the work load is high than story points indicates.

User story 3 - customer sign up					
tasks	Mon	Tue	Wed	Thur	Fri
configure virtual machine	1				
set up database	1				
set up back-end server		1	3	1	
build front-end interface		2		2	1
define communication protocol			1		
define user account storage schema			1		
testing		1		1	1

User story 4 - user log in					
tasks	Mon	Tue	Wed	Thur	Fri
set up account for shipper and collector		1			
build front-end interface	1		2	1	
define back-end function	1		2		
testing				1	1