INF6001 INFORMATION SYSTEMS PROJECT MANAGEMENT

Individual Report

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Executive Summary

The report includes a risk management plan, a quality management plan and an implementation and project closure plan. Risks (e.g., unclear requirements) are identified, documented and mitigated in the risk management plan through risk matrix and risk register. Ten milestones for quality assurance validation are listed in the quality management plan. The advantages and disadvantages of waterfall development, the advantages and disadvantages of the outsourcing model for this project, the reasons for using direct cutover, types of closure, outline for the project evaluation are described in the implementation and project closure plan.

Risk Management Plan

Risk Matrix

ID	Risk	Chance	Severity	Total risk (C x S)
1	Recruitment of outsourced staff takes longer than expected	1	3	3
2	Unclear requirements	2	5	10
3	Staff departures before the end of the project	1	4	4
4	Team conflicts	2	2	4
5	Larger than expected workload	1	3	3
6	Overspend	1	5	5
7	Client dissatisfaction with the delivered product	1	5	5

Risk Register

ID	List each major risk facing the project. Describe each risk in the form "condition – consequence".	P	L	E	First Indicator	Mitigation	Responsible	Mitigation implementation date

1	The recruitment of outsourced staff took longer than expected, resulting in the project not starting on time.	1	3	3	When recruitment of outsourced staff takes more than half the expected time and there are still no applicants	More recruitment channels; Early recruitment; Extension of recruitment time	Mr. Tony Stark (Project Manager)	20/05/2023
2	The client is vague about their needs or the customer cannot express their needs accurately so the product does not meet expectations.	2	5	10	Obtaining requirements with ambiguous client needs	Double-checking details; Complete the functional design and give it to the client for confirmation	Mrs. Natasha Romanolf (Business Analyst)	05/06/2023; 07/08/2023
3	Staff departures before the end of the project, resulting in disruption to the project schedule.	1	4	4	Employees expressing a preference for leaving	Focus on employee satisfaction and needs;	Mr. Tony Stark (Project Manager)	10/05/2023
4	Outbreaks of team conflict lead to reduced team cohesion and affect the quality and progress of work.	2	2	4	Quarrels arise between staff.	Regular group building; Reasonable mediation	Mr. Tony Stark (Project Manager)	10/05/2023; When the first indicator appears
5	A larger than expected workload results in a lot of work for everyone, which both increases overtime expenses and potentially decreases employee satisfaction.	1	3	3	Daily progress was found to be below the expected average progress	Recruitment of interns; A more reasonable prognosis	Mr. Tony Stark (Project Manager)	15/05/2023; 10/05/2023
6	Overspending leading to inability to pay staff, which in turn leads to staff leaving.	1	5	5	Higher than expected expenditure identified in the cost control and monitoring	Setting reserves; A more reasonable prognosis	Mrs. Natasha Romanolf (Business Analyst)	10/05/2023

					process			
7	Client dissatisfaction with the delivered product leading to rework.	1	5	5	The client expressed dissatisfaction when the product was delivered.	Adequate and quality requirements analysis; Explain the development progress to the client at each milepost	Mrs. Natasha Romanolf (Business Analyst)	05/06/2023

1. The total risk of recruitment of outsourced staff taking longer than expected is 3. This risk can arise in the phase of project initiation. When drafting the project charter, an advance check of the recruitment of programmer positions in Sheffield on the recruitment website revealed that there were not many programmer positions available in Sheffield, meaning that Sheffield may not have a sufficient pool of programmers. This may have resulted in an inability to recruit the required outsourced programmers within the required ten days. There is a small chance that this risk will lead to project delays. So consider using more recruitment channels when conducting recruitment campaigns and consider non-local programmers to complete outsourced work via online when the first indicator comes up.
2. The total risk of unclear requirements is 10. This can lead to abstract and misunderstood initial requirements (Theo, Carsten & Martin, 2021). This risk can arise during the project planning phase. As it can lead to very serious consequences (e.g. rework and project delays), it should be taken very seriously and monitored. When it is found that the client is unclear about the requirements or is unable to express them accurately, the details should be repeatedly confirmed. Once the functional design has been completed, the client should be approached again to confirm that the requirements are met, so that the product does not meet the client's expectations at the time of acceptance.
3. The total risk of staff departures is 4. This risk can occur at any phase of a project, but is most serious when it occurs during the project execution phase. The specialist nature of the developer's skills means that when a developer leaves, they cannot be replaced immediately by another person and a new developer needs to be recruited, which can lead to project delays. However, the risk of staff leaving is somewhat mitigated by the use of waterfall development, according to Theo, Carsten & Martin (2021), where the development process is well documented and new staff are

able to work quickly from records. However, project managers should still pay enough attention to staff satisfaction and needs to create as good a working atmosphere as possible to ensure that the project runs smoothly.

4. The total risk of team conflicts is 4. This risk can also arise at any phase of a project. It can lead to project delays or lower than expected product quality. Although this is a common and unavoidable risk, there are still steps that project managers can take to mitigate it. Project managers can conduct regular group building activities to enhance the relationship between staff and promote staff communication and mutual understanding. When conflicts erupt, the project manager should promptly and reasonably mediate to avoid enlarging the conflict.
5. The total risk of larger than expected workload is 3. This risk is most likely to occur during the project execution phase, as this is the phase with the highest workload (involving product development). If the daily progress is lower than expected, increasing the workload of existing staff may reduce staff satisfaction, and if not increasing the workload may lead to delays. The project manager should adequately and reasonably anticipate the workload when drafting the project charter and, if possible, recruit an intern to share the pressure on the staff without increasing the overheads and to act as a back-up human resource to cover the work when the staff member leaves.
6. The total risk of overspend is 5. This risk may arise during the cost monitoring and control phase. Although it is unlikely to occur, it can have serious consequences such as stalling the project. Adequate and reasonable cost estimates should be made when drafting the project charter, and reserves should be set aside.
7. The total risk of client dissatisfaction with the delivered product is 5. This is almost the most serious potential risk of waterfall development. If it does happen, rework and huge losses are inevitable, so it should be avoided at all costs (Moira, 2020). However, waterfall development is not well equipped to deal with this risk and lacks the ability to identify deviations and correct them in a timely manner, so the only way to ensure that the final product meets the client's expectations is through the best possible analysis of requirements and by explaining the development progress to the client at each milepost.

Quality Management Plan

ID	Milestone	Deliverable	Quality Assurance Validation	Additional Overhead Tasks
1	Project Charter Signoff	Project Charter Document	Confirmation of scope, budget, possible team and resources required, and signature by client.	Meeting at the client's location

2	PID Drafted	Project Initiation Document	Identify the background, scope, business case, risks and information about the team, business case, risks and team members and have it signed by the client.	Meeting at the client's location
3	Kickoff Meeting	Conduct Project Kickoff & Project Kickoff Minutes of Meeting	Conclusion of team induction; Start of project; Identification of stakeholders involved, points of contact, and communication channels; Stakeholder sign-off of meeting minutes.	Stakeholders meeting
4	Requirement Signoff	Requirement Document; Blueprint Document	The system was designed using these two documents as guidelines to begin with; The client must sign the document to ensure they agree to the requirements of the SoftEng collection.	Meeting at the client's location
5	Functional Design Signoff	Functional Design Document	Completed the design of the functional requirements, use cases, logic specifications, and test plan sections; The client signs this document to ensure they agree with SoftEng's design.	Meeting at the client's location
6	Technical Design Signoff	Technical Design Document	Completed designs on data types, required structures, detailed class models, specific algorithms and physical	Meeting at the client's location

			data model sections; The client signs this document to ensure they agree with SoftEng's design.	
7	Testing Signoff	QA Test Doc; Regression Test Doc; UAT Doc; UAT Regression Doc; Security Test Doc	Several documents provided evidence of tests are getting passed (the example: snapshots) and need to be approved by the client. The project manager is monitoring each part of testing to have control over the development process. Specifically, the QA test doc contains results on: -UI QA test obtained on 24th Nov 23 -ETL QA Test obtained on 18 Dec 23 -Functionality QA test obtained on 21 Mar 2024 -Integration QA obtained on 04 Mar 24. -Data Migration QA obtained on 01 Apr 23	Meeting at the client's location
8	Go Live / System Switched	Information Systems (the application)	The System is available to use by the users.	Delivery of the initial version of the system
9	Handover signoff	User Manual (Guideline); Operational Document; Training Conducted; Handover Document	These deliverables are needed as a benchmark for users or the operational team to run the system. Each document needs to be signed off by the client, which means the client	Meeting at the client's location

			agrees with the documents.	
10	Signoff Project Done	Project Closure Report	This document provides information about the project, goals, overview, project accomplishment, project lesson learned, and also recommendation for the next project. By signing off this document, the project is completely done.	Meeting at the client's location

Based on the use of a waterfall development approach with no iterative update process, to ensure that the product meets the client's requirements as closely as possible during development, according to Fagarasan et al. (2021), we will 1) increase the cost of early requirements acquisition and analysis and 2) set ten milestones for the entire development process and 3) deliver relevant materials for client validation and sign-off at each milestone.

1. Reaching the milestone Project Charter Signoff requires the delivery of a Project Charter Document which identifies the scope, budget, possible teams and resources required and is signed by the client.
2. Reaching the milestone PID Drafted requires the delivery of a Project Initiation Document which identifies the background, scope, business case, risks and information about the team, business case, risks and team members and is signed by the client.
3. Reaching the milestone Kickoff Meeting involves Conduct Project Kickoff and delivering the Project Kickoff Minutes of Meeting, which signifies the end of the team induction and the start of the project, and identifies the stakeholders involved, points of contact and communication channels, and is signed off by the stakeholders.
4. Reaching the Milestone Requirement Signoff requires the delivery of Requirement Document and Blueprint Document. The design of the system starts with these two documents as guidelines, which the client must sign to ensure they agree to the requirements collected by SoftEng.
5. Reaching the milestone Functional Design Signoff requires the delivery of Functional Design Document, which documents the design of the functional requirements, use cases, logic specifications and test plan sections, and which the client signs to ensure they agree with SoftEng's design.
6. Reaching the milestone Technical Design Signoff requires the delivery of Technical Design

Document which documents the design of the data types, required structures, detailed class models, specific algorithms and physical data model sections, which the client signs to ensure they agree with SoftEng's design.

7. Reaching the milestone Testing Signoff requires the delivery of QA Test Doc, Regression Test Doc, UAT Doc, UAT Regression Doc and Security Test Doc. Several documents provided evidence of tests are getting passed (the example: snapshots) and need to be approved by the client. The project manager is monitoring each part of testing to have control over the development process.
8. Reaching the milestone Go Live / System Switched requires the delivery of Information Systems (the application), which means that the system is available to users.
9. Reaching the milestone Handover signoff requires the delivery of User Manual (Guideline), Operational Document, Training Conducted, Handover Document. These deliverables are needed as a benchmark for users or the operational team to run the system. Each document needs to be signed off by the client, which means the client agrees with the documents.
10. Reaching the milestone Signoff Project Done requires the delivery of Project Closure Report. This document provides information about the project, goals, overview, project accomplishment, project lesson learned, and also recommendation for the next project. By signing off this document, the project is completely done.

Implementation and Project Closure Plan

Strengths and Weaknesses of the SDLC Method

The project proposes to use a waterfall development approach because of the following advantages:

1. Overall planning in advance, with stability and a long-term perspective. The project's needs are clearer and less prone to change, so the objectives are clearer, so the project can be executed precisely with the objectives and the overall plan in mind (Theo, Carsten & Martin, 2021).
2. Documented plans. The need for documentation and quality documentation is very important to the success of a project (Theo, Carsten & Martin, 2021). In addition, because of the high turnover rate of KnowHow, good documentation can also help with job transition.
3. The scope of the project is clear. There may be predictable evolutions, but it is not prone to large risks.
4. The division of labour and responsibilities of employees is clear. These can be easily monitored and managed by a Gantt chart reflecting the daily workload of each person.
5. Suitable for small to medium sized projects. The project is relatively small and can be completed relatively quickly with waterfall development, and even if there are non-conformities, the cost of reworking a small to medium sized project is less (Fagarasan et al., 2021).

However, there are undeniable disadvantages to the waterfall approach to development:

1. Due to its sequential nature, development is slow and less flexible, and later phases depend on the completion of earlier phases (Moira, 2020).
2. If there are abstract and misunderstood initial requirements, this can lead to incorrect assumptions in the planning process and bias future projects (Theo, Carsten & Martin, 2021).
3. Poor ability to correct deviations. Failure to identify and correct deviations in a timely manner can lead to significant losses when they are eventually delivered.

If we choose agile development, we should divide the functional modules for the project in the initial phase, and use the development of functional modules as a cycle for design, development, testing, presentation and consultation. And increase the frequency of communication with customers to capture their changing needs and their suggestions and comments on the product as quickly as possible.

Strengths and Weaknesses of the Outsourcing Model

The project proposes to use outsourcing stages to complete parts of the project planning phase, the project execution phase and the project monitoring & controlling phase, which includes requirements analysis, front-end development, back-end development, testing and cost control, etc.

This outsourcing model has the following advantages (Ashish & Manas, 2021):

1. Cost savings. Time costs for staff recruitment, internal management and communication can be saved. Reduces compensation costs associated with changes in staff additions and deletions.
2. Enables flexible employment. The ability to address the apparently ad hoc use of labour during project development (e.g. the system development time for this project was only one third of the total time).
3. Helping to overcome technical barriers. Outsourcing can meet ad hoc technical requirements arising from the specific needs of the project.
4. Outsourcing to undertake non-core processes facilitates focus on core business.

There are, of course, disadvantages to this outsourcing model:

1. The absence of a specific developer can lead to variable development quality.
2. There is a risk of leakage of business information and system information.
3. Lack of cohesion and working understanding between outsourced and non-outsourced staff.

Type of Release

The project is proposed as a one-off replacement system using direct cutover. Firstly, because the project developed a completely new system and did not have an old system to compare with in parallel, the parallel delivery type was not used. Secondly, the project was developed in a waterfall style, which was not conducive to running in modular deliveries, so a phased delivery type was not used.

Types of Closure

Normal: The project ended on schedule and the system was delivered to the client.
Premature: Early delivery requested by client.
Perpetual: Project runaway due to delays, lack of funding.
Failed: Delivering products that do not meet customer expectations.

Outline for the Project Evaluation

- Completed system against requirements, quality targets
- Changes in project requirements, schedule, budget
- Member Performance
- Updating the organisational knowledge base
- Updating the risk register
- Comments on the client
- Reflection

References

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