

GROUP ASSIGNMENT COVER SHEET

Student ID Number	Surname	Given Names
31368786	Schou	Mathilde
30939976	Hundal	Swapnil
30379660	Yadav	Trilochan
30937019	Ye	Qian

* Please include the names of all other group members.

Unit name and code	FIT5057 - Project management	
Title of assignment	Assignment2A_Group134	
Lecturer/tutor	Stephen Paull	
Tutorial day and time	Wednesday 12 pm	Campus Clayton
Is this an authorised group assignment?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Has any part of this assignment been previously submitted as part of another unit/course?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Due Date June 1st 2020	Date submitted May 30th 2020	

All work must be submitted by the due date. If an extension of work is granted this must be specified with the signature of the lecturer/tutor.

Extension granted until (date) **Signature of lecturer/tutor**

Please note that it is your responsibility to retain copies of your assessments.

Intentional plagiarism or collusion amounts to cheating under Part 7 of the Monash University (Council) Regulations

Plagiarism: Plagiarism means taking and using another person's ideas or manner of expressing them and passing them off as one's own. For example, by failing to give appropriate acknowledgement. The material used can be from any source (staff, students or the internet, published and unpublished works).

Collusion: Collusion means unauthorised collaboration with another person on assessable written, oral or practical work and includes paying another person to complete all or part of the work.

Where there are reasonable grounds for believing that intentional plagiarism or collusion has occurred, this will be reported to the Associate Dean (Education) or delegate, who may disallow the work concerned by prohibiting assessment or refer the matter to the Faculty Discipline Panel for a hearing.

Student Statement:

- I have read the university's Student Academic Integrity [Policy](#) and [Procedures](#).
- I understand the consequences of engaging in plagiarism and collusion as described in Part 7 of the Monash University (Council) Regulations <http://adm.monash.edu/legal/legislation/statutes>
- I have taken proper care to safeguard this work and made all reasonable efforts to ensure it could not be copied.
- No part of this assignment has been previously submitted as part of another unit/course.
- I acknowledge and agree that the assessor of this assignment may for the purposes of assessment, reproduce the assignment and:
 - i. provide to another member of faculty and any external marker; and/or
 - ii. submit it to a text matching software; and/or
 - iii. submit it to a text matching software which may then retain a copy of the assignment on its database for the purpose of future plagiarism checking.
- I certify that I have not plagiarised the work of others or participated in unauthorised collaboration when preparing this assignment.

Signature **Date**

* delete (iii) if not applicable

Signature Mathilde Schou Date: May 30th 2020 Signature Qian Ye Date: May 30th 2020

Signature Swapnil Hundal Date: May 30th 2020 Signature _____ Date: _____

Signature Trilochan Yadav Date: May 30th 2020 Signature _____ Date: _____

Privacy Statement

The information on this form is collected for the primary purpose of assessing your assignment and ensuring the academic integrity requirements of the University are met. Other purposes of collection include recording your plagiarism and collusion declaration, attending to course and administrative matters and statistical analyses. If you choose not to complete all the questions on this form it may not be possible for Monash University to assess your assignment. You have a right to access personal information that Monash University holds about you, subject to any exceptions in relevant legislation. If you wish to seek access to your personal information or inquire about the handling of your personal information, please contact the University Privacy Officer: privacyofficer@adm.monash.edu.au



MONASH University

Assignment 2A **Project Plan Report**

FIT5057 – Project management
Semester 1, 2020



Authored by:

Mathilde Schou, ID: 31368786

Swapnil Hundal, ID: 30939976

Trilochan Ydav, ID: 30379660

Qian Ye, ID: 30937019

Tutored by:

Stephen Paull

Table of content

Executive Summary	3
1. Introduction in terms of references	4
2. Project objectives and constraints	4
3. Project methodology	5
4. Project governance framework	6
5. Project team structure	6
6. Scope management specification	8
6.1. Planning the scope – Scope management plan	8
6.2. Collecting the requirements	9
6.3. Creating the WBS	10
7. Stakeholder analysis.....	11
7.1. Stakeholder register	12
7.2. Stakeholder analysis matrix	13
8. Project communications management plan	13
8.1. Communication plan.....	13
9. Human resource requirement and training plan.....	14
9.1. Human resource management plan	15
10. Project schedule management plan.....	16
10.1. Schedule Management Methods Applied	17
10.2. Gantt Chart, down to level 4 of SLDC (and other) activities	17
10.3. Network Dependency Diagram & Critical Path	19
11. Cost management plan	21
11.1 Estimating cost.....	21
11.2 Scenario planning.....	22
12. Project risk management plan.....	23
12.1. Risk Assessment	24
13. Recommendation & next step.....	31
14. Submission checklist.....	32
15. References	33
16. Project management documentation	34
16.1. Meeting Records (Agenda and Minutes)	35
16.2. Weekly MS Project Timesheets.....	36

Executive Summary

The purpose of this report is to define the key deliverables of Monash University's Monash Online Portfolio 2020 project. The project has been executed using PMBOK project management tools.

Monash University is one of the top universities worldwide and students from all around the world aspire and come to study at Monash University. As part of the new 5-year strategy Monash wants to implement a tool where students can showcase their portfolios digitally to companies around the world, this will help in improving student's employability prospects as well as Monash's competitive advantage in attracting new students.

Key stakeholders are identified along with their impact and influence on the project. Project requirements are gathered from stakeholders and divided into functional and non-functional. Project scope is estimated by defining the scope of the project and decomposing the project into the smallest functionality required called Work Package using Work Breakdown Structure (WBS). Project baseline cost is estimated using a bottom-up approach and summing the labour cost for each deliverable. Risks are identified in the Risk Management phase, risk assessment is done using PESTLE (Political, Economic, Social, Technological, Legal and Environmental) and SWOT analysis, each risk is also given an impact rating for the project. Scenario budgeting is also used to estimate costs for all scenarios considering the risks identified. Throughout this report Project Management Lifecycle is followed consisting of six stages mainly Initiating, Planning, Executing, Monitoring, and Closing. Agile SDLC methodology is used which consists of many sprints for better feedback from end-users.

A standard recruitment and training plan are used to train the team members and acquire and manage other necessary resources for the project. The project communication plan is designed using PMBOK defined strategy. All the communication between team members and stakeholders is recorded for evidence and ease of executing the project.

After the execution phase, strong emphasis is given to the monitoring phase which consists of user testing. Once pilot testing is done, the project is ready for a global rollout, recommendations are provided by the project team to run the project successfully after the global rollout.

1. Introduction in terms of references

The current project status is that Monash's ICT department has completed a Request for Information (RFI) and is now issuing a Request for Quote (RFQ). The company we are managing is responsible for responding to RFQ given by Monash. This means that Monash is currently in the initiating phase.

PMBOK (2014), provides a basic framework describing the generic description of a project life cycle, illustrated in Figure 1. The model consists of four different phases: starting the project, organizing and preparing, carrying out the work, and ending the project. Focusing on the life cycle stages our company is orientated towards all these phases. In our project we use the same framework, but divide the project life cycle into following phases: Initiating, planning, executing, monitoring, and closing.

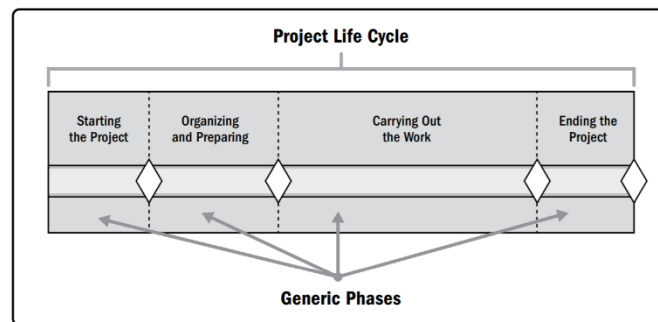


Figure 1 - Generic description of a project life cycle

To cope with these phases, the report will cover the following areas:

- **Scope management:** The requirements which are not stated in the assignment are expected to be gathered from the main stakeholders and end-users. A scope document of requirements, both functional and non-functional will be provided together with a detailed WBS.
- **Stakeholder management:** The internal and external stakeholders will be identified and a stakeholder communication plan will be conducted.
- **Time management:** The project will be scheduled by using schedule management, and tools such as WBS, Gantt chart, and critical path to estimate time. This will be done by using MS Project.
- **Cost management:** The budget baseline will be calculated based on the activities in the WBS and will be illustrated in a cost overview.
- **Risk management:** A risk register will be presented, discussing the risk factors, probabilities and potential strategies to cope with these.

2. Project objectives and constraints

Assumptions:

- The project start date is the 1st of July 2020

The purpose of this project is to develop a new online tool to be used by the students of Monash. This tool helps the students upload selected assignments to create an online professional portfolio. This is expected to be useful when the students are seeking employment. This project is established to create something useful for the students but also to enhance Monash's innovative services, brand, and competitive strength.

2.1 Project performance objectives:

The project performance objectives are the goals that the project should deliver. These objectives must be stated at the beginning of the project as it helps everyone agree with the goals.

Our team has chosen the **LinkedIn** platform, as we believe this platform has a larger global reach when comparing the employment orientated service.

The system must interface with Monash's Moodle system, to ensure student identity and student participating.

The system functional requirements:

1. The students must be able to edit and preview their portfolios.
2. The system should provide 4-5 basic templates
3. The students should be able to share own customized templates
4. The public should be allowed to view the student's portfolios IF they have a password or are somehow registered to Monash
5. The students should be able to roll back to earlier saved versions (version management)
6. The students should be able to upload pictures and videos to their portfolio
7. The system should provide Monash with a data analytic extension including reporting function.

The system non-functional requirements:

1. The system should be able to handle at least 1 million students (users).
2. The system should work in any web browser
3. The system should work on multiple onsite and mobile devices
4. The UX design should be user centred and easy to navigate.
5. The system should comply with Monash's cyber security guidelines:
 - Social media policy and procedures
 - Information Technology Acceptable Use policy and procedures
 - Private impact assessment
 - Privacy of student records policy and procedures
6. The system should also comply with the Australian data protection laws and regulations, including
 - Australian privacy principles and guidelines
 - The cybersecurity 2020 framework
 - And other actual requirements

Constraints:

The project constraints are often dealing with: financial, legal, ethical, environmental, quality, time etc. In this project the constraints are following:

- Budget constraint: we are given a budget of \$60,000 for labour effort. All other financials are covered by Monash but are required to be listed and provided to Monash.
- Time constraint: we are given 3 months to build the tool and 1 month to test the tool.
- Time constraint: The tool should be fully functional within 12 months or earlier
- Management constraint: the pilot testing should be conducted in Melbourne, India and China.
- Management constraint: our company should conduct a final acceptance testing after the pilot test

3. Project methodology

Software Development Life Cycle (SDLC) is the process of designing, developing, and testing software products, used by the IT development industry. The project methodology is important to identify early in the process as it helps the project manager to standardize the project progress by making an organized path of work methods. By applying the most suitable methodology will help them conduct and facilitate a smoother and more efficient project process.

Many different SDLC models can be used in an IT-project setting. Each model has a unique set of steps to follow, some of the most popular SDLC's are the waterfall model, spiral model, and Agile model. In this case, an **Agile SDLC model** is chosen.

The agile model is an iterative model that helps break down a large project into smaller parts and focuses on delivering the project promptly. It is important to suit the process of the project requirements, done in different iterations. The approach is more adaptive compared to other approaches, such as the waterfall approach which has more strict steps to follow. One of the most important parts of this methodology is customer/end-user feedback, which helps evaluate the different iterative processes. Thus, it is important to have constant student feedback on this project.

In conclusion, the agile methodology is chosen due to the constraints of having a smaller budget (60.000 AUD) and a limited time frame (4 months developing and testing duration). The approach has a more flexible structure with a minimal documentation approach, suitable for this short-term project. Another important statement is that the tool is to be adapted to the student-system Moodle, which means that we can benefit from the students' feedback, which this agile progress allows.

To plan the best possible iterations, the following steps should be followed: plan, design, build, test, review. These can be conducted in short sprints, which is considered to be more adaptable to the end user's requests. The small sprints will be adaptable by using **Scrum**, which is a process used within the Agile framework. The Scrum process requires that the project team creates a backlog, which is a list of all requirements (mostly from the users and Monash in this case). The sprint backlog will be used as a goal-list helping the team to implement the requirements, discussed in daily scrum meetings (Schwalbe 2016).

4. Project governance framework

Corporate governance is a legislated set of rules, standards and guidelines developed inhouse with the purpose of steering the organisation towards overall ethical and behavioural practices. These guidelines may include environment, economic and social guidelines. A subset of corporate governance called project governance refers to the framework, functions, and processes that guides project management activities in order to create a unique product, service, or result to meet organizational, strategic, and operational goals (PMBOK).

As a dedicated single point of accountability for project success, project manager Laura Hume would oversee the project's accountability. She has been endorsed by the projects' team and senior management based of valuable hard and soft skills to procure leadership of the project. Moreover, should there be any disputes within the team, Laura Hume retains the authority to make a final decision. In addition, all project decisions would ideally be made within 4 working days of being realized and project sponsor Felix Carter retains the power to form a decision-making forum if needed.

The focus of the project must be on exceeding the value for investment by achieving higher than expected results set by Monash and under no circumstances should there be any influence from any person or stakeholder to deviate the project's outcome from meeting its goal. Only stakeholders needed for the success of the project's outcome can be allowed to participate in the decision-making process. This will help reduce clogging of decision-making forum by reducing the number to only vital groups selected on a case by case basis.

5. Project team structure

Assumption:

- The Full-stack developer is a merge role of IT-Architect and Software developer

It is important to establish a project team structure that matches the requirements for this project. In this case, an agile methodology is used, thus the team structure should reflect this way of working. An agile team

structure tends to consist of only a few persons, to ensure communication quality in sprint periods. The theory presents different team structures designed for the agile methodology; a few examples is listed below:

- **Generalist team structure:** every team member is allowed to work at any task at any given time. This structure is mostly used when the IT project does not require a high level of expert skills.
- **Specialist team structure:** consist of a team with different expert background, as the IT project requires more expertise to succeed.
- **Parallel team structure:** the team members change their job role along with the sprint, meaning that they e.g. move from coding to testing.

Our project team is determined most appropriate as having a **specialist team structure**, given the various system functional and non-functional requirements e.g. the e-portfolio should work on multiple onsite and mobile devices.

The advantages of having different specialist allocated are that they are proficient in their way of working and do not require much training as they come with years of experience. Furthermore, the responsibility is easier to divide and resources are expected to be fully utilized in terms of the budget constraint. Given the small timeframe to design, analyse, test, and roll out the product there is very little time for training of employees when e.g. looking at the generalist team structure.

The team is presented in the team directory table (Snyder, C. S., 2013, p. 155) illustrated in Table 1:

Team directory table					
Project title:		Monash Online Portfolio 2020		Date:	
				1 st of July 2020	
Name	Role	Department	E-mail	Phone number	Work hours
Laura Hume	Project manager	Consulting company, Senior consultant	Laura.hume@consultantant.com	+61 3 9485 9290	8am-6pm
Jason Thompson	Full-stack developer	Consulting company, IT department	Jason.thompson@consultantant.com	+61 3 8598 8849	8am – 6pm
George Morgan	UI/UX developer	Consulting company, IT department	George.morgan@consultantant.com	+61 2 8574 9427	8am – 6pm
Emma Kane	Software tester	Consulting company, IT department	Emma.kane@consultantant.com	+61 7 5313 3975	8am – 6pm
Sarah Hill	Cyber security specialist	Consulting company, IT department	Sarah.hill@consultantant.com	+61 6 4257 5353	8am – 6pm
Emma Jones	Student assistant	Monash University, ICT department	Emma.jones@monash.edu.com	+61 6 9248 8502	8am - noon

Table 1 - Team directory table

The project team structure consists of four different consultants with different expertise and a student assistant from Monash's ICT department.

The Project manager is the owner and manager of the portal and is responsible for the success and timely delivery of the project. The Full-Stack developer is the main person in the technical team and designs backend as well as the front-end of the portal. The UI/UX specialist ensures that the portal has an interactive, engaging, and appealing design, this is important as the students are using this e-portfolio to apply for jobs. A software tester is very useful in sprints when testing has to be done many times and is essential given the scale and importance of the project to enhance student's employability. The cyber security specialist is necessary to check for any security vulnerabilities. Team also has one student representative for better feedback and requirement analysis and expected to enhance the response time between the two major stakeholders, Monash, and the consultancy.

6. Scope management specification

Assumptions:

- The identified team and the stakeholders are taken into account when scoping the project
- The validation and controlling the scope- sections are assumed to be done throughout the project

Scope management is important as it defines what is expected for the project and which activities are needed for meeting the deliverables and requirements. The scope of the project does also represent the boundaries and constraints of the project. The project scope is mostly used by the project manager to understand what resources should be allocated to different activities, but also as a tool to break down the project into smaller tasks. This management approach helps the project manager control and monitor time, cost, and quality, which enhance project success.

The scope management has six main processes (Schwalbe 2016, p. 182):

1. **Planning the scope:** include developing a scope management plan.
2. **Collecting requirements:** defining the product scope by developing a traceability matrix.
3. **Defining scope:** the scope management plan is reviewed; the output is the project scope statement.
4. **Creating the WBS:** subdividing the larger project deliverables into smaller parts. This makes it easier to manage.
5. **Validating scope:** The key project stakeholders are presented with the scope management plan and the WBS. This helps ensure that everyone understands the project conditions, activities, and boundaries. There might be some changes, as many inputs are given.
6. **Controlling the scope:** The project manager must control any changes and update any given documentation to make sure every stakeholder is updated. The output of this process could be reviewing change requests, resource allocation, or updates of the project management plan.

6.1. Planning the scope – Scope management plan

To plan the scope of this project, a scope management plan and a requirement management plan are developed. The scope management plan will discuss ‘how to’ collecting requirements, creating the WBS, validating the scope, and controlling the scope (2014, PMBOK). Table 2, present the **Scope Management Plan** (Snyder, C. S., 2013, p. 21-22):

Scope management plan			
Project title:	Monash Online Portfolio 2020	Date:	1 st of July 2020
Scope statement development	<ul style="list-style-type: none">• Implement standardization processes for analyzing the constraints• The templates provided in the PMBOK should be followed• Stakeholder events/workshops should be scheduled every week at Zoom, due to the current pandemic• Students at Monash should be interviewed regularly to provide feedback• To ensure optimal UX design for the students, interviews should be conducted		
WBS structure	<ul style="list-style-type: none">• The deliverables do not need to be fully detailed documented in the WBS but should be included in an understandable manner• The WBS should be validated with key stakeholders from Monash• The work packages will be analyzed using the given material from Monash• All key stakeholders should agree on the WBS• Any changes in the WBS should be informed to the project manager		
WBS Dictionary	<ul style="list-style-type: none">• The WBS dictionary should include a short description of the activity		

Scope of baseline maintenance	<ul style="list-style-type: none"> The scope baseline should contain the project scope and WBS
Scope changes	<ul style="list-style-type: none"> The process of scope validation should be standardized. This will be done as a minute of meeting by the project team to discuss customer requirements are followed The team should not continuously add new scope changes (try to avoid scope creep).
Deliverable acceptance	<ul style="list-style-type: none"> The project manager must be in charge of delivery acceptance If the delivery is not accepted a team meeting must be conducted to ensure further progress The main deliverables should be casually tested by the end-users Documentation should be provided to the project manager
Scope and requirements integration	<ul style="list-style-type: none"> Requirements must be well defined and support the constraints The project manager should validate the requirements and communicate if there are any changes

Table 2 - Scope management plan

6.2. Collecting the requirements

Assumptions:

- The functional and non-functional requirements are listed in section: 2. *Project objectives and constraints*
- The project is using an agile methodology, described in section: 3. *Project methodology*

The requirement traceability matrix is presented in Table 3 (Snyder, C. S., 2013, p. 31). The matrix list all the requirements, attributes, and status, which makes it easier to ensure that all requirements are addressed.

Requirement traceability matrix								
Project title:		Monash Online Portfolio 2020			Date:		1 st of July 2020	
Requirement information					Relationship Traceability			
ID	Requirement	Priority	Category	Source	Business objective	WBS Deliverables	Verification	Validation
1	Preview function	Must have	Functional	Laura Hume (project manager)	Preview portfolio	Student pre-view function	All end-users will be able to preview	System tracking
2	4-5 basic templates	Must have	Functional	Laura Hume (project manager)	System provides templates	System standard templates	All end users can use standard templates	System check for available templates
3	Sharing customized templates	Must have	Functional	Laura Hume (project manager)	System function which enables students to conduct templates	System customized templates function	All end-users can customize and share templates	System check for optimal sharing and customization
4	Rollback earlier version	Must have	Functional	Laura Hume (project manager)	System functions allow roll-back to an early version	System roll-back function	All end-users are allowed to go back 10 versions	System save 10 previous version in the system

5	Upload pictures and video	Must have	Functional	Laura Hume (project manager)	System function enables the following media types: png, jpg, mp4	Uploading media function	All end users are allowed to upload 1GB media to the system	System check storage for media
6	Data analytic extension	Must have	Functional	Laura Hume (project manager)	The extension should provide a reporting function	Analytical reporting function	Generate user utilization data into a report	System gather utilization data print it as a report
7	User handling 1 million students	Must have	Non-functional	Laura Hume (project manager)	The system should be able to handle 1 million users	Performance function	System log	System check number of online users
8	Work in any web browser	Must have	Non-functional	Laura Hume (project manager)	The end-users can enter the system from any browser	Usability function	Coding for all browsers	System checking accessibility print log
9	Work on multiple onsite and mobile devices	Must have	Non-functional	Laura Hume (project manager)	The end-users can enter the system from multiple devices	Device accessibility	Coding for devices – including UX	System checking accessibility print log
10	UX design should be user-centered	Must have	Non-functional	Laura Hume (project manager)	Design and layout	Design interface	Designed for student	User test and feedback
11	In compliance with Monash's cyber security guidelines	Must have	Non-functional	Laura Hume (project manager)	System compliance	Monash compliance cyber security	Social media policy, use policy, private impact, privacy of personal data	Manually check if system follows requirements and standards
12	In compliance with the Australian data protection laws and regulations	Must have	Non-functional	Laura Hume (project manager)	System compliance	Australian data protection laws and regulations	Australian privacy principles, framework	Manually check if system follows requirements and standards

Table 3 - Requirement traceability matrix

6.3. Creating the WBS

Assumptions:

- The software development methodology is agile
- The choice of WBS model is a top-down structure

The presented Work Break Down Structure (WBS) aims to describe the project plan by the 'top-down' approach. The WBS intends to display the designed project structure in a more understandable way, which makes it easier e.g. the customer to understand the project. The WBS is an important tool for monitoring the project status and should be measured against the project baseline.

The WBS top-down approach is to a most general method for designing a WBS. The solution is identified in the top of the structure and further dissects into smaller work packages (Schwalbe 2016). The WBS is illustrated in Figure 2, with associating four levels.

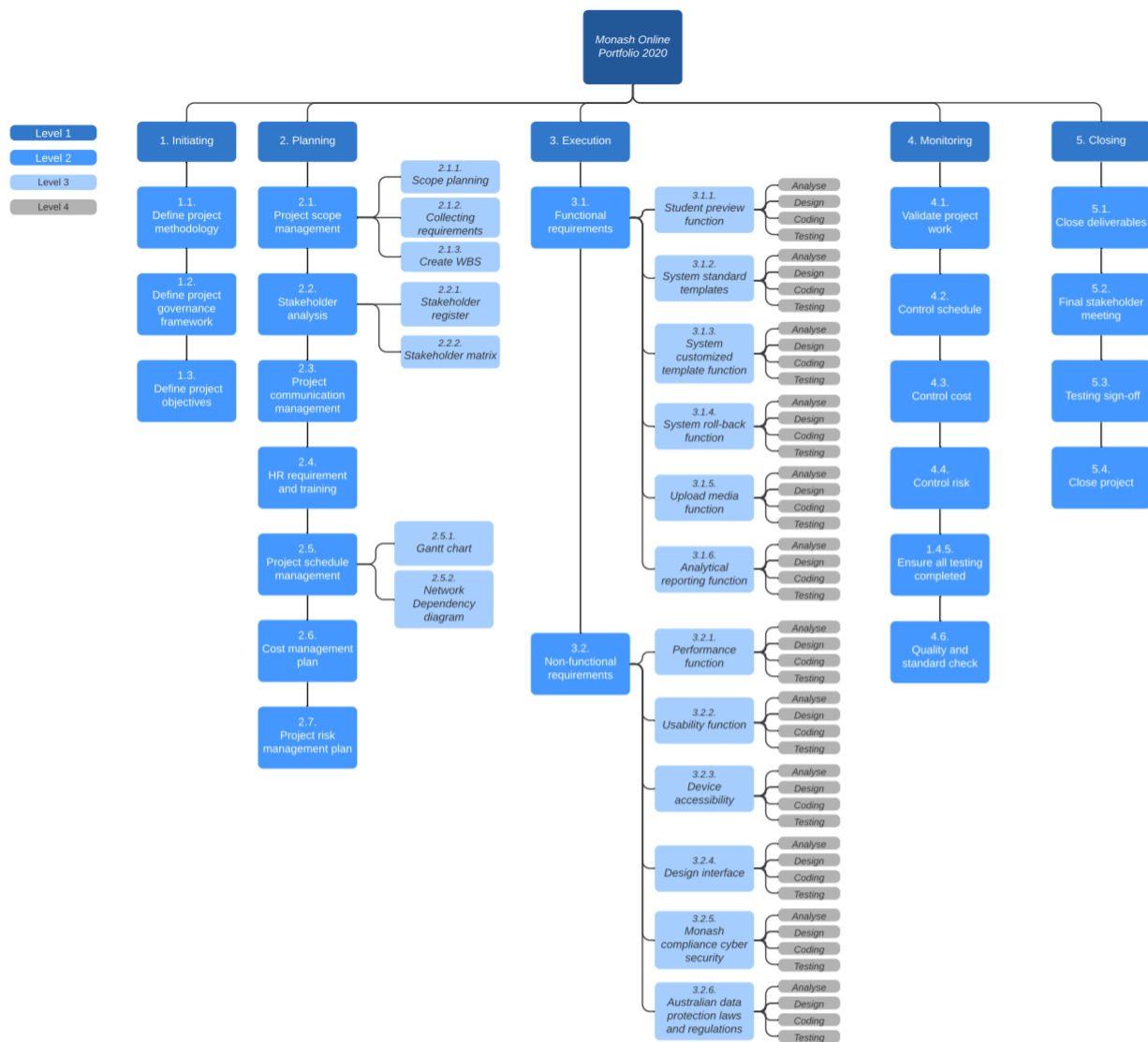


Figure 2 - Work Breakdown Structure

7. Stakeholder analysis

Assumptions:

- LinkedIn or potential industry employer could also be stakeholders but is not included in this analysis

It is important to identify the stakeholders, which could be persons, groups, organizations, or even systems which have an interest in project or power to affect the project results. Examples of stakeholders in an IT-project could be customers/end-users, project team, governance, consultants, sub-contractors, etc.

The main aim is to identify the project stakeholders and their interests and power towards the project. If a stakeholder has high power and high interest in the project, they should be closely monitored as their actions would have a high impact.

The stakeholder analysis consists of two steps:

- **Stakeholder register:** The register help identify the persons and their associated organizations, by documenting relevant information about their personal information, role within the project, the requirements, expectations, influence, and classification (PMBOK, 2014).
- **Stakeholder Analysis Matrix:** is a graphic illustration of the stakeholder's influence in terms of power and interest.

7.1. Stakeholder register

The stakeholder register is used to identify the key stakeholders in the Monash Online Portfolio 2020 project. The register should be updated frequently as parameters such as: influence, expectations, or role might change during the project. This project has both internal and external stakeholders, thus even more important to ensure information from persons which the project team might not have frequent contact with and to establish a common understanding of the different roles of the project. The stakeholder register is developed based on the project charter, procurement documents, and meetings and is used for developing the stakeholder matrix presented in the following section. Furthermore, the stakeholder register document is useful when starting to develop the communication plan, cost plan, and risk register plan.

The stakeholder register illustrated in Table 4, (Snyder, C. S., 2013, p.8).

Stakeholder register							
Project title:		Monash Online Portfolio 2020			Date prepared:		1 st of July 2020
Name	Position	Role	Contact information	Requirements	Expectations	Influence	Classification
Felix Carter	Head of ICT department Monash	Project sponsor	Felix.carter@monash.com	Accept allocation of resources	The e-portfolio must improve competitive force	High	Neutral
Ethan Ross	ICT Manager	Key contact	Ethan.ross@monash.com	Run the project on time and budget	Key contact person	High	Neutral
Harrison Hood	Manager from Monash's IT department (Melbourne)	Subject matter expert	Harrison.hood@monash.com	The tool should run in Melbourne	Important for running test in Melbourne	Medium	Neutral
Sienna Baine	Manager from Monash's IT department (India)	Subject matter expert	Sienna.baine@monash.com	The tool should run in India	Important for running test in India	Medium	Neutral
Mila Hewson	Manager from Monash's IT department (China)	Subject matter expert	Mila.hewson@monash.com	The tool should run in China	Important for running test in China	Medium	Neutral
	Student	End-user		The tool must have a certain standard else the students won't use it	That the tool could improve their job-seeking process	Medium	Neutral

Table 4 - Stakeholder register

7.2. Stakeholder analysis matrix

The head of Monash's ICT department is considered to be the project sponsor, thus has high interest and high power. He does not have as much interest as the ICT manager, as this person is considered to be the one in charge of the project, thus having a higher interest.

The three IT managers do not have as much power, but they still have a high interest in the project, as they will be in charge of implementing/test the tool in their respective countries.

The students are considered to have less interest in the project, as the tool is not crucial for their educational progress, but expected to have high power. If the tool does not fit the student's requirements, the whole project will fail, as no one would use the developed tool. Furthermore, it could have an impact on Monash's competitive strategy.

Figure 3, illustrates the stakeholders in terms of interest and power.

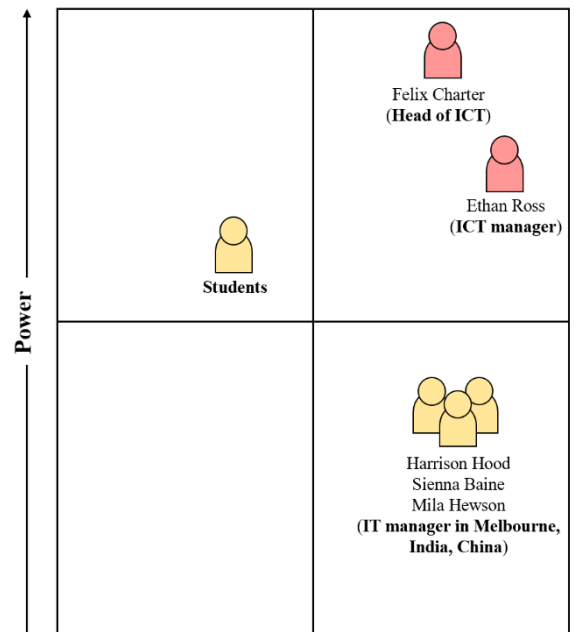


Figure 3 - Stakeholder analysis matrix

8. Project communications management plan

Many IT projects fail due to problems with communication, especially when working agile, as the project conditions are constantly changing. Another factor is that the team might consist of various technological backgrounds, which also makes it more challenging to communicate, as the professional language differs.

The project manager is in charge of planning communication management, which is the first phase of the process of developing the communication management plan. The two next phases are concerning managing and controlling the communication throughout the project (Schwalbe 2016, p. 392).

- **Planning communication:** a communication plan should be developed for stakeholders, including the communication channels and how frequently information-updates should be given. This is all stated in the communication plan, presented in the communication plan (see section 8.1 – communication plan).
- **Managing the communication:** The managing of communication will be processed throughout the whole project. New updates should be incorporated into the communication plan. The project manager should be aware of the communication detail-level including which communication-format expected. This could example be weekly meetings with stakeholders or weekly updating-mails, depending on the management style.
- **Controlling the communication:** The project manager must ensure that the set communication-requirements are met, including frequency, change request, or document updates.

8.1. Communication plan

Assumptions:

- It is assumed that the communication plan is stored due to safety standards as it may contain proprietary knowledge
- It is assumed that the project manager takes any time difference into account when planning the communication plan with different stakeholders
- Project management must specify that every information, good or bad, should be shared

The communication plan is important as it creates an evidence-foundation, which can be used for reference. It is very important when working with clients so that the project manager have written evidence for Monash's expectations and requirements. This is also important at the end of the project, when identifying the project's success. It is also a good tool for gathering feedback from Monash, which can be used to modify the project scope (Lucidchart, 2019).

We are following the PMBOK format plan, which should be shared on an online platform, where all stakeholders and project leader has access to review. Many use an online-shared word document, but we choose MS Teams, to ensure a consistent storage location.

The method of communication is important, as you may end up with stakeholders who never check their emails or forgets to upload minutes of meetings. Thus, the method of communication should be closely monitored throughout the project and updated if the first allocated method is not working. The project manager is in charge of updating the communication updates. Table 5 presents the communication plan (Snyder, C. S., 2013, p.100).

Communication plan				
Project title:	Monash Online Portfolio 2020		Date prepared:	1 st of July 2020
Stakeholder	Information	Method	Timing or Frequency	Sender
Felix Charter (Head of ICT department Monash)	Status reports Formal presentations	Email Zoom meetings	Weekly Every second week	Laura Hume (Project manager)
Ethan Ross (ICT manager Monash)	Meeting minutes Project updates	Zoom meetings Update of communication plan in MS Teams	Weekly	Laura Hume (Project manager)
Harrison Hood (IT department – Melbourne)	Meetings To-do lists Checklists	Zoom meeting Update lists in MS project	Every second week	Laura Hume (Project manager)
Sienna Baine (IT department – India)	Meetings To-do lists Checklists	Zoom meeting Update lists in MS project	Every second week	Laura Hume (Project manager)
Mila Hewson (IT department – China)	Meetings To-do lists Checklists	Zoom meeting Update lists in MS project	Every second week	Laura Hume (Project manager)
Students	Surveys	Online through Moodle	Every third week	Laura Hume (Project manager) Emma Jones (Student assistant)

Table 5 - Communication plan

9. Human resource requirement and training plan

Assumptions:

- There could be an internal functional manager within the consultancy, but we assume that the project manager will undertake this role

Human resource management is especially important in IT-project as required human expertise is more difficult, expensive, and hard to keep. Thus, human resource management is necessary to ensure everyone involved in the project are utilized in the most effective manner (Schwalbe 2016).

The project human resource management (PHRM), includes organizing, managing, and leading the team. There are six different processes associated with PHRM (PMBOK, 2016, p. 308):

- **Planning resource management:** identifying the roles needed for completing the project, where the output is a human resource management plan (see the plan in section 9.1. *Human resource management plan*)
- **Estimate activity resources:** identify what kind of equipment or supply needed for the project. This could be special test computers or special software licenses.
- **Acquire resources:** contracting the needed employees for the project, this could be internal or external.
- **Develop team:** some team members may need special training to acquire the right competencies. This state also includes developing a team-bond, which could be done by team building or a special kick-off introduction, depending on the budget.
- **Manage team:** the project manager must ensure team members are meeting KPI's, giving them feedback, keep them motivated, or resolve any conflicts. The output should be documented e.g. change requests or in the project management plan.
- **Control resources:** the project manager must ensure that the physical resources are met and continuous. This is done by monitoring the project plan with the baseline, to keep track of any major resource variance.

9.1. Human resource management plan

The HRMP consists of three different sections; roles and responsibilities, project organization charts, and staffing management plan (Snyder, C. S., 2013, p. 96). Table 6, illustrates the human resource management plan.

Human resources management plan			
Project title:	Monash Online Portfolio 2020	Date prepared:	1 st of July 2020
Roles, Responsibilities, and Authority			
Roles	Responsibilities	Authority	
Laura Hume (Project manager)	<ul style="list-style-type: none"> • Planning the project to meet the objectives • Leading the project team, including task assignment, deadlines, updating documentation, communication. • Stakeholder management • Time, resources and cost management • Risk management • Monitoring progress, reporting, and documentation 	High	
Jason Thompson (Full-stack developer)	<ul style="list-style-type: none"> • Front-end and back-end architecture • Server functionality • Database functionality • Cross-platform functionality • Meeting technical requirements • Ensure responsiveness 	Medium	
George Morgan (UI/UX developer)	<ul style="list-style-type: none"> • Gather requirements from clients • Mock-ups, design ideas, process flow • Design a functional user interface • Prototypes • Style coordination with Monash's branding 	Medium	
Emma Kane (Software tester)	<ul style="list-style-type: none"> • Create test set-ups • Test software usability, errors, bugs • Test project requirements • Report status quo to project manager and different team member 	Medium	
Sarah Hill (Cyber security specialist)	<ul style="list-style-type: none"> • Implement security standards into the software • Analyze vulnerabilities • Monitoring security status • Identify, map and forecast potential threats 	Medium	

	<ul style="list-style-type: none"> • Ensure correlation with Monash security policies 	
Emma Jones (Student assistant)	<ul style="list-style-type: none"> • Establish a connection with students • Administrative tasks • Research • Proofreading, preparing slides, meeting note taker 	Low
Project organizational structure		
<pre> graph TD LH[Laura Hume (Project manager)] --- EJ[Emma Jones (Student assistant)] LH --- JTH[Jason Thompson (Full-stack developer)] LH --- GM[George Morgan (UI/UX developer)] LH --- EK[Emma Kane (Software tester)] LH --- SH[Sarah Hill (Cyber security specialist)] </pre>		
Staffing management plan		
Staff Acquisition	<ul style="list-style-type: none"> • The project manager should look inside the consultancy for staffing opportunity • Ensure skillset is matching the agile methodology and activities • Develop an acquisition contract 	
Staff release	<ul style="list-style-type: none"> • The team members are required to document every spend hours • The team members are being released for every other daily activity and should focus 100% on the project 	
Resource Calendars	<ul style="list-style-type: none"> • A resource colander will be provided 	
Training Requirements	<ul style="list-style-type: none"> • The project manager must closely monitor the team performance, if performance do not meet the requirements, training should be provided to the team-members • The project manager should have accounting-training 	
Rewards and Recognition	<ul style="list-style-type: none"> • There will be no additional rewards 	
Regulations, Standards, and Policy Compliance	<ul style="list-style-type: none"> • Team members must agree to be in compliance with the given standards and regulations 	
Safety	<ul style="list-style-type: none"> • The team are permitted to work by the internal cyber security safety guidelines 	

Table 6 - Human resources management plan

10. Project schedule management plan

Assumptions:

- We assume that all tasks are executed in chronological order as planned. Some tasks can be executed parallely by different members of the team.

Project schedule management is the process of establishing the policies, procedures, and documentation for planning, developing, managing, executing, and controlling the project schedule (PMBOK). It provides a detailed plan of how and when projects deliverables will be achieved. The project scheduling plan asks “how we are going to do the work”, deciding what activities need to be scheduled and how they will be completed.

The importance of project scheduling in management activities is that it allows scarce resources to be allocated efficiently. These resources are as follow

- Financial – Project scheduling ensures optimal use of financial resources. In our project scheduling, we have factored for the wage rate of employees and ensures that our employees are hired for the right period, so that we are paying for required job correctly to avoid excessive costs by stretching the project for longer period or paying a premium to get the job done quicker.
- Documentation – We use Gantt chart to breakdown our work structure, it shows dependencies of tasks in logical order and definitive milestones. Our aim in Gantt chart is to graphically represent our

planned work and as a team we aim to record and report our progress in completion of project. A PERT chart will also be used to analyze project tasks.

- **Management** – Based on our project scheduling, our project manager will be conducting regular meetings to ensure that the targets and milestones are being achieved as per plan. We would also use these meetings to ensure team members are focused and understand their roles correctly so that no costly mistakes are made. Moreover, these management meetings ensure that work flows from one task to another smoothly and each member knows they need to contribute to projects success.
- **Quality** – Project scheduling ensures that we maintain the desired quality of our task before moving to next task. Using this approach, we ensure quality meets expectation and that problems are resolves as they arise, this eliminates the need to wait until the end.

10.1. Schedule Management Methods Applied

After formulation WBS plan, we have designed a schedule management plan and an estimate activity duration to build project schedule overview. Estimating activity duration is a method used to calculate the number of work periods required to complete an individual activity with estimated resources. We will use a PERT char to calculate duration, time and efforts required for each WBS work package in order to calculate the critical path in section 10.4.

10.2. Gantt Chart, down to level 4 of SLDC (and other) activities

Using SDLC and WBS, The Gantt chart model has been designed in 5 phases (initiation, planning, execution, monitoring and closing) on Microsoft Project, illustrated in Figure 4 and 5. Gantt chart provides schedule baseline for tasks start and finish time and their dependencies on other tasks. The first three months of our project are used to build and developing the the software, phases include initiation, planning and execution. The project's targetted work estimation is shorter than suggested 3 months to provide a buffer space incase certain activities take longer to complete than estimated.

The pilot testing plan is scheduled to be completed in 22 days, this is our optimistic estimation with buffer of a week incase some taks experience a delay. After pilot testing, the platform will be avaiable to students in Melbourne, India and China and the global rollout plan is executed also in monitoring phase. During global rollout major testing and debugging will take place with adjustments todifferent cultures and languages.

During milestones, updates about the projects progress will be provided to Monash's top management and team discussions regarding projects further plans will take place.

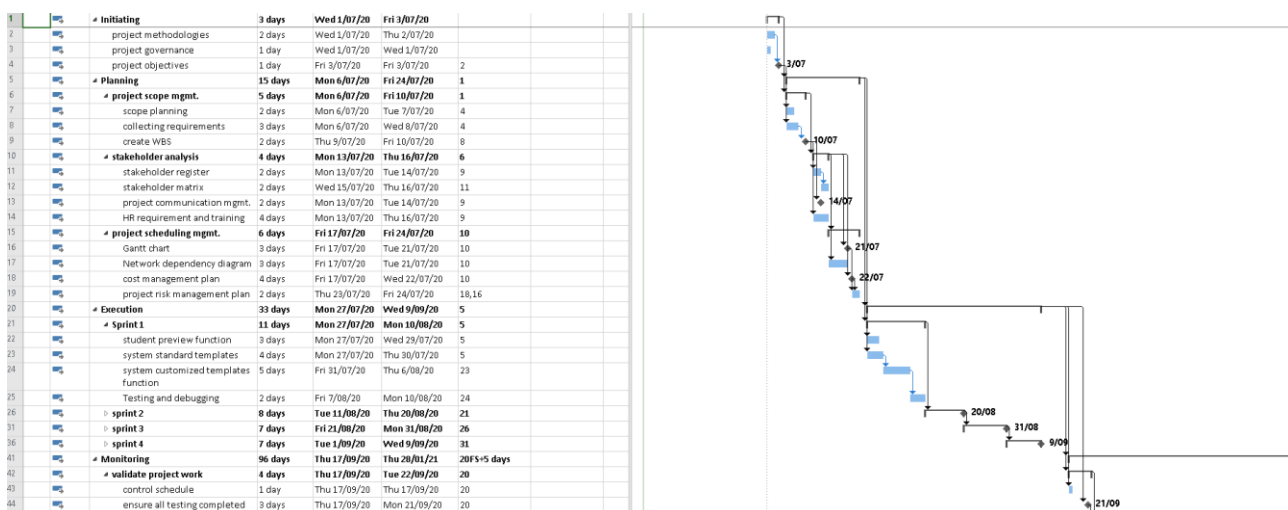


Figure 4 - Gantt chart 1

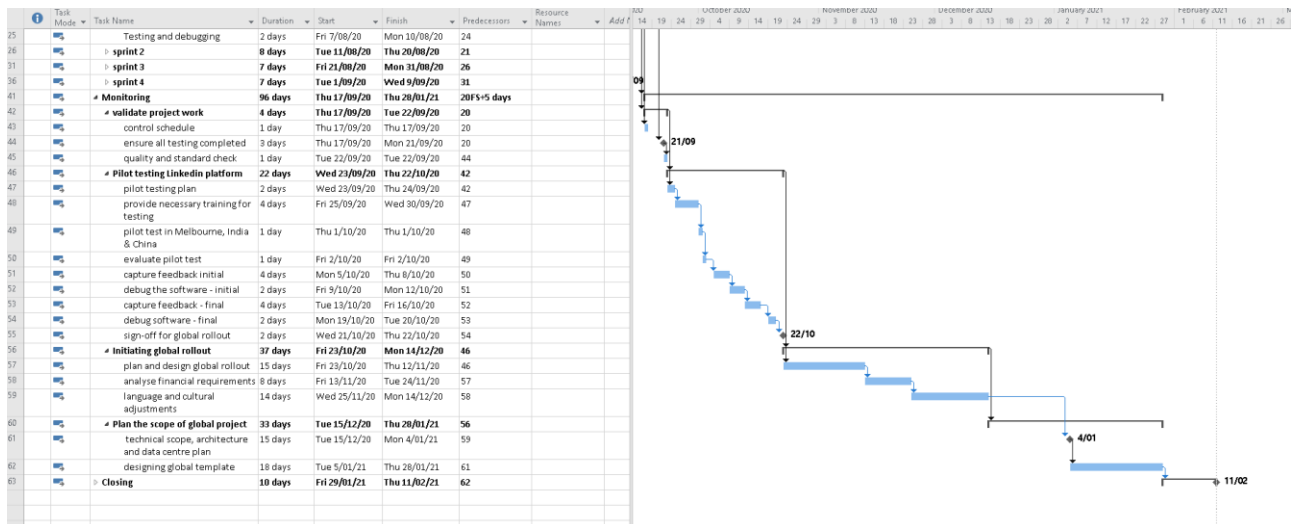


Figure 5 - Gantt chart 2

10.2.1 Project Schedule Controlling plan

The schedule control plan is used to facilitate close status checks of the projects. The plan also aids in ensuring that the project stays on the right track while maintaining quality and quantity.

Regular monitoring for slippage

Project manager Laura Hume is responsible for maintaining regular checks of the projects progress. Critical path method is used to monitor for slippage, if any of the activities are delayed then overall project completion can be affected. To ensure project remains on track as per Monash's guidelines, a buffer is maintained and also watched closely while feeding to activity chain if slipping indication is noticed.

Change request

Laura Hume is also responsible for change requests. If requested change creates a change in baseline, written formal request to Laura Hume will need to be raised. These changes will be analysed against Perform Integrated Change Control PICC before being actioned.

Trend Analysis

Project sponsor Felix Carter visually observes the projects trend analysis results. These analysis include the projects performance over a period of time and illustrate a graphical representation if the project is improving or degrading.

10.3. Network Dependency Diagram & Critical Path

Network Dependency Diagram

The network dependency diagram is illustrated in Figure 6.

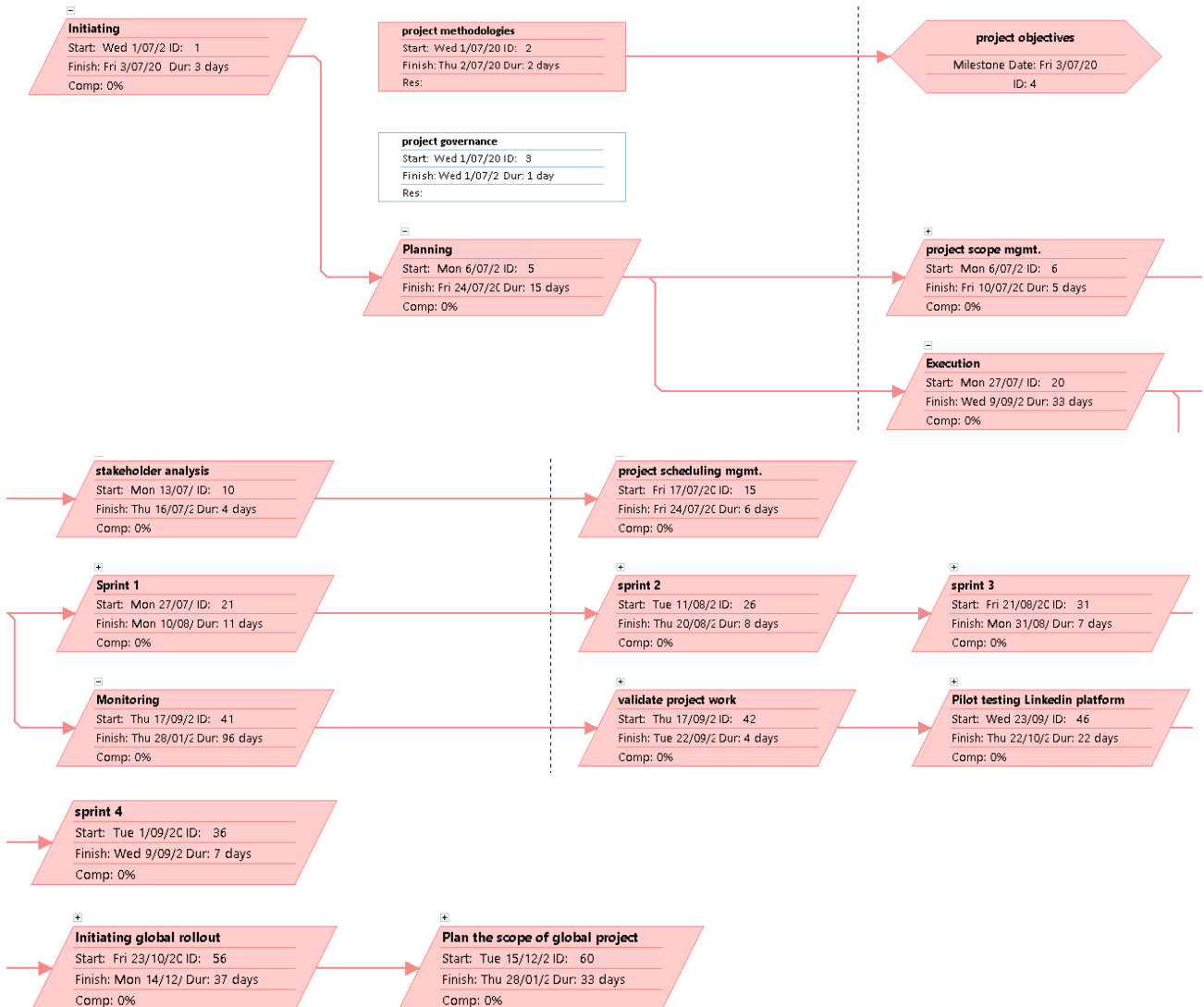


Figure 6 - Network dependency diagram

A network diagram is graphical representation of all tasks and their responsibilities in a work-flow project. This is a collection of boxes and series of arrows illustrating the workflow structure. Two main types of network diagrams are arrow diagram method (ADM) and precedence diagram method (PDM). The main difference between them is that ADM uses nodes and arrows to represent activities and tasks while PDM uses boxes and lines represent dependencies. An important difference between the two is that PDM can represent all dependencies namely, finish to start (FS), start to start (SS), finish to finish (FF) and start to finish (SF) while ADM can only represent “finish to start” (FS) dependency. For this reason, we will use PDM to model our network dependency diagram.

Node convention

The node convention is illustrated in Figure 7.

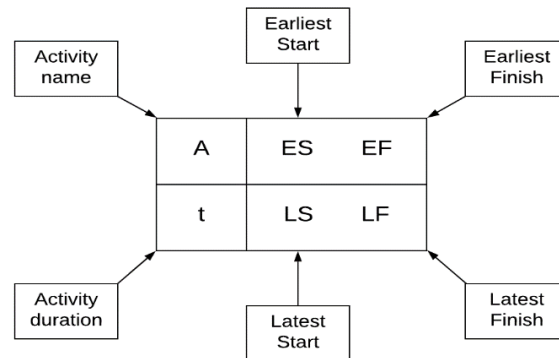


Figure 7 - Node convention

Figure Network diagram node convention

The above node convention is derived from Quantitative methods for business by Anderson, Sweeny and Williams. In order to design critical path and calculate activity duration, we must understand the forward pass and backward pass technique. A forward pass denotes moving forward in the diagram and calculate the earliest start (ES) and earliest finish (EF) while backward pass, as the name suggests is moving back through the network diagram and involves latest start (LS) and latest finish (LF).

Critical Path

A critical path is longest sequence of activities in a project that should be completed for entire project to be completed. This is also the minimal amount of time needed to complete the project. These are many techniques in order to calculate this, we will use CPM method.

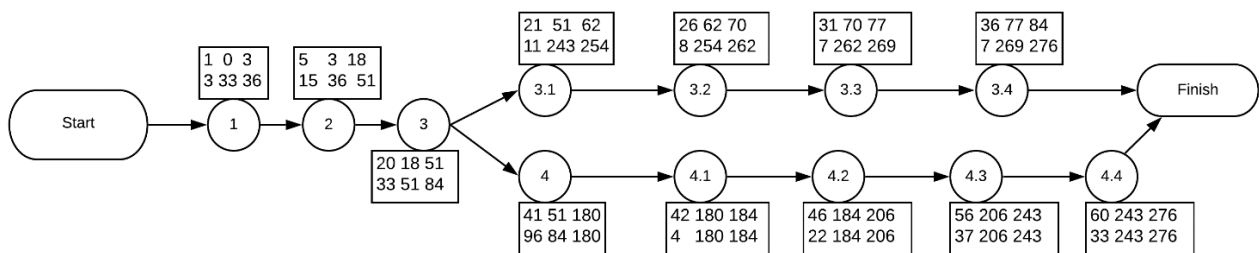


Figure 8 - CPM project scheduling

In the above Figure 8, we have used the activity name same as the activity number from the Gantt chart in MSProject. The forward pass shows that it would take 276 days to complete the project. Slack for an activity represents how long an activity can be delayed without increasing project completion time. We can calculate the slack by using formula $Slack = LS - ES$ or $LF - EF$. Applying $LS - ES$ for slack in activity 4.1 gives the value of 0 (180-180) this means, activity 4.1 is on a critical path. Any delay in this activity will reflect upon delay in the project completion time. Therefore, activity 4, 4.1, 4.2, 4.3, 4.4 are all on the critical path.

In case the project is experiencing delays in activities on critical path, two strategies can be applied to avoid this issue, namely fast tracking and crashing. These are schedule compression techniques used when the

projects baseline has fallen behind planned schedule, or the project needs to be completed earlier than due date. Fast tracking is a technique used to complete the tasks parallelly instead of waiting for each piece to be completed separately. While crashing is used when fast tracking is not possible, this involves adding more resources to a task or whole project. A cost associated with adding more resources is involved and schedule tradeoff is analyzed to determine whether adding more resources would provide enough benefit for completing the project in shorter time span.

11. Cost management plan

Assumptions:

- The budget of \$60,000 is only covering the software development. All other costs e.g. hardware, project management, the software will be covered by Monash University.
- We have developed the cost management plan based on our WBS which is focused on the 12 months duration
- We are only considering the life-cycling costing, and do not consider profit estimations, cash-flow estimations, the return of investment or indirect costs, etc. which is normally expected to be considered (Schwalbe 2016, p. 270)
- It is assumed that the project manager has received accounting-training

Cost management is the process used to minimize the cost and risk of the project while maintaining the quality as well as the scope of the deliverables for the project (Rad, 2002). Unfortunately, IT projects are generally prone to fail due to incorrect budgeting and estimates (Meyer, W.G., 2016). The theory presents various reasons why budgeting is hard when planning an IT project, e.g. project manager lack of accounting experience. Another important reason is that labor-cost within an IT project is quite high, thus any overdue will have high-impact on the budgeting.

PMBOK present four processes for project cost management (PMBOK, 2016, p. 231):

- **Planning:** establishing policies and documentation, the output will be a cost management plan.
- **Estimating cost:** an estimation of the cost required to meet the objectives, presented in a manageable manner by using e.g. excel.
- **Determine the budget:** The overall cost is divided into different work-packages to create a baseline.
- **Controlling the budget:** any change requests or management plan updates should be incorporated into the cost management plan.

11.1 Estimating cost

To estimate the cost, a **bottom-up** approach is used, where individual cost estimates for the work-activities from the WBS are calculated. Thus, this approach is dependent on the detail-level of the WBS made. This project is not large, containing a manageable amount of work-activities, thus the bottom-up approach is considered to be more accurate contra the top-down approach. The top-down approach is less expensive, as the cost is divided only at first or second level WBS-activities, thus require more cost-expertise from the team (Schwalbe 2016).

The project manager must collect as much information about the project as possible, such as project requirements, quality expectations, resource constraints, team-member information, test-details, etc. (Rad, 2002).

To estimate the full project cost, an overview of team-members and their salary is illustrated in Figure 9:

Labour compensation assumptions

Resource ID	Name	Role	Daily rate (AUD)
PM	Laura Hume	Project Manager	\$ 620,00
FSD	Jason Thompson	Full-stack developer	\$ 870,00
UIX	George Morgan	UI/UX developer	\$ 550,00
ST	Emma Kane	Software tester	\$ 550,00
CSS	Sarah Hill	Cyber security specialist	\$ 680,00
SA	Emma Jones	Student assistant	\$ 144,00

Figure 9 - Labor compensation assumptions

The full project cost overview is presented in the full scale in Appendices 1. The cost estimations present the activity-based costing down to the lowest deliverable level. Figure 10, presents an overview of the cost allocation. It is clear that the execution and monitoring phase is more labor-intensive, thus requires more cost. The initiating-, planning- and closing- phase require no or a small amount of technical-specialist labor, explaining the lower cost. The estimations are based on the full project life cycle (12 months), whereas the project manager has the highest acquired working days, which is estimated to be 53,5 full days.

Project cost overview		%
1. Initiation	\$ 3.948,40	6,6%
2. Planning	\$ 8.980,40	15,0%
3. Execution	\$ 25.003,30	41,7%
4. Monitoring	\$ 16.401,80	27,4%
5. Closing	\$ 5.611,00	9,4%
Grand total	\$ 59.944,90	100,0%

Figure 10 - Project cost overview

There could be several cost savings initiatives, which could be implemented in the future. According to the study made by Lee Chalmers (Chalmers, 2008), initiatives such as working from home could increase productivity or hiring workforce from countries which have lower salary cost to work long-distance. Initiatives like these could be considered by the project manager.

11.2 Scenario planning

Scenario planning is important as the cost budget can become fixated on numbers without allowing flexibility for unpredicted uncertainties.

We are permitted to present three different scenarios: best-case, most likely-case, and worst-case. The baseline/ total cost presented above, represents the baseline for the best-case scenario which contains the minimum risk exposure, where it is expected that no issues will occur. Thus, the project estimations for the best-case scenario is calculated to be: **\$59,944.90**.

The cost constraint is \$60.000 thus the baseline is very close to the constraint and there is only a little room for faults. According to Edward Chung (Chung, 2017), it could be beneficial to add management reserve, which is money added by the management to cover for uncertain risks. The amount of money allocated depends on the individual firm, but is normally in the range of 5-15% of the total budget.

The most likely-case and the worst-case is where some risk and maximum risk occur respectively. These scenarios are calculated by selecting a given percentage that the baseline should be inflated by depending on the external risk and trends, but also the internal factors e.g. high risk of change in key personal (Stede, W. A, 2011).

According to Alain Abran (Abran, A., 2015, p.65-69), the most likely-case is generally calculated to occur with a 10% probability and the worst case has a 20% probability rate. Due to the current circumstances with the global pandemic of Covid-19, both cases are raised with 5% each.

The best-case, most likely-case, and the worst-case scenario are calculated in the following Table 7:

Best-case	<i>Baseline 1 = \$59,944.90</i>
Most likely-case	<i>Baseline 2 = AUD \$59,944.90 * 1,15 = \$68,936.63</i>
Worst case	<i>Baseline 3 = AUD \$59,944.90 * 1,25 = \$74,931.13</i>

Table 7 - Best-case, most likely-case and worst case

The most likely-case and worst-case is exceeding the budget with **\$8,991.73** and **\$14,986.23**, respectively.

12. Project risk management plan

Assumptions:

- Every team member has required workstation setup at home and internet access.
- Team members can work remotely, and good communication is maintained within the team.
- Team members are taking precautions and abiding by government requirements to protect themselves from Covid-19.

Risks management is a vital component of any project planning, unlike buying an insurance and transferring responsibility to another organization, we must plan for a variety of risks. Risk management is a process of identifying, analyzing and actioning risks that arise during life cycle of the project, ensuring that the project stays on track to meet its goals (Ray, The Risk Management Process in Project Management, 2017).

This involves asking the question “*what can go wrong?*” and then building a plan to mitigate if such a risk was realized. We have used the process of identifying, analyzing, categorizing and prioritizing in our risk response plan and register to prepare incase a risk becomes an issue. In such a case, having a plan ready for action would save time and allow us to reduce the impact of risk on our project.

A risk register records details of identified risks and the results from performing qualitative analysis, plan response, implementation and monitoring are also recorded in this register. The information can be subjective, and length may depend on the risk’s complexity. Once the risks are recorded, a person is assigned to each risk and strategy to monitor the risk is also included in this register.

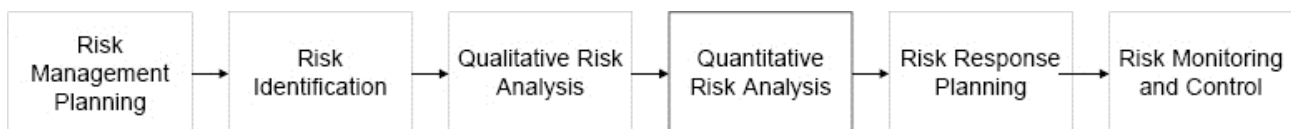


Figure 11 - PMBOK risk management process

The above Figure 11, shows a process flow in systematic steps to identify and manage risks. The first step in creating a sound risk management plan is to identify risks and then assess these risks using qualitative and quantitative measures. Qualitative measure includes assessing risks on two components – *probability of occurrence* and its *impact* on the project’s outcome, each given a score on a scale of 1-10 (1 as low and 10 being

high risk factor). The overall risk priority is ranked by multiplying the two scores. The quantitative analysis assesses the impact of each risk on the project's schedule and budget.

The information outcome from these analyses are used to form a risk response plan to monitor and control the risk. For example, if risk of catching covid-19 has high likelihood of occurring and high impact on projects outcome, a necessary plan would be needed in place to reduce this risk, say if it were to occur in the team.

12.1. Risk Assessment

Risk assessment is a methodology of identifying and assessing a risks' likelihood of occurring and its impact on the outcome of our project. This can help us form a well-researched plan for mitigating such risks by prioritize them based on likelihood of occurrence and their level of impact. Our risk assessment involves risk identification, risk analysis and evaluation with the help of team members.

Risk assessment involves three phases, illustrated in Figure 12 - identification, analysis and evaluation. In this process, a considerable time has been spent to map out possible risks. To do this, Laura Hume (project manager) setup a risk identification session that utilizes brainstorming technique, allowing each team member to share their opinions. At the end of this session, areas that may require additional efforts, time and money are mapped out.

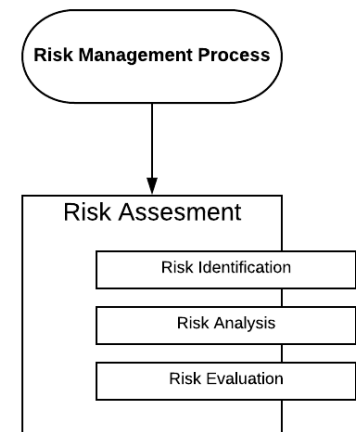


Figure 12 - Risk assessment phases

Some of the risks identified are evaluated in the following tables:

1. Low top-level management involvement risk	
Likelihood: 4/9	Support of Monash's management is important for successful outcome of the project. Support from top management is known to have positive influence on project success (Zwikael, 2008). They can provide expertise to help identify clear and realistic goals. Moreover, ability to deal with people, sustain relationships and good communication can be established with help of top management.
Impact: 5/9	Monash is a big university with many branches and departments. Top level management could lose the sight of project with their busy schedule. If this happens, then probability of the project going off-track and obtaining mistakes can be higher. Quantitative impact may result in project being delayed if the mistakes are found late and need to be corrected.
Evaluation	This risks score is 20. This risk can be easily mitigated by maintaining close relations with Monash's top management. Regular meetings and timely discussions could minimize this issue.

Table 8 - Low top-level management involvement risk

2. Low user involvement risk	
Likelihood: 6/9	Students might lose interest in the portfolio system for number of reasons. Some reasons are better alternative product from competitor, bad user experience design, time consuming signing-up process etc. Currently job crisis due to covid-19 is causing graduates lose focus on job application process.
Impact: 7/9	Monash is experiencing lesser domestic students taking up university courses due to covid-19 crisis. Closed borders drop number of international students' intake significantly and Monash might delay the execution of project if not enough users are available for the project. Quantitative impact could be project being pushed to later date and limited budget to work with.
Evaluation	The risks score is 42, this is a high concern. A possible strategy could be working with the approved budget and capturing student feedbacks to improve the portfolio design and software. Feedbacks might help us identify problems quicker and avoid going back to

	fix problems later (W3C, 2020). Moreover, informed decisions can be made by capturing feedback and avoid wasting time guessing or compromising later because of waiting too long to address problem.
--	--

Table 9 - Low user involvement risk

3. Poor leadership risk	
Likelihood: 4/9	Poor leadership can cause higher risk of failure. According to Toor & Ogunlana, wrongful use of power, poor communication and low experience are leading causes for making up poor leaders look incompetent and ineffective in project management (Toor & Ogunlana, 2009).
Impact: 6/9	Poor leadership can result in lack of planning and control, resources, synergy between goals and performance and higher management support.
Evaluation	The total score is 24. Strong leadership with honest communication can build a successful project. Laura Hume has reputation of being a good leader and successfully managing large projects. A 2-day leadership course can be assigned to Laura Hume to ensure she is prepared to handle the project team.

Table 10 - Poor leadership risk

4. Team conflicts risk	
Likelihood: 5/9	Conflicts and disagreements are evident in any team and they may arise on number of occasions. Our project involves many targets and milestones within limited timeframe, team members can easily become overwhelmed and stressed due to workload that could leading to conflicts.
Impact: 5/9	Project manager Laura Hume holds the final call in directing the project. If she does not commit to solving the problem within the team or stakeholders, there may be greater risk of failure. Conflicts can cause organizations large amount of money.
Evaluation	The total score is 25. Like risks, conflicts are evident in any team. A conflict resolution strategy could be in place to identify and diffuse the conflicts that may arise within or outside the project team. Ignoring conflicts might cause a greater harm eventually, therefore, it is best to address problems as they arise (Ray, 10 Conflict Resolution Strategies that Actually Work, 2018).

Table 11 - Team conflicts risk

5. Third-party dependency risk	
Likelihood: 5/9	Many areas of the project rely on numerous third-party applications. Our platform is built using Linked-in and deployed on Moodle platform of Monash university. Moreover, the cyber security space utilizes Monash's firewalls and security measures. High level of dependency can lead to higher project failure risks.
Impact: 7/9	Relying on third-party applications and software's means greater cyber-security risk. In addition to this, the impact can be heavy because if our supporting platform Linked-in or Moodle is down, student portfolio system is also jeopardized.
Evaluation	The total score is 35. This is significantly high score, certain strategies such as hiring cybersecurity professional if cyber-attack is experienced or software engineers if the portal is facing bugs. These solutions are not completely efficient however, they are cost effective measures.

Table 12 - Third-party dependency risk

6. Lack of financial support risk	
Likelihood: 6/9	Unforeseen circumstances can take place during the executions of the project that may exceed the budget by incurring costs. It is highly unlikely that Monash would approve extra project funding due to covid-19 crisis. An example of this situation could be hiring consultants or new team member if someone quits.

Impact: 7/9	Unforeseen risks may arise due to various reasons; these risks can increase the project costs or in some instances delay the project because project manager might need to get management approval for more funding.
Evaluation	The total score is 42. In order to mitigate this high risk, project manager has decided to keep a buffer budget to deal with unforeseen circumstances. This budget can help deal with numerous issues if a risk was realized.

Table 13 - Lack of financial support risk

12.1.1. Assessment methodology

We used a SWOT analysis to identify internal and external risks related to the projects. Internal strengths and weaknesses along with external opportunities and threats aid in identify potential risks. The benefits of using SWOT is it analyses the internal and external environment of the project while PESTLE is more focused on external threats. Pestle analysis is done in part 12.2.2.

Risk methodology used in assessment is identification, analysis (quantitative and qualitative) and evaluation. All risks mentioned in part 12.2 are analyzed inputs from project management plan (schedule management plan, cost plan, scope management plan), project documents (cost estimation, stakeholder register, issue log) and other factors.

These inputs were analyzed using tools and techniques such as expert judgement where top management were asked for advices and consultants were called for their opinions. Data gathering by team brainstorming possible risks, interviewing Monash IT team for identifying any history of risks. In addition to this, assumptions were used in “*what-if*” scenarios, SWOT and PESTLE analysis are also utilized to gather a sound understanding of risks involved.

The risk information outcome mentioned in section 12.2 are included in risk register and risk report.

12.1.2. Assessment Results

Figure 13 presents the PESTLE analysis, used to analyze the external environment.

P	E	S	T	L	E
Political -Governments concerns about <u>privacy and data protection policies</u> of user's information could harm the project.	Economical - Online job seeking industry is an oligopoly market. This means Linked-in could <u>increase subscription cost</u> , which could increase our project costs.	Social - Various issues such as student protests, increased level of unemployment from covid-19 etc. could mean that <u>students may lack trust and confidence in the portal</u> . This could negatively affect the projects if not enough students are interested in using it.	Technological - Our <u>portal depends on third-party platforms</u> such as Linked-in and moodle. Any disruption or cyber-breaches with these third-party platforms could mean that our project may be harmed.	Legal - Patents and copyright laws could harm the project if not executed properly. This would mean that we could be sued if it matches another product.	Environmental <u>A natural disaster or catastrophe may impede connection</u> to our servers. This could mean that our portal might be unavailable to users and our team to work.
Likelihood of occurrence would be 5/9	Likelihood of occurrence would be 5/9	Likelihood of occurrence would be 6/9	Likelihood of occurrence would be 8/9	Likelihood of occurrence would be 4/9	Likelihood of occurrence would be 4/9
Impact: 5/9 We may have to redesign how we store and use information.	Impact: 6/9 Higher subscription cost would mean cutting down cost in other areas. This might affect the quality. However, the chances of cost increasing within 12months is low.	Impact: 7/9 Monash might cancel the project if low interest from students.	Impact: 8/9 Cyber-security is a major concern and a lot of damage can be done if students data and information is stolen for wrong reasons. Monash's reputation could be affected.	Impact: 5/9 The impact could be delay in delivery of our project.	Impact: 7/9 Losing connection would mean that the work would be delayed.

Figure 13 - PESTLE analysis

12.1.3. Risk Response Plan

Figure 14 shows the next steps involved in controlling risks. The four main risk control strategies are to avoid, exploit, transfer/share, mitigate and accept. These strategies are used to develop an action plan to deal with risks assessed in section 12.2 and further explained in table below.

The unacceptable function in diagram suggests any risk that is complex and cannot be actioned, would need to be reassessed and further simplify in order to develop a necessary control strategy. In our scenario, third-party dependency risk was too vague, upon reassessing, separating cyber security risk was removed from it and stated as a new risk.

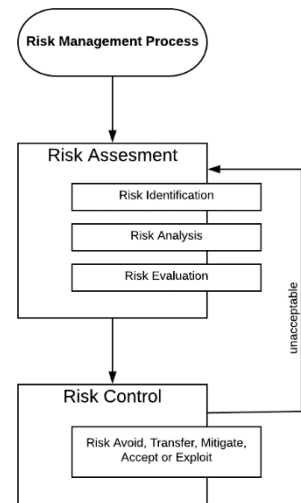


Figure 14 - Risk management process up to controls.

Risk	Response	Strategy
Low top-level management involvement	Avoid	Strategies to hold weekly meetings with top level management and stakeholders to keep them involved and updated.
Low user involvement	Mitigate	Capturing feedback and taking required action.
Poor leadership	Avoid	Provide training or change the project manager if required.
Team conflicts	Mitigate	Use conflict resolution strategies to diffuse the situations. Team building exercises to be implemented.
Third-party dependency risk	Accept	A contingency plan would include the Laura Hume (project manager) and Felix Carter (project sponsor) to immediately have a meeting within 4hours. Sarah Hill (cyber security specialist) can be included if required.
Cyber Security risk	Transfer	Monash's cyber security software's can be utilized along with other third-party software expert companies i.e. Norton
Lack of financial support	Accept	If this risk becomes an issue, a team meeting between Laura Hume and Felix Carter would be required to take place within 2 business days.
Privacy and data law risk	Mitigate	This risk can be mitigated by staying on top of the rules and regulations globally. Often governments give a reasonable timeframe to implement the change.
Increasing subscription cost risk	Accept	If this risk becomes an issue, the first step would be to negotiate with Linked-in to avoid costs. Last case scenario, a team meeting between Laura Hume and Felix Carter would be necessary withing 5 business days to form a decision.
Patent and copyright law risk	Transfer	These risks can be transferred to third-party organization. Mostly a lawyer or Monash's legal team.
Natural disaster risk	Accept	If this risk becomes an issue, Laura Hume would be required to take the final call on the best possible approach to deal with this issue.

Table 14 - Risk response strategies

12.1.4. Risk Management Delegation's Roles & Responsibility

The risk management delegation's roles and responsibility are illustrated in Table 15.

Person's Name	Risk Mgt Role and Responsibility	Risk Management Availability (%)	Contact details
Laura Hume	Low top-level management involvement	100%	0365865101/ 0478956478
Emma Jones	Low user involvement	100%	0365865104
Felix Carter	Poor leadership	100%	0365865100
Laura Hume	Team conflicts	100%	0365865101/ 0478956478
Emma Kane	Third-party dependency risk	100%	0365865102/ 0455878963
Sarah Hill	Cyber Security risk	100%	0365865103/ 0465241215
Laura Hume	Lack of financial support	100%	0365865101/ 0478956478
Sarah Hill	Privacy and data law risk	100%	0365865103
Jason Thompson	Increasing subscription cost risk	100%	0365865105
George Morgan	Patent and copyright law risk	100%	0365865104
Laura Hume	Natural disaster risk	100%	0365865101/ 0478956478

Table 15 - Risk management delegations

*Risk management availability (%) shows the percentage of risk individuals are responsible for. In the case of sick leaves, Laura Hume (project manager) will be responsible to manage the risk. Moreover, prior to planned leaves, it is the leave takers responsibility to inform the project manager so that the risk can be allocate to another person.

12.1.5. Risk Register Summary

Risk register is a document containing information of risks that could arise in a project life cycle and actions to take in case such a risk would become an issue. Risks are evident in almost everything we do; in project management we use risk register to create a plan for minimizing their impact on our project. We need a risk register to helps us in staying on top of issues that may result in risks becoming reality. It includes all information such as the person who owns it, nature of risk, steps to mitigate, level of risk and response actions. This information needs to be precise because in case a risk becomes an issue, people generally panic and find difficult to think clearly. By having a clear and precise risk register, when such risks are realized, it becomes easier to follow the protocols.

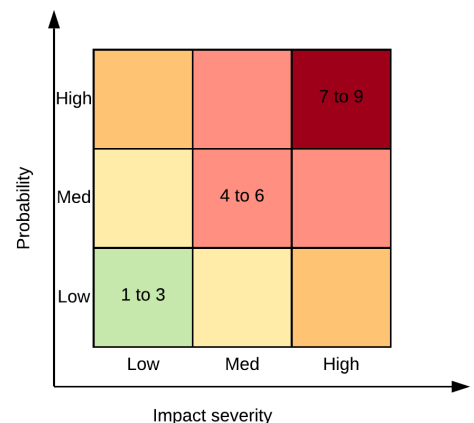


Figure 15 - Risk Matrix

Risk Management Plan Summary							Risk Occurrence Management					
Risk ID	Risk Statement	Risk Owner	Risk Probability 1-9	Risk Impact 1-9	Risk Score	Risk Response Strategy	Revised Risk Probability	Revised Risk Impact	Revised Risk Score	Risk Response Actions	Risk Status	Comments
101	Low top-level management involvement	Laura Hume	4	5	20	Avoid	1	3	3	Improve communication strategies	Solved	
102	Low user involvement	Emma Jones	6	7	42	Mitigate	3	3	9	strategies to increase number of users	Almost Solved	
103	Poor leadership	Felix Carter	4	6	24	Avoid	1	2	2	Training and learning provided	Solved	
104	Team conflicts	Laura Hume	5	5	25	Mitigate	3	3	9	Weekly teambuilding games and exercises	Almost Solved	
105	Third-party dependency risk	Emma Kane	5	7	35	Accept	5	7	35	Choosing reputable companies to work with	Most risk remains	Difficult to predict and mitigate
106	Cyber Security risk	Sarah Hill	6	7	42	Transfer	3	2	6	Choose reputable companies to work with	Some risk remains	
107	Lack of financial support	Laura Hume	4	7	28	Accept	4	7	28	Strategies to cut costs and increase buffer	Most risk remains	Action depends on situation
108	Privacy and data law risk	Sarah Hill	5	5	25	Mitigate	2	2	4	Create templates to easily implement if laws change	Almost Solved	
109	Increasing subscription cost risk	Jason Thompson	5	6	35	Accept	5	6	35	Create small budget buffer incase the costs increase	Most risk remains	Can be negotiated
110	Patent and copyright law risk	George Morgan	4	5	20	Transfer	1	2	2	Choose reputable and trusted lawyers	Solved	
111	Natural disaster risk	Laura Hume	4	7	28	Accept	4	7	28	Strategies for working remotely or replacing team members	Most risk remains	Difficult to predict and mitigate

Table 16 - Risk management summary

13. Recommendation & next step

If the project plan gets approved, we hope that Monash University can provide a series of actions to help our plan conduct better. In this section, we provide some recommendations that can better advance our project.

First, we hope that Monash University can provide us with good help in gathering requirements. Requirements are a very important part for the project's succession. Not only can it influence the functional requirements of the software itself, but it also provides great help in managing the project, so that the project team can reduce the number of changes to the plan, reduce project costs or avoid unnecessary expenditure. And in this gathering requirements, Monash University can help us easily achieve it at almost no cost.

According to the discovery of Brace & Proquest (Brace & Proquest, 2018), a questionnaire is the most common way to collect requirements, and it can bring many benefits. First, this method is very convenient. In schools, it is feasible to officially release some questionnaires, and the cost will not be high. Second, there will be certain coverage in terms of stakeholders and the software itself. Most people who do this survey will also be users of the software, so the accuracy of the information obtained will also be guaranteed. Third, the data model obtained is complete, because the questionnaire covers all students of Monash University, then there comes a huge amount of data so that we can get the data we want from big data.

Furthermore, we hope that Monash University can recruit some students who have used related software to help us testing. In our WBS, a considerable part of the work is related to testing, we do not want to re-debug or have some dissatisfaction after the software is officially launched. According to the schedule, we will have a month to testing. During this month, if there are students, also be the future software users can help us, it will very good for the project itself.

Finally, we hope to get more suggestions from other planning groups, as other students have made a similar project plan. I believe that each group will have its ideas. For example, our group has also made some assumptions that are conducive to the project. These ideas or assumptions are useful to risk management and it will be of great help to prevent problems that can be foreseen and avoided in the future. A perfect and excellent plan is based on everyone's ideas. It is difficult to make a flawless plan by relying on the power of a small group.

These recommendations are what we hope the school will do for us through our plan, and its purpose is to better promote the project.

14. Submission checklist

The submission check list is based on the assignment description. A table is made to illustrate the correlation with our project sections:

Assignment description section	Our report section
1. Introduction in terms of references	Section 1: Introduction in terms of references
2. Project objective/s & constraints	Section 2: Project objectives and constraints
3. Project methodology	Section 3: Project methodology
4. Project governance framework	Section 4: Project governance framework
5. Project team structure	Section 5: Project team structure
6. Scope management plan	Section 6: Scope management specification
7. People management	Section 7: Stakeholder analysis Section 8: Project communication management plan Section 9: Human resource training plan
8. Project schedule management plan	Section 10: Project schedule management plan
9. Project cost management plan	Section 11: Cost management plan
10. Project risk management plan	Section 12: Project risk management plan
11. Recommendation	Section 13: Recommendation & next step
12. Submission check list	Section 14: Submission checklist
13. References	Section 15: References
14. Project management documentation	Section 16: Project management documentation

15. References

- [1] Abran, A. (2015). Software Project Estimation: The Fundamentals for Providing High Quality Information to Decision Makers (pp. 65-69). <https://doi.org/10.1002/9781118959312>
- [2] Brace, I., & ProQuest. (2018). *Questionnaire design : how to plan, structure and write survey material for effective market research* (Fourth edition.).
- [3] Chalmers, L. (2008). Using It in Work at Home: Taking a Closer Look at IT Use in Home-Located Production. *New Technology, Work and Employment*, 23(1-2), 77–94. Retrieved from: <http://search.proquest.com/docview/57249265/>
- [4] Chung, E. (2017, April 20). *Contingency Reserve vs Management Reserve for PMP Exam*. Retrieved from [https://edward-designer.com/: https://edward-designer.com/web/contingency-reserve-vs-management-reserve-for-pmp-exam/](https://edward-designer.com/:https://edward-designer.com/web/contingency-reserve-vs-management-reserve-for-pmp-exam/)
- [5] Lucidchart (2019). How to Create a Project Management Communication Plan. Retrieved May 20, 2020, from <https://www.lucidchart.com/blog/project-management-communication-plan>
- [6] Meyer, W. G. (2016). Estimating: the science of uncertainty. Paper presented at PMI® Global Congress 2016—EMEA, Barcelona, Spain. Newtown Square, PA: Project Management Institute.
- [7] Project Management Institute. (2014). *A guide to the project management body of knowledge (PMBOK guide)*. Newtown Square, Pa: Project Management Institute.
- [8] Rad, P. F. (2002). Project estimating and cost management
- [9] Ray, S. (2018, October 16). *10 Conflict Resolution Strategies that Actually Work*. Retrieved from ProjectManager: <https://www.projectmanager.com/blog/conflict-resolution-strategies>
- [10] Ray, S. (2017, October 19). *The Risk Management Process in Project Management*. Retrieved from PROJECTMANAGER: <https://www.projectmanager.com/blog/risk-management-process-steps>
- [11] Schwalbe, K., & ProQuest. (2016). Information technology project management (Eighth edition.).
- [12] Snyder, C. S. (2013). *A project manager's book of forms a companion to the PMBOK guide, fifth edition* (2nd ed.). Hoboken, N.J.: Wiley.
- [13] Stede, W.A. (2011, January). Scenario Budgeting: Integrating Risk. Finance & Management.
- [14] Toor, S. u.-R., & Ogunlana, S. (2009, May 1). *Ineffective leadership: Investigating the negative attributes of leaders and organizational neutralizers*. Retrieved from emralsinsight: <https://www.emerald.com/insight/content/doi/10.1108/09699980910951663/full/htm>
- [15] W3C. (2020). *Involving Users in Web Projects for Better, Easier Accessibility*. Retrieved from Web Accessibility Initiative: <https://www.w3.org/WAI/planning/involving-users/>
- [16] Zwikael, O. (2008). Top management involvement in project management, A cross country study of the software industry. *Victoria University of Wellington, New Zealand*, 1-15.

16. Project management documentation

An agenda containing responsibility structure, deadlines, and status/documentation overview is made based on the provided deliverables table presented in the assignment description. An extra status field is added to cover the 'status report', thus section 14.3 given in the assignment description is merged into this given table.

People responsible	Deliverables and deadlines	Weekly documentation/ status
Week 1 – Deadline: 1 st of May		
Mathilde	Section 1: Introduction in terms of references Section 2: Project objectives and constraints	The sections have been completed, but with some delay, as it was difficult making the governance without the team structure and stakeholder analysis
Qian	Section 3: Project methodology	
Swapnil	Section 4: Project governance framework	
Trilochan	Section 5: Project team structure	
Week 2 – Deadline: 8 th of May		
Mathilde	Section 6: Scope management specification	The sections have been completed. Some detailed sections were delayed, as clarification was needed for finalizing.
Qian	Section 7: Stakeholder analysis findings	
Swapnil	Section 8: Project communication management plan	
Trilochan	Section 9: Human resources requirement and training plan	
Week 3 – Deadline: 15 th of May		
Mathilde	Section 10: Project schedule management plan	Large parts of this week's deliverables have been delayed. This may cause by the content of the deliverables which is considered to be more difficult.
Qian	Section 11: Project management plan	
Trilochan	Section 12: Cost methods applied	
Swapnil	Section 13: Project risk management plan	
Week 4 – Deadline: 22 nd of May		
Mathilde	Section 17: Project documentation	Large parts of these deliverables have been done throughout the project, thus not much editing time has been needed.
Qian	Section 15: Submission checklist	
Trilochan	Section 16: References	
Swapnil	Section 14: Recommendation & next step	

Table 17 – Agenda

16.1. Meeting Records (Agenda and Minutes)

FIT5057 - Minutes of Meeting		
Meeting No:	1	
Location:	Zoom meeting	
Attending:	Mathilde, Swapnil, ThriloChan, Qian	
Apologies:		
Issue raised from previous minutes	Discussion	Outcome (Resolved?)
	Planning meeting schedule - minimum 2 hours every week including text when needed	
	Planning deadlines	
	Devide deadlines - making everyone in charge (beeing expert) of different sections	
	Parring teams for sparring and proofreading	
Confirmation of minutes from previous meeting:	YES	NO

FIT5057 - Minutes of Meeting		
Meeting No:	2	
Location:	Zoom meeting	
Attending:	Mathilde, Swapnil, ThriloChan, Qian	
Apologies:		
Issue raised from previous minutes	Discussion	Outcome (Resolved?)
Did the last implementation work?	Need to implement pairs 'on-the-go' as it is difficult to schedule with deadlines for other units. We need to communicate more frequently to make this work.	yes
	We did not meet the deadline completely due to other assignments.	yes
	We did not take into accounts that some topics may require more time	yes
	We acknowledge that next week deadline will require more time and may be difficult to meet.	yes
Confirmation of minutes from previous meeting:	YES	NO

FIT5057 - Minutes of Meeting		
Meeting No:	3	
Location:	Zoom meeting	
Attending:	Mathilde, Swapnil, ThriloChan, Qian	
Apologies:		
Issue raised from previous minutes	Discussion	Outcome (Resolved?)
Did we meet the deadline?	Almost. It was a bit difficult as the sections are difficult to finish individually.	yes
	We will use more time together before deadline to finish the sections	yes
	There is currently a high work load with other units. So it is important to keep the deadlines to ensure other deliverables.	yes
	We need to ask more questions when talking to Stephen, clarifying questions.	yes
Confirmation of minutes from previous meeting:	YES	NO

FIT5057 - Minutes of Meeting		
Meeting No:	4	
Location:	Zoom meeting	
Attending:	Mathilde, Swapnil, ThriloChan, Qian	
Apologies:		
Issue raised from previous minutes	Discussion	Outcome (Resolved?)
	We need to compare structure and remeber to ask critical questions to eachoter	yes
	Allocating time could be improved	yes
	We have allocated 3 days in next week for the final sprint to ensure high quality	yes
	We have achived all deadlines and report have a nice structure	yes
Confirmation of minutes from previous meeting:	YES	NO

FIT5057 - Minutes of Meeting		
Meeting No:	5	
Location:	Zoom meeting	
Attending:	Mathilde, Swapnil, ThriloChan, Qian	
Apologies:		
Issue raised from previous minutes	Discussion	Outcome (Resolved?)
Are we critical egnough?	We are all satisfied with the outcome	yes
	Mathilde is allocated to do the final proof-reading	yes
	Swapnil, ThriloChan and Qian are finishing the rest of the report	yes
	We are submitting the report together	yes
Confirmation of minutes from previous meeting:	YES	NO

16.2. Weekly MS Project Timesheets

Team Member's Name: Thrilochan			
Date	Description of the activity you have worked on	Actual Hours	Running Total
Week 1	Section 5	8,00	8,00
Week 2	Section 9	8,00	16,00
Week 3	Section 12	8,00	24,00
Week 4	Finalizing	10,00	34,00
Week 5	Proofreading and signoff	14,00	48,00

Team Member's Name: Swapnil			
Date	Description of the activity you have worked on	Actual Hours	Running Total
Week 1	Section 4	8,00	8,00
Week 2	Section 8	8,00	16,00
Week 3	Section 13	8,00	24,00
Week 4	Finalizing	10,00	34,00
Week 5	Proofreading and signoff	14,00	48,00

Team Member's Name: Qian			
Date	Description of the activity you have worked on	Actual Hours	Running Total
Week 1	Section 3	8,00	8,00
Week 2	Section 7	8,00	16,00
Week 3	Section 11	8,00	24,00
Week 4	Finalizing	10,00	34,00
Week 5	Proofreading and signoff	14,00	48,00

Team Member's Name: Mathilde			
Date	Description of the activity you have worked on	Actual Hours	Running Total
Week 1	Section 1 + 2	8,00	8,00
Week 2	Section 6	8,00	16,00
Week 3	Section 10	8,00	24,00
Week 4	Finalizing	10,00	34,00
Week 5	Proofreading and signoff	14,00	48,00