The University of Melbourne
School of Computing and Information Systems
SWEN90016 Software Processes and Management
Semester 2 – 2018

Assignment Two

Learning Outcomes:

The students will demonstrate the ability to:

- Choose an appropriate Software Development Lifecycle (SDLC) model for a given project brief, plan the activities involved in the chosen model and develop a Project Management Plan (PMP)
- Execute, monitor and control processes to achieve a desired outcome
- Work effectively in a team

Note: Each member is expected to spend 30-40 hours on this assignment as per handbook

What your team is expected to do:

Your team is required to:

1. Develop a prototype (working software which includes a web user interface and persistent data storage) of the software system described in the case study in Appendix B.

2. Develop a Project Management Plan (template provided in Appendix A), that demonstrates that you have planned the activities required to develop the software system in item 1.

3. Demonstrate the you have executed, monitored and controlled your plan; you must document progress in the relevant sections of the PMP as per specification.

   Note: You may choose any type of SDLC (Formal, Agile or a combination of the two); your PMP must justify why you chose the SDLC.

Important Notes:

- Your team may use any language/technology/framework to develop the web-based system; you can choose a simple web development platforms such as Wix (https://www.wix.com/about/us), WordPress (https://wordpress.com/create-website/) or more a complex web development framework which requires full-stack development.
- The team (not a single member) must research available frameworks and decide on the framework the team is going to use, before the first submission in week 8. The rational for the choice of the framework must be documented in Section 6.4 of the PMP. If the team has

problems choosing a framework (or reaching consensus within the team) before the first submission, please send an email to your tutor (email addresses are available on LMS) with a copy to the subject coordinator (karus@unimelb.edu.au).

- When choosing the framework please consider the programming skills of the team and the learning outcomes your team wants to get from this project – for example, your team may choose a complex web development framework, which requires technical development skills (which may require you to spend extra time on it), if your team believes that this knowledge is useful for you in the future, hence worth spending the effort although the marks may not justify the time you spend.
- Please remember that the final product is only worth 10%; 90% of the marks will be for how well you plan, manage and execute the process.

Key Deliverables and Marks:

ID	Artefact	Submission	Date	Marks
1	Project Management Plan (PMP) Version 1.0 Sections 1-6 completed	LMS – team submission	Saturday 15th September 11.59 pm (week 8)	9
2	Project Management Plan (PMP) Version 1.1 Updates to the PMP as needed. Include Section 7.1 (The version history must show what you changed and why)	LMS – team submission	Saturday 29th September 11.59 pm (non-teaching week)	6
3	Project Management Plan (PMP) Version 1.2 Updates to the PMP as needed. Include Section 7.2 (The version history should show what you changed and why)	LMS – team submission	Saturday 6th October 11.59 pm (week 10)	6
4	Project Management Plan (PMP) Version 1.3 Updates to the PMP as needed. Include Section 7.3 (The version history should show what you changed and why)	LMS – team submission	Saturday 13th October 11.59 pm (week 11)	6
5	Individual Reflection (Optional) - Use the Peer Assessment form in Appendix C to assess your team member's contribution. Reflect on the contribution by you and your team members (500 words approximately). - If the reflection flags non-contributing members, staff has the discretion to award a reduced mark to such members.	LMS – individual submission as a single report	Sunday 14th October 11.59 pm (week 11)	0
6	Final Product – Software System	Demonstrate to the tutor	Week 12 workshop	3

Note: Although submissions 2 and 3 carry marks and must be submitted via LMS in non-teaching week and 10 week respectively as evidence of process adherence and progress, they will only be marked after the final submission in week 11.

Submission and Feedback

- Your tutor will create a group for your team on LMS
- All submissions and feedback will be via LMS

Penalty for Late Submission

Late submissions without an approved extension will be subject to a penalty of **10% per day**. No assignment will be accepted more than one week late.

Warning about plagiarism

It is University policy that cheating by students in any form is not permitted, and that work submitted for assessment purposes must be the independent work of the student concerned (or, where joint work is permitted, of the students concerned). The University Policy and Procedures for Academic Misconduct can be found at: https://academichonesty.unimelb.edu.au/#policy. Plagiarism, or copying of another's work without proper acknowledgment, is not permitted. Nor is it permissible for anyone to allow another person to copy their work for the purposes of assessment. Assignment Aims To evaluate a case study from a risk management perspective.

Team Dispute Resolution

You are expected to resolve disputes within your team as a standard component of team communication. If unresolved concerns over the level of contribution from each team member occur, you should alert your tutor early and submit an individual reflection to flag this. Team marks may be reduced for non-contributing team members.

Appendix A – PMP Template

1. Title Page

2. Executive Summary

<Give your stakeholders a concise preview of the project's plan, purpose and approach. Consolidate the main points of the document to explain why the project is being undertaken, who will be responsible for implementing it, how much it is likely to cost, the desired outcomes and benefits it is likely to produce, and how long it will take to complete. An executive summary should be organised according to the sequence of information presented in the document. Use plain English and ensure all acronyms are fully expanded out the first time they are used. Keep the executive summary as succinct as possible and contained to a single page.>

3. Table of Contents

4. Introduction

4.1 Purpose of document

4.2 Audience of document

4.3 Limitations of document

4.4 Evolution of document

Version	Created by	Date created	Location	Comments
		Click here to enter a date.		

5 Project Information

5.1 Key Stakeholders

<From the project brief identify the key stakeholders for the project>

5.2 Scope

5.2.1 What is in-scope?

<Detail the scope of the project. The execution of the entire project starts with a clear and complete scope definition. Every other element of project planning will relate to scope and to the deliverables listed below. Clearly state what requirements your team is planning to deliver in the project.>

5.2.2 What is out-of-scope?

<It's equally important to list what the project team isn't responsible for delivering. This section provides the project team with the opportunity to clearly indicate what is not in scope of the project where there may be any doubt or confusion.>

5.3 Delivery approach / SDLC - Formal or Agile

☐ Formal ☐ Agile ☐ Hybrid

<Provide a justification as to why the chosen lifecycle is suitable for the case study.>

5.4 Business Value (Financial & Non-Financial Benefits)

<Provide a qualitative description of the business value for all the stakeholders, (quantitative dollar amounts not expected). Discuss how your IT project adds value and why it should be done.>

5.5 Constraints

<State any constraint you can identify, if there exists any.>

6 Project Governance

6.1 Roles and Responsibilities

<Identify the roles and responsibilities of the team. Example project roles:
waterfall: Business Owner / Senior User / Project Manager/Technical Subject Matter Expert
agile: Scrum Master / Product Owner / Dev Team Members / Subject Matter Expert>

6.2 Communication Plan

< Include a communication plan for your team, i.e. how your team plans to communicate within the team during this project.>

6.3 Risk Management

<Show up to 10 key risks in the Risk Impact Analysis Table; ordered from highest to lowest priority.>

Risk ID	Risk Type (Business/Project/Product)	Description	Probability	Impact	Justification *< why your team chose this as a key risk>*

<Show the Risk Register for the risks that are in the control of the team.>

Risk ID	Trigger	Owner	Response	Resources Required

6.4 Technology

< Summarise your research into the language/technology/framework for the software product, and state what language/technology/framework your team has chosen to use with a justification for the choice.>

6.5 Project Planning

< If you chose a formal SDLC provide a Project Schedule for the chosen SDLC which shows the work break down structure, dependencies, resources required, a project timeline on a Gantt chart, including weekly milestones for at least weeks 9, 10 and 11.

If you chose an agile SDLC, provide a Sprint Plan for the first sprint, by choosing the appropriate feature-level stories, and breaking them into appropriate tasks estimated in hours. >

7 Project Execution, Monitoring and Control

7.1 Project Status: Friday non-teaching week

< Write a summary of your project status, and how you are tracking with respect to milestones and deliverables, as if the project manager was reporting to the stakeholders.>

7.1.1 Process Related Artefacts

*< Include all process related artefacts relevant to your process. e.g. agendas, minutes, a timesheet per member (**timesheet per member is required regardless of the chosen lifecycle**), progress Gantt charts, updated schedules, sprint planning meeting outcomes, sprint review inputs and outcomes, velocity estimations, burndown charts, low level task decompositions, images of Kanban boards, and any other process related artefacts that will demonstrate to your markers how well you were executing and managing the process (you may include them in an Appendix with a reference from this section to improve readability of the document).>*

7.1.2 Product Related Artefacts

< Include all products related artefacts such as requirements, use cases, user stories, designs, completed features lists, screen shots to show the status of the product and any other product related artefacts that we will demonstrate to your markers how well you were progressing towards achieving the milestones you planned (you may include them in an Appendix with a reference from this section to improve readability of the document).>

<All other artefacts that show progress but cannot be included in the report, including code written by your team (if applicable), must be submitted as a .zip file through an submission link we provide for this purpose>

7.1.3 Risk Monitoring and Control

< Write a brief update on the risk status:

- *Did any of the risks originally identified occur?*
- *If the risks occurred did you mitigate the as planned?*
- *Did you identify new risks?*

>

7.2 Project Status: Friday week 10

< Write a summary of your project status, and how you are tracking with respect to milestones and deliverables, as if the project manager was reporting to the stakeholders.>

7.2.1 Process Related Artefacts

*< Include all process related artefacts relevant to your process. e.g. agendas, minutes, a timesheet per member (**timesheet per member is required regardless of the chosen lifecycle**), progress Gantt charts, updated schedules, sprint planning meeting outcomes, sprint review inputs and outcomes, velocity estimations, burndown charts, low level task decompositions, images of Kanban boards, and any other process related artefacts that will demonstrate to your markers how well you were executing and managing the process (you may include them in an Appendix with a reference from this section to improve readability of the document).>*

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<All other artefacts that show progress but cannot be included in the report, including code written by your team (if applicable), must be submitted as a .zip file through an submission link we provide for this purpose>

7.2.3 Risk Monitoring and Control

< Write a brief update on the risk status:

- *Did any of the risks originally identified occur?*
- *If the risks occurred did you mitigate the as planned?*
- *Did you identify new risks?*

>

7.3 Project Status: Friday week 11

< Write a summary of your project status, and how you are tracking with respect to milestones and deliverables, as if the project manager was reporting to the stakeholders.>

7.3.1 Process Related Artefacts

*< Include all process related artefacts relevant to your process. e.g. agendas, minutes, a timesheet per member (**timesheet per member is required regardless of the chosen lifecycle**), progress Gantt charts, updated schedules, sprint planning meeting outcomes, sprint review inputs and outcomes, velocity estimations, burndown charts, low level task decompositions, images of Kanban boards, and any other process related artefacts that will demonstrate to your markers how well you were executing and managing the process (you may include them in an Appendix with a reference from this section to improve readability of the document).>*

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- *If the risks occurred did you mitigate the as planned?*
- *Did you identify new risks?*

>

Appendix B – Case Study[1]

Background

Susanto is an employee of a small company in Melbourne that ships cargo boxes from Melbourne to Jakarta, Indonesia. The company, owned by an Indonesian immigrant, has been operating for over forty years and is one of a handful of similar companies in Melbourne exclusively dealing with shipping small quantities of boxes to Indonesia. Each company receives boxes dropped at its warehouse by the customers and load them into containers and ship them to their Jakarta warehouse. Recipients then come and collect the boxes.

Susanto has been employed by the company for nearly six years, starting work there soon after he moved to Melbourne from Jakarta to study Commerce and Business Management at the University of Melbourne. At first, he worked as a casual labourer, picking up boxes brought in by customers and moving them to designated storage areas in the warehouse. Later, after he obtained his truck and forklift operating licences, he worked part time loading containers onto trucks and delivering them to the port. Since graduating from University, he was hired as a full-time employee in the warehouse office where he gained hands on experience in booking and scheduling container shipments, dealing with customs clearance issues in Jakarta, dealing with customers, and recordkeeping.

Because there is a large Indonesian community in Melbourne and many of them ship gift boxes to family back in Indonesia, business is booming for the small number of box shipping companies. Probably because of the high demand, none of these companies have paid much attention to changing their practices to improve efficiency or the customer experience. For example, the customer's have to bring the packed boxes to the warehouse themselves; the receivers have to come to a warehouse in Jakarta to pick up their boxes; new customers have to wait a long time on the phone to speak to staff to find out about shipping schedules, prices, etc., as the company does not publish this information on a website. When there are inevitable delays in ship arrival due to poor weather or other reasons, there is no mechanism to automatically notify the customers, which leads to heavy phone traffic, as customers start calling to find out what is happening.

Being an innovative and dynamic young graduate, Susanto has been thinking of ways to improve efficiency. He made a number of suggestions for improvement to the owner of the company, but the response was negative. Susanto is increasingly frustrated with the process and wants to quit his job and start his own dynamic, efficient, and more customer-friendly box shipping company with a door-to-door service. Because he has hands on experience in all aspects of the business, from container scheduling, customer management, record keeping, trucking, and material handling, he is confident of his ability to succeed. His degree in Commerce and Business also had given him a good grounding in basic business processes. Furthermore, Susanto's brother-in-law, who runs a successful truck fleet delivering furniture

[1] While this case study is hypothetical it resembles a typical IT project.

throughout Jakarta, said that he could support him by arranging delivery of boxes from a Jakarta shipping warehouse to the doorsteps of customers in Jakarta.

Therefore, Susanto is ready to quit his job and start his own box shipping company. Because he did not have the capital or the willingness to buy a warehouse, Susanto wanted to start the business small by first operating from his garage. Susanto's business plan is to operate a website where customers could register their request to ship a number of boxes. Susanto would then arrange a time for him to pick up the boxes and bring them to his garage. Also, to lower initial costs, he would not buy a truck but use his old trusted van. After collecting all the boxes, he would take them to the container yard and load it. Once the shipment arrives in Jakarta, his brother-in-law would be advised to pick up them and deliver to the receiving customers.

Susanto wants the software in place before he resigns as he considers it to be a crucial success factor for his business. Again, to lower initial costs, Susanto gambled on getting the software built by a group of students enrolled in SWEN90016 at the University of Melbourne, rather than paying a professional software development company, because he had heard about the good outcomes from such projects in the previous semester from him friend Tom, who was a client for the project in Semester 1.

Your team is required to develop a web-based system for shipment management with the following functionality by the project due date.

Key Requirements:

1. The super user is referred to as the ***Shipper*** (Susanto in this case). The ***Shipper*** has a pre-defined and system recognizable email username and a default initial password for login (you do not have to provide an interface to enter this). The ***Shipper*** can perform ***Shipper*** specific functions described in the requirements below.

2. The ***Collector*** (Susanto's brother-in-law) has a pre-defined email username and a default initial password in the system (you do not have to provide an interface to enter this).

3. ***Customers*** can register in the system by providing the following ***Personal_Information***: name, home address, contact phone number, email address, initial password.

4. ***Customers*** can login to the system using their email address and password.

5. Logged in ***Customers*** can update their ***Personal_Information***.

6. Logged in ***Customers*** can create a booking, referred to as a ***Shipping_Booking:Request***, by entering information from the web interface. When creating a ***Shipping_Booking:Request, Customers*** must be able to:

a. Enter the number of boxes (assume the initial system supports only tea-chest sized boxes)
b. Enter the destination address in Jakarta (assume the address is valid)
c. Enter the pickup address in Melbourne (assume the address is valid)
d. Select the preferred ship departure and arrival date from a list of dates. This date list is referred to as ***Shipment_Information***. (Refer to requirement 10)
e. Enter an optional message from ***Customer*** to the ***Shipper***.

A ***Shipping_Booking*** also includes a ***Shipping_Booking:Ack***, created by the ***Shipper*** entering information from the web interface, which must provide the following data:

f. Status
g. Pickup date and time – default to empty
h. Cost – system generated as (cost-per-box @ $35)*(number-of-boxes)
i. HBL Number – default to empty (legal import/export licence id)
j. An optional message from the ***Shipper*** to the ***Customer***

7. Logged in ***Customers*** can view all ***Shipping_Booking***s they have created and can view all data associated with a ***Shipping_Booking***, but cannot modify the data (reduced initial scope).

8. A ***Shipping_Booking:Ack***, can be modified by the ***Shipper***, except for the cost. The Status must be one of the following:
   [To be Approved (default value for new requests), Request Accepted, Pick-up Scheduled, To be Shipped, Shipped, Arrived at Destination, Delivered, Delivery Delayed]

9. Anytime a ***Shipping_Booking*** is modified by the ***Shipper***, the system must send an email message to the ***Customer*** and the ***Collector*** with all the information.

10. ***Shipment_Information*** contains:
    a. Departure Date from Melbourne
    b. Estimated Arrival Date in Jakarta

    This data is not entered from a web interface but can be hard coded in the system or read from a file/database – prototype must show at least three possible date set options for customers to choose from.

11. ***Customer*** information and ***Shipping_Booking*** must be persisted (stored in a database).

Note: Some obvious requirements are not included in the requirement above to limit the scope for the first version of the system, but future enhancements to the system will be made to the system if the business is successful.

Appendix C – Peer Assessment

Student Name: Student #: Team #:

Other Team Members Names						
General Aspect	**Specific Aspect**	**Self**	**Team Member 2**	**Team Member 3**	**Team Member 4**	**Team Member 5**
Team Process	Attended team meetings					
	Maintained contact with other members					
	Contributed constructively in team discussion					
	Cooperated in team activities					
	Encouraged & assisted other members					
The Tasks	Complete assigned tasks on time					
	Contributed intellectual ideas and solved problems					
	Did their fair share of the work					
	Read and commented in a timely manner on report					
Overall	Based on your ratings, this student's overall contribution					
How would you divide $1000 among all the team based on their contribution to your project		**$**	**$**	**$**	**$**	**$**

Scale
1 – did not contribute in this way
2 – willing but not very successful
3 – average contribution to process or tasks
4 – above average contribution to process or t
5 – outstanding contribution to process or tasl

Teamwork Reflection:
< Reflect on how well the group functioned, the quality of the teamwork and the communication principles and style.>