# INF6001 INFORMATION SYSTEMS PROJECT MANAGEMENT

## Group Report

**Group Number: 5**

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**Word count: 2176**

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**Executive Summary**

The current project has been planned for 18 months with the scope involving an IT system that includes a front-end web page enabling data entry, data retrieval, functionality to assign projects and email services, and a back-end database in the cloud. A total of 6 members will be involved from SoftEng led by Mr. Tony Stark, the Project Manager.

The project starts on 10th May 2023 and the project sign-off is scheduled on 6th Nov 2024, and the expected budget is 264,350 pounds. The project is to undertake a waterfall methodology of development and therefore changes in requirements might lead to cost and scope creep risks. Formal meetings are scheduled weekly between KnowHow and SoftEng to track progress. Key deliverables of the project are the Information system(The application) , Project Charter document. PID, kickoff meeting, requirement document, blueprint document, system and technical design document, testing documents, training, manual user guide documents, handover documents and project closure documents.

**Project Charter**

KnowHow Enterprises is a company that specializes in customized intermediary services to research and innovation projects with respect to dissemination and communication activities. They are faced with the problem of a lack of information sharing and archiving resulting due to factors such as attrition of employees. They are looking to develop an IT system to tackle this project.

This report will have the Project Charter, Scope Management Plan, and Detailed Project Plan for undertaking the project by our firm, SoftEng. The project duration has been agreed upon for 18 months between the General Manager of KnowHow, Mrs. Anne Gerbot, and Mr. Nick Fury, the Head of Delivery of SoftEng.

The project will be led by the Project Manager, Mr. Tony Stark, and the Lead Technology System Architect, Mr. Steve Rogers. The IT system is expected to help KnowHow employees keep a record of each project, including contact details, drafts, and transcripts. The general manager should be able to assign work to the staff and input relevant details regarding future opportunities and an emailing system for the employees to connect with the clients. Hence the scope of the project would include the development of a front-end web page enabling data entry, data retrieval, functionality to assign projects and email services, and a back-end database.

Based on the requirements, considering the reduced budget and an opportunity to expand in the future, the database system will be hosted on the cloud. We suggest AWS cloud services to develop the system due to the following reasons (Laurent, 2023)

1. Low operating cost: fit for small and medium-scale businesses.
2. Scalability of services on demand
3. Pay-as-you-use model of billing.
4. Built safety and security.

5. AWS is the market leader in updating cloud technology with time, hence trust in the continuity of services in the future at the best prices possible and has a good support and maintenance service (Felix, 2023).

Software license, hardware acquisition, further addition of features, and maintenance or expansion of the IT system, including AWS cloud-related changes, will be out of scope.

Based on the requirements and the technology of choice, the team will consist of a front-end developer and a back-end developer who will be outsourced. We will have a Quality Assurance lead working independently to maintain the quality of the product. A business Analyst will be outsourced and will be working in the initial and final stages of the project to develop use cases (Glassdoor, 2023). The outsourced employees are billed 20 days a month daily, and full-time employees are billed 28 days a month.

General Project Information

| Project Name | Project Manager | Project Sponsor |
|---|---|---|
| KnowHow IS | Mr. Tony Stark | Mrs. Gerbot |
| Contact email | Project Team Members (name and role) | |
| Tony.Stark@softeng.com<br>Gerbot@knowhow.com | Project Manager - Mr. Tony Stark<br>Lead system architect - Mr. Steve Rogers<br>QA Lead Engineer - Mr. Peter Parker<br>Front End Developer - Mr. Clark Kent (Outsourced)<br>Back End Developer - Mr. Bruce Wayne (Outsourced)<br>Business Analyst - Mrs. Natasha Romanolf (Outsourced) | |

| Estimated Costs | Expected Start Date | Expected Completion Date |
|---|---|---|
| 264,349.25 GBP | 10th May 2023 | 6th November 2024 |

Project Overview

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| Problem | The high staff turnover over the last five years has led to the lack of a way to store information and knowledge, which has led to a lack of knowledge and business continuity in the company, which in turn has led to a loss of customer and project information. |
| Purpose | The objective of the information system is to make entry, storage, and retrieval of information and files regarding their clients and their project to improve information sharing. The system should also enable work allocation to employees and email services. |
| Key Milestones | Project Charter Signoff<br>PID Document Signoff<br>Requirement Signoff<br>Functional Design Document Signoff<br>Technical Design Document Signoff<br>Testing Signoff<br>Go Live System/System Switched<br>Handover Signoff<br>Project Closure Signoff |

Project Scope

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|---|---|
| Within scope | Frontend web page: enabling data entry, data retrieval. Functionality to assigning projects and email services<br>Backend: File storage in cloud,relational database in cloud and ETL pipelines in cloud.<br>Documentation, Training, and handover. |
| Outside scope | Hardware procurement, software license, additional requirement & functionalities, future changes in AWS. |
| Expected Deliverables | Project Charter Document.<br>Project Initiation Document.<br>Kickoff Meeting & Minutes of Meeting from Kickoff.<br>Requirement Document.<br>Blueprint Document.<br>Functional Design Document.<br>Technical Design Document.<br>QA Test Document.<br>Regression Test Document.<br>UAT Document.<br>UAT Regression Document.<br>Security Test Document.<br>Information System (The Application).<br>User Manual (Guideline).<br>Operational Document. |

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|---|---|
| | Training.<br>Handover Document.<br>Project Closure Report. |

Resources

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|---|---|
| Project Team | Mr. Tony Stark, Mr. Steve Rogers, Mr. Peter Parker, Mr. Clark Kent, Mr. Bruce Wayne, Mrs. Romanolf |
| Support Resources | SoftEng Admin, Client Point of Contact, AWS cloud licensing, AWS support services, Microsoft Teams, Jira. |
| Others | |

Cost

| Cost Type | Rate (monthly) | Quantity | Duration (Working Days) | Total amount (in GBP) |
|---|---|---|---|---|
| PM | 4137 | 1 | 504 | 74466 |
| System Architect | 5402 | 1 | 504 | 97236 |
| QA Engineer | 2582 | 1 | 114 | 9811.6 |
| frontend engineer | 1647 | 1 | 284 | 23387.4 |
| backend engineer | 2917 | 1 | 243 | 35441.55 |
| Business Analyst | 2083 | 1 | 64 | 6665.6 |

| | | | | |
|---|---|---|---|---|
| Amazon S3 | 60.93 | 1 | 420 | 853.02 |
| Amazon Redshift | 523.49 | 1 | 420 | 7328.86 |
| Amazon Athena | 240.61 | 1 | 420 | 3368.54 |
| Amazon Glue | 0.11 | 1 | 420 | 1.54 |
| Amazon Workflows for Apache Airflow | 363.51 | 1 | 420 | 5089.14 |
| Overhead Cost | 700 | | | 700 |
| Total costs | | | | 264349.25 |

Risks and Constraints

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|---|---|
| Risks | Organisation:<br>Upper management change in KnowHow.<br>Team members of SoftEng resigned during the project development phase.<br>Approvals:<br>Failure to get Project plan, budget, Requirement document, System Design, Technical Design, Test results, and User Acceptance testing approved.<br>Requirements:<br>Unclear requirements by the client.<br>Incorrectly defined requirement.<br>Over expectations from the technology.<br>Inefficient user cooperation. |

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|---|---|
| | Creeps:<br>Cost creep.<br>Scope creep.<br>Technology:<br>Drastic updates and changes to technology which may lead to skill shortages and basic build changes (Shan et al., 2010). |
| Constraints | Budget constraints ( client has limited budget )<br>Relocating outsourced employees to the central office in Sheffield.<br>There are further use cases for which an IT system can be deployed in KnowHow since the business involves outreach for researchers but the current scope is limited. (Mai, 2018). |
| Assumptions | There won't be changes to the agreed-upon requirements for the Information system to be developed.<br>There won't be changes to the time available for completing the project of 18 months.<br>Outsourced employees meet qualification standards set by the client.<br>There won't be a drastic update to the technology used for the development of the Information System during the project. |

Prepared by:

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|---|---|
| Prepared by [Tony Stark/Project Manager] | Date 1st May 2023 |
| Approved by [General Manager /Anne Gerbot ] | Date 2nd May 2023 |

**Scope Management Plan**

We propose to adopt a waterfall approach for the project because:

- The Requirements are clearly defined, and the client is less prone to change to the requirements.
- The timeline is fixed.
- The project is relatively small.
- The customers don't seem to have enough IT knowledge and hence have less involvement in the technical area. Because of the high attrition rate in knowHow, the unavailability of a constant point of contact from the client side will be an issue. This also calls for proper documentation.
- The Project Plan can be reused for further expansion (Kate, 2016).

**Work Breakdown Structure**

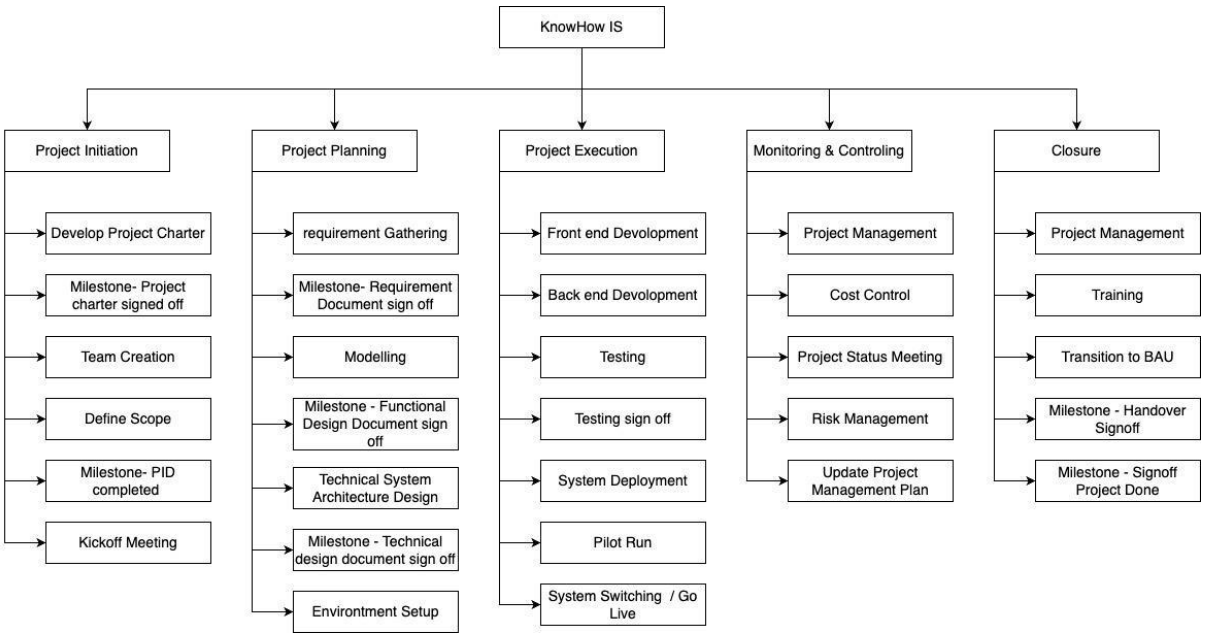

Fig1: Work Breakdown Structure.

The three-level hierarchy starts with the element of Knowhow IS, essentially the project, which is then split into Initiation, Planning, Execution, Monitoring & Controlling, and Closure.

The key elements in Project initiation are the creation, review and signing off of the project charter, followed by creating a scope document and Project Initiation Document (PID), after which team members are boarded into the project and given initial KT. Security clearance and accounts are created in AWS, Microsoft Teams, and Jira. The phase ends with the project manager conducting a kick-off meeting with all stakeholders.

The planning involves gathering use cases and, creating user requirement documents and generating test cases, the requirements are signed off to avoid misinterpretations, based on requirements, the system modeling and technical design are created and signed off post which the Development, Test & UAT, and Production environment are set up to start development.

The execution starts with system development which includes a front-end web page that enables inputting information and storing files, assigning jobs, and creating an email system. A back-end data storage in AWS containing S3 file storage and a redshift database with automated ETL jobs using glue and airflow. Unit Testing is also completed in this element, and the system is handed over to testing. The QA team tests and signs off after all bug fixes, followed by User Acceptance Testing. The system is then deployed in a production environment and a pilot run is done, post which the old system is decommissioned, and the new system goes live for all users.

Control over the project runs parallel to other phases, including cost control checks and meetings to ensure cost is still under control. Periodic project update meetings which include

daily internal meetings and weekly client meetings and risk management efforts as defined in the risk management plan. The final phase includes user training, switching to BAU and project sign-off.

**Detail Task List**

| ID | Task | No of Days | Start Date | End Date | Predecessor | Assigned to |
|---|---|---|---|---|---|---|
| 1 | **Project Initiation** | 21 days | 10-May-23 | 07-Jun-23 | | |
| 2 | **Develop Project Charter** | 13 days | 10-May-23 | 26-May-23 | | |
| 3 | Collect relevant information | 3 days | 10-May-23 | 12-May-23 | | Mr. Tony Stark |
| 4 | Develop project Charter document | 5 days | 15-May-23 | 19-May-23 | 3 | Mr. Tony Stark |
| 5 | Project Sponsor Review | 2 days | 22-May-23 | 23-May-23 | 4 | USER - Anne Gerbot |
| 6 | Revise the project charter | 2 days | 24-May-23 | 25-May-23 | 5 | Mr. Tony Stark |
| 7 | Project Charter Signoff | 1 day | 26-May-23 | 26-May-23 | 6 | USER - Anne Gerbot |
| 8 | Milestone- Project charter signed off | 0 days | 26-May-23 | 26-May-23 | 7 | Mr. Tony Stark |
| 9 | **Team Creation** | 20 days | 10-May-23 | 06-Jun-23 | | |

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|---|---|---|---|---|---|---|
| 10 | Selecting internal team members | 2 days | 10-May-23 | 11-May-23 | | Mr. Tony Stark |
| 11 | Selecting outsourced team members | 10 days | 15-May-23 | 26-May-23 | 3 | Mr. Tony Stark |
| 12 | Team eyes breaking event | 1 day | 29-May-23 | 29-May-23 | 11 | Mr. Tony Stark |
| 13 | Account set up for team members | 7 days | 29-May-23 | 06-Jun-23 | 11 | Mr. Steve Rogers |
| 14 | **Define Scope** | 18 days | 15-May-23 | 07-Jun-23 | | |
| 15 | Analysis the user requirements document | 1 day | 07-Jun-23 | 07-Jun-23 | 13 | Mrs. Natasha Romanolf |
| 16 | Define in-scope and out of scope | 3 days | 15-May-23 | 17-May-23 | 3 | Mrs. Natasha Romanolf |
| 17 | Develop Scope document | 3 days | 18-May-23 | 22-May-23 | 16 | Mrs. Natasha Romanolf |
| 18 | Scope Signoff | 1 day | 23-May-23 | 23-May-23 | 17 | Mr. Tony Stark |
| 19 | Develop PID | 7 days | 24-May-23 | 01-Jun-23 | 18 | Mr. Tony Stark |
| 20 | Kickoff Meeting | 1 day | 02-Jun-23 | 02-Jun-23 | 19 | Mr. Tony Stark |
| 21 | Milestone- PID completed | 0 days | 02-Jun-23 | 02-Jun-23 | 20 | Mr. Tony Stark |
| | | | | | | |
| 22 | **Project Planning** | 71 days | 05-Jun-23 | 11-Sep-23 | | |

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|---|---|---|---|---|---|---|
| 23 | **Requirement Gathering** | 37 days | 05-Jun-23 | 25-Jul-23 | | |
| 24 | Prepare for the Interview | 2 days | 05-Jun-23 | 06-Jun-23 | 20 | Mrs. Natasha Romanolf |
| 25 | Interview with Anne Gerbot | 1 day | 07-Jun-23 | 07-Jun-23 | 24 | Mrs. Natasha Romanolf |
| 26 | Interview with staffs | 10 days | 07-Jun-23 | 20-Jun-23 | 24 | Mrs. Natasha Romanolf |
| 27 | Analysis interview transcript | 5 days | 21-Jun-23 | 27-Jun-23 | 26 | Mrs. Natasha Romanolf |
| 28 | Design and review the use case | 8 days | 28-Jun-23 | 07-Jul-23 | 27 | Mr. Tony Stark; Mrs. Natasha Romanolf |
| 29 | Develop User requirement document | 5 days | 10-Jul-23 | 14-Jul-23 | 28 | Mrs. Natasha Romanolf |
| 30 | Negotiate requirements analysis with users | 2 days | 17-Jul-23 | 18-Jul-23 | 29 | Mrs. Natasha Romanolf |
| 31 | Update the user requirements document | 5 days | 17-Jul-23 | 21-Jul-23 | 29 | Mrs. Natasha Romanolf |
| 32 | Requirement Signoff | 2 days | 24-Jul-23 | 25-Jul-23 | 31 | USER - Sree Patel; USER - Mo Jonas |
| 33 | Milestone-Requirement Document sign off | 0 days | 25-Jul-23 | 25-Jul-23 | 32 | Mr. Tony Stark |

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|---|---|---|---|---|---|---|
| 34 | **Modelling** | 15 days | 26-Jul-23 | 15-Aug-23 | 23 | |
| 35 | Analysis with Interview document, User requirement document and Scope document | 3 days | 26-Jul-23 | 28-Jul-23 | | Mr. Steve Rogers |
| 36 | Draw the rich picture | 4 days | 31-Jul-23 | 03-Aug-23 | 35 | Mrs. Natasha Romanolf; Mr. Steve Rogers |
| 37 | Develop System Modelling document | 4 days | 31-Jul-23 | 03-Aug-23 | 35 | Mr. Steve Rogers; Mrs. Natasha Romanolf |
| 38 | Negotiate System Modelling document with users | 2 days | 04-Aug-23 | 07-Aug-23 | 37 | Mrs. Natasha Romanolf; Mr. Steve Rogers |
| 39 | Update the System Modelling document | 3 days | 08-Aug-23 | 10-Aug-23 | 38 | Mrs. Natasha Romanolf; Mr. Steve Rogers |
| 40 | Functional Design Review | 2 days | 11-Aug-23 | 14-Aug-23 | 39 | Mr. Steve Rogers; Mr. Tony Stark; Mrs. Natasha Romanolf |
| 41 | Functional Design Sign off | 1 day | 15-Aug-23 | 15-Aug-23 | 40 | USER - Mo Jonas; USER - Sree Patel |

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| 42 | Milestone - Functional design document sign off | 0 days | 15-Aug-23 | 15-Aug-23 | 41 | Mr. Tony Stark |
| 43 | **Technical System Architecture Design** | 17 days | 16-Aug-23 | 07-Sep-23 | 34 | |
| 44 | Analysis of system models and design | 2 days | 16-Aug-23 | 17-Aug-23 | | Mr. Steve Rogers |
| 45 | Designing technical architecture | 15 days | 18-Aug-23 | 07-Sep-23 | 44 | Mr. Steve Rogers |
| 46 | Develop technical architecture document | 3 days | 18-Aug-23 | 22-Aug-23 | 44 | Mr. Steve Rogers |
| 47 | Technical design review | 4 days | 23-Aug-23 | 28-Aug-23 | 46 | Mr. Steve Rogers; Mr. Tony Stark |
| 48 | Technical Design Signoff | 1 day | 16-Aug-23 | 16-Aug-23 | | USER - Mo Jonas; USER - Sree Patel |
| 49 | Milestone - Technical design document sign off | 0 days | 16-Aug-23 | 16-Aug-23 | 48 | Mr. Tony Stark |
| 50 | Test case design | 5 days | 17-Aug-23 | 23-Aug-23 | 48 | Mr. Peter Parker; Mrs. Natasha Romanolf |

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|---|---|---|---|---|---|---|
| 51 | Test case sign off | 1 day | 24-Aug-23 | 24-Aug-23 | 50 | USER - Mo Jonas; USER - Sree Patel |
| 52 | **Environment Setup** | 18 days | 17-Aug-23 | 11-Sep-23 | | |
| 53 | Setup Development Environment | 8 days | 17-Aug-23 | 28-Aug-23 | 48 | Mr. Clark Kent; Mr. Bruce Wayne |
| 54 | Setup Testing environment | 8 days | 17-Aug-23 | 28-Aug-23 | 48 | Mr. Bruce Wayne; Mr. Clark Kent |
| 55 | setup production environment | 10 days | 29-Aug-23 | 11-Sep-23 | 54 | Mr. Bruce Wayne; Mr. Clark Kent |
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| 56 | **Project Execution** | 279 days | 17-Aug-23 | 10-Sep-24 | | |
| 57 | **Front end Development** | 125 days | 29-Aug-23 | 19-Feb-24 | | |
| 58 | UI development | 35 days | 29-Aug-23 | 16-Oct-23 | 53 | Mr. Clark Kent; Mr. Steve Rogers |
| 59 | UI functional unit testing | 5 days | 17-Oct-23 | 23-Oct-23 | 58 | Mr. Clark Kent |
| 60 | Data entry and retrieval functionality development | 30 days | 24-Oct-23 | 04-Dec-23 | 59 | Mr. Clark Kent; Mr. Steve Rogers |

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|---|---|---|---|---|---|---|
| 61 | Data entry and retrieval functionality unit testing | 5 days | 05-Dec-23 | 11-Dec-23 | 60 | Mr. Clark Kent |
| 62 | Emailing functionality development | 20 days | 12-Dec-23 | 08-Jan-24 | 61 | Mr. Clark Kent; Mr. Steve Rogers |
| 63 | Emailing functionality unit testing | 5 days | 09-Jan-24 | 15-Jan-24 | 62 | Mr. Clark Kent |
| 64 | Job assigning functionality development | 20 days | 16-Jan-24 | 12-Feb-24 | 63 | Mr. Clark Kent; Mr. Steve Rogers |
| 65 | Job assigning functional unit testing | 5 days | 13-Feb-24 | 19-Feb-24 | 64 | Mr. Clark Kent |
| 66 | **Back end Development** | 145 days | 17-Aug-23 | 06-Mar-24 | | |
| 67 | Cloud set up | 10 days | 17-Aug-23 | 30-Aug-23 | 48 | Mr. Steve Rogers; Mr. Bruce Wayne |
| 68 | Creating file storage in S3 | 10 days | 31-Aug-23 | 13-Sep-23 | 67 | Mr. Bruce Wayne; Mr. Steve Rogers |
| 69 | Creating redshift databases | 10 days | 14-Sep-23 | 27-Sep-23 | 68 | Mr. Bruce Wayne; Mr. Steve Rogers |

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|---|---|---|---|---|---|---|
| 70 | Creating ETL jobs in glue | 30 days | 28-Sep-23 | 08-Nov-23 | 69 | Mr. Bruce Wayne; Mr. Steve Rogers |
| 71 | ETL job unit testing | 5 days | 09-Nov-23 | 15-Nov-23 | 70 | Mr. Bruce Wayne |
| 72 | Data Migration to cloud | 60 days | 16-Nov-23 | 07-Feb-24 | 71 | Mr. Bruce Wayne; Mr. Steve Rogers |
| 73 | System Integration | 10 days | 08-Feb-24 | 21-Feb-24 | 72 | Mr. Bruce Wayne; Mr. Steve Rogers |
| 74 | Integrated system pipeline unit testing | 10 days | 22-Feb-24 | 06-Mar-24 | 73 | Mr. Bruce Wayne |
| 75 | **Testing** | 117 days | 24-Oct-23 | 03-Apr-24 | | |
| 76 | UI QA testing | 8 days | 24-Oct-23 | 02-Nov-23 | 59 | Mr. Peter Parker |
| 77 | UI bug fixes | 10 days | 03-Nov-23 | 16-Nov-23 | 76 | Mr. Clark Kent |
| 78 | UI QA retest | 5 days | 17-Nov-23 | 23-Nov-23 | 77 | Mr. Peter Parker |
| 79 | Data entry and retrieval functionality QA testing | 8 days | 12-Dec-23 | 21-Dec-23 | 61 | Mr. Peter Parker |
| 80 | Data entry and retrieval functionality bug fixes | 10 days | 22-Dec-23 | 04-Jan-24 | 79 | Mr. Clark Kent |
| 81 | Data entry and retrieval functionality QA retesting | 5 days | 05-Jan-24 | 11-Jan-24 | 80 | Mr. Peter Parker |

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|---|---|---|---|---|---|---|
| 82 | Emailing functionality QA testing | 8 days | 16-Jan-24 | 25-Jan-24 | 63 | Mr. Peter Parker |
| 83 | Emailing functionality QA fixes | 10 days | 26-Jan-24 | 08-Feb-24 | 82 | Mr. Clark Kent |
| 84 | Emailing functionality QA retesting | 5 days | 09-Feb-24 | 15-Feb-24 | 83 | Mr. Peter Parker |
| 85 | Job assigning functionality QA testing | 8 days | 20-Feb-24 | 29-Feb-24 | 65 | Mr. Peter Parker |
| 86 | Job assigning functionality QA fixes | 10 days | 01-Mar-24 | 14-Mar-24 | 85 | Mr. Clark Kent |
| 87 | Job assigning functionality QA retesting | 5 days | 15-Mar-24 | 21-Mar-24 | 86 | Mr. Peter Parker |
| 88 | ETL job QA testing | 8 days | 16-Nov-23 | 27-Nov-23 | 71 | Mr. Peter Parker |
| 89 | ETL job QA fixes | 10 days | 28-Nov-23 | 11-Dec-23 | 88 | Mr. Clark Kent |
| 90 | ETL job QA retesting | 5 days | 12-Dec-23 | 18-Dec-23 | 89 | Mr. Peter Parker |
| 91 | Data Migration QA testing | 23 days | 08-Feb-24 | 11-Mar-24 | 72 | Mr. Peter Parker |
| 92 | Data Migration QA fixes | 10 days | 12-Mar-24 | 25-Mar-24 | 91 | Mr. Clark Kent |

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|---|---|---|---|---|---|---|
| 93 | Data Migration QA retesting | 5 days | 26-Mar-24 | 01-Apr-24 | 92 | Mr. Peter Parker |
| 94 | Integration QA Test | 8 days | 22-Feb-24 | 04-Mar-24 | 73 | Mr. Peter Parker |
| 95 | Integration bug fixes | 10 days | 05-Mar-24 | 18-Mar-24 | 94 | Mr. Clark Kent |
| 96 | Regression Testing | 10 days | 19-Mar-24 | 01-Apr-24 | 95 | Mr. Peter Parker |
| 97 | Testing sign off | 2 days | 02-Apr-24 | 03-Apr-24 | 96 | Mr. Peter Parker |
| 98 | Milestone- Test document | 0 days | 03-Apr-24 | 03-Apr-24 | 97 | Mr. Tony Stark |
| 99 | User Acceptance Test | 30 days | 24-Nov-23 | 04-Jan-24 | 78 | USER - John Louis |
| 100 | User Acceptance Fixes | 15 days | 05-Jan-24 | 25-Jan-24 | 99 | Mr. Clark Kent; Mr. Bruce Wayne; Mr. Steve Rogers |
| 101 | User Acceptance Retesting | 5 days | 26-Jan-24 | 01-Feb-24 | 100 | USER - John Louis |
| 102 | Bug fixes from UAT | 15 days | 02-Feb-24 | 22-Feb-24 | 101 | Mr. Bruce Wayne; Mr. Clark Kent |
| 103 | UAT regression testing | 4 days | 19-Dec-23 | 22-Dec-23 | 90 | Mr. Peter Parker; USER - John Louis |
| 104 | Security Test (Inc: Bugs Fixing) | 15 days | 25-Dec-23 | 12-Jan-24 | 103 | Mr. Peter Parker |

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|---|---|---|---|---|---|---|
| 105 | Milestone - Test results document-Sign Off | 0 days | 12-Jan-24 | 12-Jan-24 | 104 | |
| 106 | **System Deployment** | 20 days | 04-Apr-24 | 01-May-24 | 75 | |
| 107 | Basic environment configuration | 10 days | 04-Apr-24 | 17-Apr-24 | | Mr. Bruce Wayne; Mr. Clark Kent |
| 108 | Installation | 5 days | 18-Apr-24 | 24-Apr-24 | 107 | Mr. Bruce Wayne; Mr. Clark Kent |
| 109 | Dedicated environment configuration | 5 days | 25-Apr-24 | 01-May-24 | 108 | Mr. Bruce Wayne; Mr. Clark Kent |
| 110 | **Pilot Run** | 47 days | 02-May-24 | 05-Jul-24 | 106 | |
| 111 | Data Monitoring | 10 days | 02-May-24 | 15-May-24 | | Mr. Bruce Wayne |
| 112 | Backup Data | 15 days | 16-May-24 | 05-Jun-24 | 111 | Mr. Bruce Wayne |
| 113 | User feedback | 8 days | 06-Jun-24 | 17-Jun-24 | 112 | Mr. Clark Kent |
| 114 | Change request analysis | 4 days | 18-Jun-24 | 21-Jun-24 | 113 | Mr. Bruce Wayne; Mr. Clark Kent |
| 115 | Change implementation buffer | 10 days | 24-Jun-24 | 05-Jul-24 | 114 | Mr. Bruce Wayne; Mr. Clark Kent |
| 116 | **System Switching** | 47 days | 08-Jul-24 | 10-Sep-24 | 110 | |
| 117 | Data Backup | 10 days | 08-Jul-24 | 19-Jul-24 | | Mr. Bruce Wayne |

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|---|---|---|---|---|---|---|
| 118 | Preparing production environment | 7 days | 22-Jul-24 | 30-Jul-24 | 117 | Mr. Clark Kent; Mr. Bruce Wayne |
| 119 | Phased conversion | 30 days | 31-Jul-24 | 10-Sep-24 | 118 | Mr. Bruce Wayne; Mr. Clark Kent |
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| 120 | **Closure** | 41 days | 11-Sep-24 | 06-Nov-24 | 56 | |
| 121 | **Training** | 26 days | 11-Sep-24 | 16-Oct-24 | | |
| 122 | Documentation | 10 days | 11-Sep-24 | 24-Sep-24 | 116 | Mr. Steve Rogers; Mr. Clark Kent; Mr. Bruce Wayne |
| 123 | User training | 16 days | 25-Sep-24 | 16-Oct-24 | 122 | Mr. Tony Stark; Mr. Clark Kent |
| 124 | Administrator training | 5 days | 25-Sep-24 | 01-Oct-24 | 123 | Mr. Steve Rogers |
| 125 | **Transition to BAU** | 10 days | 17-Oct-24 | 30-Oct-24 | 121 | |
| 126 | Share information that relates to the overall strategy | 5 days | 17-Oct-24 | 23-Oct-24 | | Mr. Tony Stark |
| 127 | Create and share these materials for successful onboarding | 5 days | 24-Oct-24 | 30-Oct-24 | 126 | Mr. Tony Stark |
| 128 | Handover Signoff | 2 days | 31-Oct-24 | 01-Nov-24 | 127 | Mr. Tony Stark |

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|---|---|---|---|---|---|---|
| 129 | Milestone | 0 days | 01-Nov-24 | 01-Nov-24 | 128 | Mr. Tony Stark |
| 130 | Signoff Project Done | 3 days | 04-Nov-24 | 06-Nov-24 | 129 | Mr. Tony Stark |
| 131 | Milestone | 0 days | 06-Nov-24 | 06-Nov-24 | 130 | Mr. Tony Stark |

Table 1: Detail Task List

**Milestones Table**

| ID | Milestone | Where in the Project Plan | Deliverable | Description |
|---|---|---|---|---|
| 1 | Project Charter Signoff | Project Initiation | 1.1 Project Charter Document | Contain information about scopes, budget, probable team and resources required. This document needs to be signed by clients |

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|---|---|---|---|---|
| 2 | PID drafted | Project Initiation | 2.1 Project Initiation Document | This document provides information about context, scope, business case, risk, and team members. This document need to be signed off by client |
| 3 | Kickoff Meeting | Project Initiation | Conduct Project Kickoff & Project Kickoff Minutes of Meeting | This meeting will mark the end of the onboarding of the team and the beginning of the project. The Stakeholders involved and point of contact, as well as communication channels, will be clear. Output from the meeting is the Minutes of meeting that need to be signed off by stakeholders |

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|---|---|---|---|---|
| 4 | Requirement Signoff | Project Planning | 4.1 Requirement Document.<br>4.2 blueprint Document. | The system will be designed based on this document. Crucial for system design and testing as it acts as a guideline. The client must sign off this document to ensure they agreed with the requirement gathered by SoftEng |
| 5 | Functional Design Signoff | Project Planning | 5.1 Functional Design Document. | A functional Design Document provides information about: Functional Requirements, Use cases, logic specifications, & Test Plans. The client must sign off this document to ensure they agreed with the design by SoftEng |

| | | | | |
|---|---|---|---|---|
| 6 | Technical Design Signoff | Project Planning | 6.1 Technical Design Document | This document provides information about Data Types, structures required, detailed class models, specific algorithm, and Physical data models. The client must sign off this document to ensure they agreed with the design by SoftEng |
| 7 | Testing Signoff | Project Execution | 7.1 QA Test Doc<br>- UI QA test<br>- ETL QA test<br>- Functionality QA<br>- Integration QA test<br>- Data Migration QA test | Several documents provided evidence of tests are getting passed ( the example: snapshots) and need to be approved by the client.<br><br>The project manager is monitoring each part of testing to have control over the development process. Specifically, the QA test doc contains results on:<br>- UI QA test obtained on 24th Nov 23<br>- ETL QA Test obtained on 18 Dec 23<br>- Functionality QA test obtained on 21 Mar 2024<br>- Integration QA obtained on 04 Mar 24.<br>- Data Migration QA obtained on 01 Apr 23 |
| | | | 7.2 Regression Test Doc | |
| | | | 7.3 UAT Doc | |
| | | | 7.4 UAT Regression Doc | |
| | | | 7.5 Security Test Doc | |

| | | | | |
|---|---|---|---|---|
| 8 | Go Live / System Switched | Project Execution | 8.1 Information Systems (the application) | The System is available to use by the users. |
| 9 | Handover signoff | Project Closure | 9.1 User Manual (Guideline) | 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 |
| | | | 9.2 Operational Document | |
| | | | 9.3 Training Conducted | |
| | | | 9. 4 Handover Document | |
| 10 | Signoff Project Done | Project Closure | 10.1 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 |

Table 2: Milestone Table

This project has several milestones in each project phase.

- Project charter signoff: The project charter contains project goals, cost, duration, and potential risks created by the project manager. It needs to be reviewed and signed off by project sponsors to ensure all sponsors agree to start the project.
- PID: The SoftEng team prepares the scope document containing project objectives, project scope description, project deliverables, project assumptions, and project exclusions. This document needs to be signed off by project sponsors and business users to agree on which parts are in-scope project and out-scope of the project.
- Kick-off Meeting: All stakeholders must attend the kick-off meeting as the official starting point to start the project:
    - To Have Clear Direction and Expectations from Project Sponsor regarding our Project.
    - Ensure all stakeholders get the same information, perception, and goals.
    - To Present Project Planning and Methodology to ensure all team members have the same understanding.
    - Getting commitment from all stakeholders.
- Requirement signoff: After the business analyst collects the use cases and requirements from business users and analyses the requirements, BA creates the use case documents, requirement documents, and test case documents. Which needs to be reviewed and signed off.
- Functional System Design: Functional System Design provides detailed information on how the system solution will operate based on the desired behavior. This document is derived from the Business Requirements Document's high-level requirements and

provides traceability from the functional specification to the business requirements. By signing off this document, the technical team can start designing the technical parts.

- Technical System Design: A Technical System Design Document is composed by the technical team and defines every minute detail of the design or specific components.
- Testing Signoff: Once the technical team develops the system, it needs to be tested in several testing to ensure the system works, such as QA testing, System Integration testing, regression testing, User Acceptance testing, and security testing. These testing needs to be documented and signed off by the responsible parties.
- Go live system / System Switched: After successful user acceptance, the system is deployed in the development environment, and if the pilot runs to give the expected results, the system goes live for all users.
- Handover signoff: This is the phase in which KnowHow employees already operate the system. There is no more involvement by the Diamond team in operating the system.
- Project Closing Signoff: This is a milestone that the project is completely done. This document included all the checklist activities and documentation that the responsible parties completed and signed. This phase is also the last milestone SoftEng needs to complete to bill the invoice.

**Detailed Project Plan**

The project will begin on May 10, 2023, and conclude on November 6, 2024. The project initiation phase will last for 21 days, followed by project planning lasting 71 days. The project execution will take up most of the project duration lasting 279 days, followed by the final stage of project closure lasting 41 days. Consistent with Simpson and Sheppard (1994). Software testing is a review of requirements analysis, design and coding before the software goes live, with enough testing at each stage to discover issues. Lapointe and Rivard (2007) state that to successfully implement the system, developing and conducting contingency plans, establishing standard operating procedures, publishing technical manuals, creating a testing environment and additional relevant jobs are required. Monitoring and controlling is done throughout the project via a communication plan and meetings to check on cost creep, scope creep, duration creep and maintenance and evaluation of defect logs as well as risk registry and hence this phase will be 391 days long.

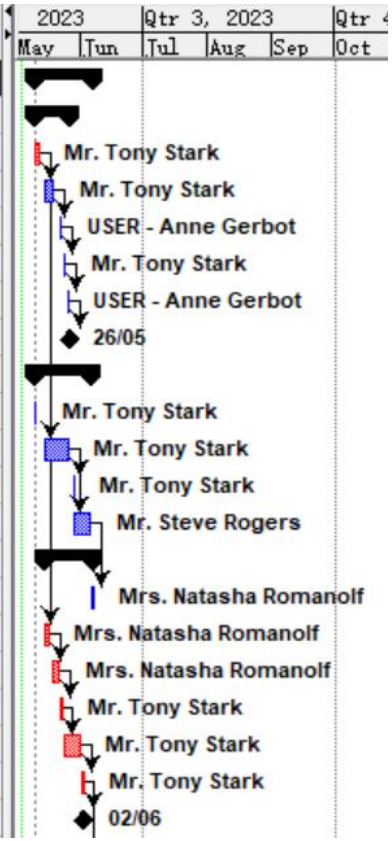
The project Manager will be involved in the project from the beginning to the end for 18 months and will be utilized throughout the project, and will be responsible for tracking and controlling project activities and all milestones. The Lead system architect, an in-house employee in charge of design, implementation and micro-management of the technical side of the project, will be involved starting from team creation until the project is completed. The outsourced business analyst will be involved in the initial stages of the project to bridge the gap between the users and the technical team and will be utilized for 64 days. The front-end and back-end developers will be involved starting from the environment setup phase, they are outsourced employees lasting for 284 and 243 days respectively. The QA test led by an in-house employee will be part of creating test cases in the beginning and then will be utilized from the testing phase and will last for 114 days.

To reduce the duration of the project, a few tasks are done parallelly beginning from the initiation phase, where as soon as the project charter is put together, the process of creating a team will be started, the outsourced employees will be interviewed from a pool of reserve list maintained by SoftEng. Once the technical design is signed off, the environment setup will be started parallelly, with the test lead working on test case preparation and the development team working on environment setup. Front and back-end development will work parallelly coordinated by the lead technology architect with each system developed parallelly. The QA testing will be carried out after unit testing of the first system for example, once the UI unit testing is completed, QA will start on UI QA testing, and the front-end developer will be developing data entry and retrieval at the same time to fix QA bugs in UI. To manage workload, the QA lead will also help with unit testing. Here the team has taken elements of agile to produce small working components that could be accessed by the client if required to reassure the client and keep optimum quality while sticking to the timeline. Due to the absence of pre-existing information systems, data migration to the cloud takes more time since historical data, digital and non-digital, has to be migrated to the cloud. After several testing phases, SoftEng will install the system in the production server and run it parallel with the initial system to ensure the new system is established well. After the pilot run ends, SoftEng turns off the old system, and KnowHow will totally use the new system.

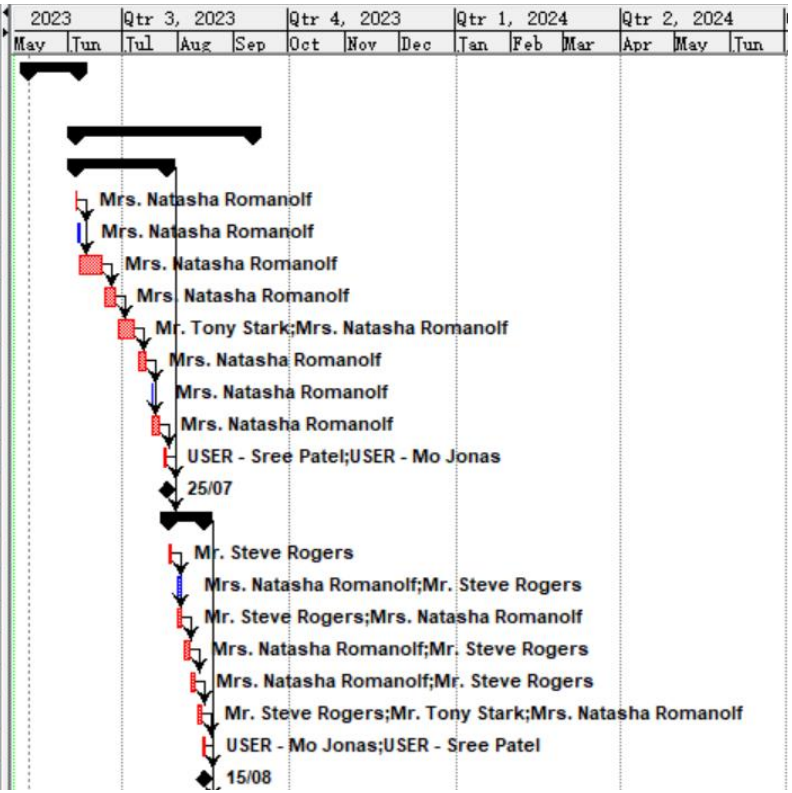
Softeng needs to hand over all the systems to Knowhow. It will start to document all the technical and non-technical system works, such as manual guides, create documentation such as reviews, audits, and lessons learned, and conduct training for all users and the operation team. It is followed by the transition to BAU (Business as Usual). To complete this project, all the stakeholders will give the project sign-off done as the completion of this work.

## Gantt Chart

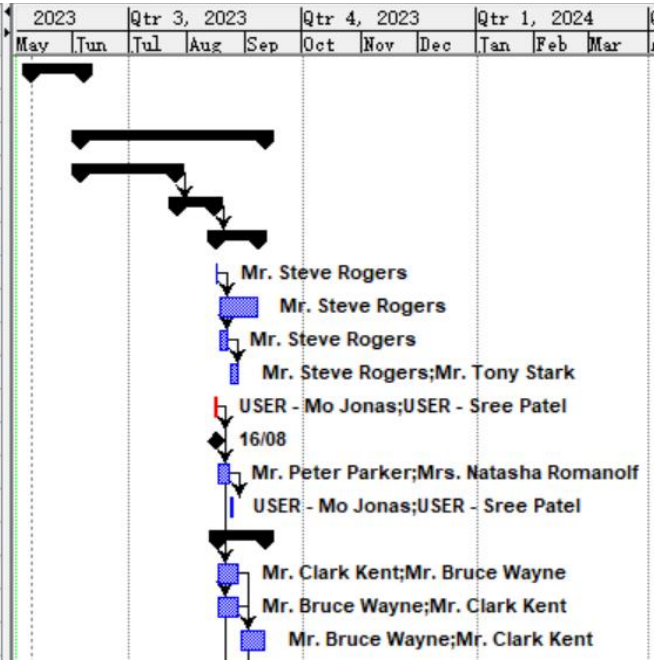
| | Name | Duration | Start | Finish | Prede... |
|---|---|---|---|---|---|
| 1 | **Project Initiation** | 21 days | **10/05/23 08:00** | **07/06/23 17:00** | |
| 2 | **Develop Project Charter** | 13 days | **10/05/23 08:00** | **26/05/23 17:00** | |
| 3 | Collect relevant information | 3 days | 10/05/23 08:00 | 12/05/23 17:00 | |
| 4 | Develop project Charter document | 5 days | 15/05/23 08:00 | 19/05/23 17:00 | 3 |
| 5 | Project Sponsor Review | 2 days | 22/05/23 08:00 | 23/05/23 17:00 | 4 |
| 6 | Revise the project charter | 2 days | 24/05/23 08:00 | 25/05/23 17:00 | 5 |
| 7 | Project Charter Signoff | 1 day | 26/05/23 08:00 | 26/05/23 17:00 | 6 |
| 8 | Milestone- Project charter signed off | 0 days | 26/05/23 17:00 | 26/05/23 17:00 | 7 |
| 9 | **Team Creation** | 20 days | **10/05/23 08:00** | **06/06/23 17:00** | |
| 10 | Selecting internal team members | 2 days | 10/05/23 08:00 | 11/05/23 17:00 | |
| 11 | Selecting outsourced team members | 10 days | 15/05/23 08:00 | 26/05/23 17:00 | 3 |
| 12 | Team ice breaking event | 1 day | 29/05/23 08:00 | 29/05/23 17:00 | 11 |
| 13 | Account set up for team memebers | 7 days | 29/05/23 08:00 | 06/06/23 17:00 | 11 |
| 14 | **Define Scope** | 18 days | **15/05/23 08:00** | **07/06/23 17:00** | |
| 15 | Analysis the user requirements document | 1 day | 07/06/23 08:00 | 07/06/23 17:00 | 13 |
| 16 | Define in-scope and out of scope | 3 days | 15/05/23 08:00 | 17/05/23 17:00 | 3 |
| 17 | Develop Scope document | 3 days | 18/05/23 08:00 | 22/05/23 17:00 | 16 |
| 18 | Scope Signoff | 1 day | 23/05/23 08:00 | 23/05/23 17:00 | 17 |
| 19 | Develop PID | 7 days | 24/05/23 08:00 | 01/06/23 17:00 | 18 |
| 20 | Kickoff Meeting | 1 day | 02/06/23 08:00 | 02/06/23 17:00 | 19 |
| 21 | Milestone- PID completed | 0 days | 02/06/23 17:00 | 02/06/23 17:00 | 20 |



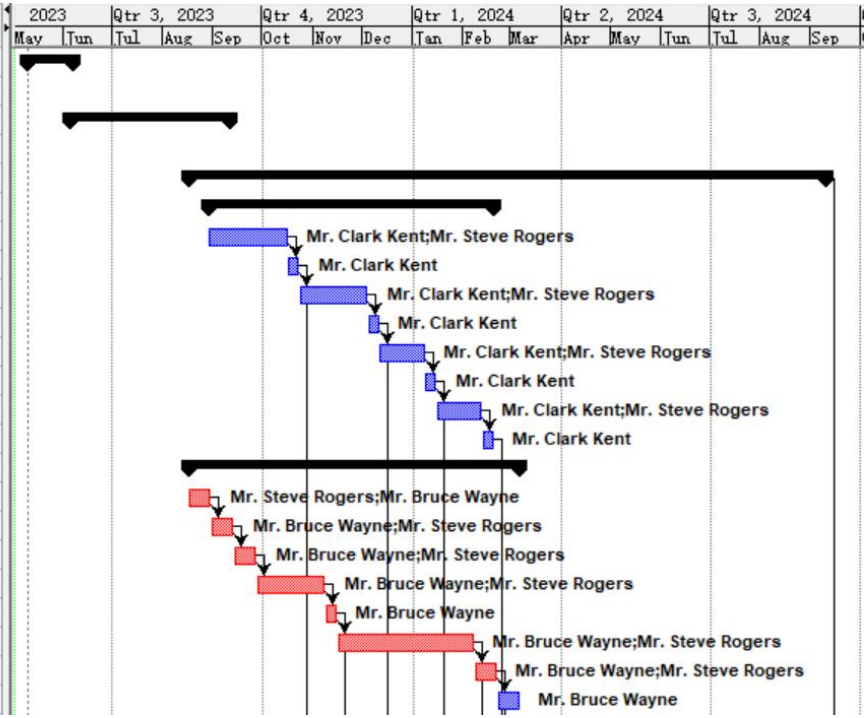
| | Name | Duration | Start | Finish | Prede... |
|---|---|---|---|---|---|
| 1 | **Project Initiation** | 21 days | **10/05/23 08:00** | **07/06/23 17:00** | |
| | | | | | |
| 22 | **Project Planning** | 71 days | **05/06/23 08:00** | **11/09/23 17:00** | |
| 23 | **requirement Gathering** | 37 days | **05/06/23 08:00** | **25/07/23 17:00** | |
| 24 | Prepare for the Interview | 2 days | 05/06/23 08:00 | 06/06/23 17:00 | 20 |
| 25 | Interview with Anne Gerbot | 1 day | 07/06/23 08:00 | 07/06/23 17:00 | 24 |
| 26 | Interview with staffs | 10 days | 07/06/23 08:00 | 20/06/23 17:00 | 24 |
| 27 | Analysis interview transcript | 5 days | 21/06/23 08:00 | 27/06/23 17:00 | 26 |
| 28 | Design and review the use case | 8 days | 28/06/23 08:00 | 07/07/23 17:00 | 27 |
| 29 | Develop User requirement document | 5 days | 10/07/23 08:00 | 14/07/23 17:00 | 28 |
| 30 | Negotiate requirements analysis with users | 2 days | 17/07/23 08:00 | 18/07/23 17:00 | 29 |
| 31 | Update the user requirements document | 5 days | 17/07/23 08:00 | 21/07/23 17:00 | 29 |
| 32 | Requirement Signoff | 2 days | 24/07/23 08:00 | 25/07/23 17:00 | 31 |
| 33 | Milestone- Requirement Document sign off | 0 days | 25/07/23 17:00 | 25/07/23 17:00 | 32 |
| 34 | **Modelling** | 15 days | **26/07/23 08:00** | **15/08/23 17:00** | **23** |
| 35 | Analysis with Interview document, User requi: | 3 days | 26/07/23 08:00 | 28/07/23 17:00 | |
| 36 | Draw the rich picture | 4 days | 31/07/23 08:00 | 03/08/23 17:00 | 35 |
| 37 | Develop System Modelling document | 4 days | 31/07/23 08:00 | 03/08/23 17:00 | 35 |
| 38 | Negotiate System Modelling document with use: | 2 days | 04/08/23 08:00 | 07/08/23 17:00 | 37 |
| 39 | Update the System Modelling document | 3 days | 08/08/23 08:00 | 10/08/23 17:00 | 38 |
| 40 | Functional Design Review | 2 days | 11/08/23 08:00 | 14/08/23 17:00 | 39 |
| 41 | Functional Design Sign off | 1 day | 15/08/23 08:00 | 15/08/23 17:00 | 40 |
| 42 | Milestone - Functional design document sign | 0 days | 15/08/23 17:00 | 15/08/23 17:00 | 41 |



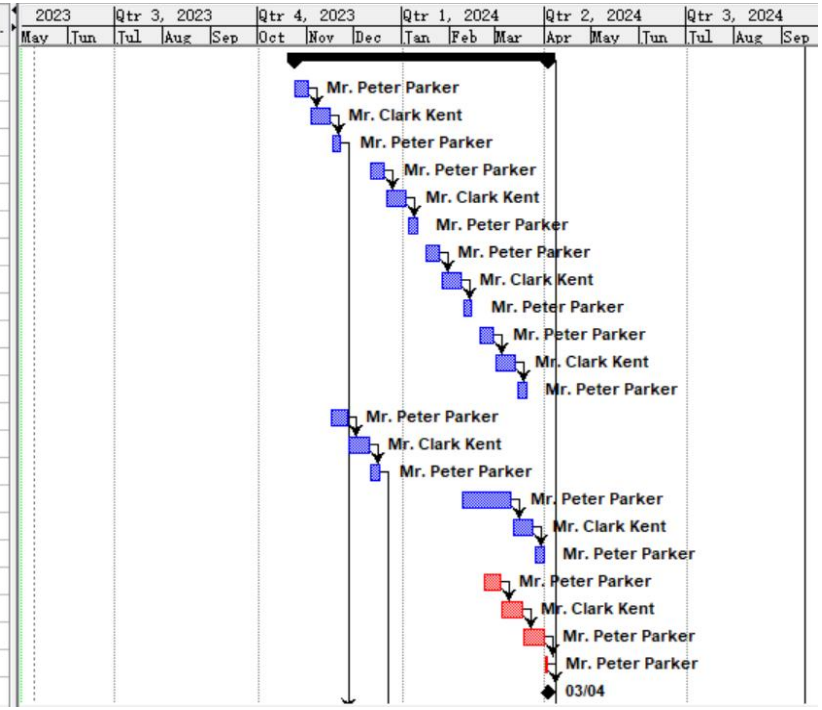
| | Name | Duration | Start | Finish | Prede... |
|---|---|---|---|---|---|
| 1 | **Project Initiation** | 21 days | **10/05/23 08:00** | **07/06/23 17:00** | |
| | | | | | |
| 22 | **Project Planning** | 71 days | **05/06/23 08:00** | **11/09/23 17:00** | |
| 23 | **requirement Gathering** | 37 days | **05/06/23 08:00** | **25/07/23 17:00** | |
| 34 | **Modelling** | 15 days | **26/07/23 08:00** | **15/08/23 17:00** | **23** |
| 43 | **Technical System Architecture Design** | 17 days | **16/08/23 08:00** | **07/09/23 17:00** | **34** |
| 44 | Anallysis of system models and design | 2 days | 16/08/23 08:00 | 17/08/23 17:00 | |
| 45 | Designing technical architecture | 15 days | 18/08/23 08:00 | 07/09/23 17:00 | 44 |
| 46 | Develop technical architecture document | 3 days | 18/08/23 08:00 | 22/08/23 17:00 | 44 |
| 47 | Technical design review | 4 days | 23/08/23 08:00 | 28/08/23 17:00 | 46 |
| 48 | Technical Design Signoff | 1 day | 16/08/23 08:00 | 16/08/23 17:00 | |
| 49 | Milestone - Technical design document sign o | 0 days | 16/08/23 17:00 | 16/08/23 17:00 | 48 |
| 50 | Test case design | 5 days | 17/08/23 08:00 | 23/08/23 17:00 | 48 |
| 51 | Test case sign off | 1 day | 24/08/23 08:00 | 24/08/23 17:00 | 50 |
| 52 | **Environtment Setup** | 18 days | **17/08/23 08:00** | **11/09/23 17:00** | |
| 53 | Setup Development Environment | 8 days | 17/08/23 08:00 | 28/08/23 17:00 | 48 |
| 54 | Setup Testing environment | 8 days | 17/08/23 08:00 | 28/08/23 17:00 | 48 |
| 55 | setup production environtment | 10 days | 29/08/23 08:00 | 11/09/23 17:00 | 54 |



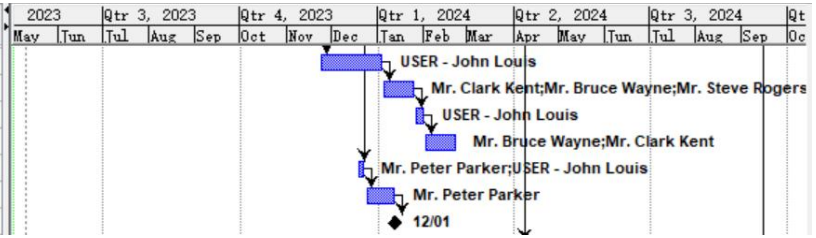
| | Name | Duration | Start | Finish | Prede... |
|---|---|---|---|---|---|
| 1 | **Project Initiation** | 21 days | **10/05/23 08:00** | **07/06/23 17:00** | |
| | | | | | |
| 22 | **Project Planning** | 71 days | **05/06/23 08:00** | **11/09/23 17:00** | |
| | | | | | |
| 56 | **Project Execution** | 279 days | **17/08/23 08:00** | **10/09/24 17:00** | |
| 57 | **Front end Development** | 125 days | **29/08/23 08:00** | **19/02/24 17:00** | |
| 58 | UI development | 35 days | 29/08/23 08:00 | 16/10/23 17:00 | 53 |
| 59 | UI functional unit testing | 5 days | 17/10/23 08:00 | 23/10/23 17:00 | 58 |
| 60 | Data entry and retrieval functionality devel | 30 days | 24/10/23 08:00 | 04/12/23 17:00 | 59 |
| 61 | Data entry and retrieval functionality unit | 5 days | 05/12/23 08:00 | 11/12/23 17:00 | 60 |
| 62 | Emailing functionality development | 20 days | 12/12/23 08:00 | 08/01/24 17:00 | 61 |
| 63 | Emailing functionality unit testing | 5 days | 09/01/24 08:00 | 15/01/24 17:00 | 62 |
| 64 | Job assigning functinality development | 20 days | 16/01/24 08:00 | 12/02/24 17:00 | 63 |
| 65 | Job assigning functinality unit testing | 5 days | 13/02/24 08:00 | 19/02/24 17:00 | 64 |
| 66 | **Back end Development** | 145 days | **17/08/23 08:00** | **06/03/24 17:00** | |
| 67 | Cloud set up | 10 days | 17/08/23 08:00 | 30/08/23 17:00 | 48 |
| 68 | Creating file storage in S3 | 10 days | 31/08/23 08:00 | 13/09/23 17:00 | 67 |
| 69 | Creating redshift databases | 10 days | 14/09/23 08:00 | 27/09/23 17:00 | 68 |
| 70 | Creating ETL jobs in glue | 30 days | 28/09/23 08:00 | 08/11/23 17:00 | 69 |
| 71 | ETL job unit testing | 5 days | 09/11/23 08:00 | 15/11/23 17:00 | 70 |
| 72 | Data Migration to cloud | 60 days | 16/11/23 08:00 | 07/02/24 17:00 | 71 |
| 73 | System Integration | 10 days | 08/02/24 08:00 | 21/02/24 17:00 | 72 |
| 74 | Integrated system pipeline unit testing | 10 days | 22/02/24 08:00 | 06/03/24 17:00 | 73 |



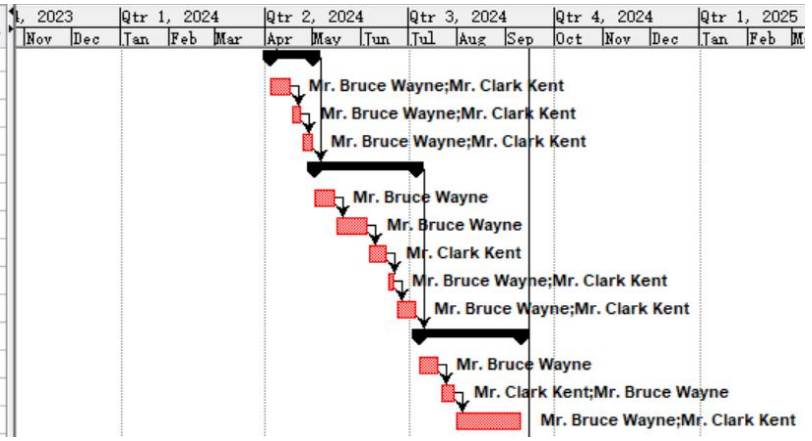
| | Name | Duration | Start | Finish | Prede... |
|---|---|---|---|---|---|
| 75 | **Testing** | 117 days | **24/10/23 08:00** | **03/04/24 17:00** | |
| 76 | UI QA testing | 8 days | 24/10/23 08:00 | 02/11/23 17:00 | 59 |
| 77 | UI bug fixes | 10 days | 03/11/23 08:00 | 16/11/23 17:00 | 76 |
| 78 | UI QA retest | 5 days | 17/11/23 08:00 | 23/11/23 17:00 | 77 |
| 79 | Data entry and retrieval functionality QA te | 8 days | 12/12/23 08:00 | 21/12/23 17:00 | 61 |
| 80 | Data entry and retrieval functionality bug f | 10 days | 22/12/23 08:00 | 04/01/24 17:00 | 79 |
| 81 | Data entry and retrieval functionality QA re | 5 days | 05/01/24 08:00 | 11/01/24 17:00 | 80 |
| 82 | Emailing functionality QA testing | 8 days | 16/01/24 08:00 | 25/01/24 17:00 | 63 |
| 83 | Emailing functionality QA fixes | 10 days | 26/01/24 08:00 | 08/02/24 17:00 | 82 |
| 84 | Emailing functionality QA retesting | 5 days | 09/02/24 08:00 | 15/02/24 17:00 | 83 |
| 85 | Job assigning functinality QA testing | 8 days | 20/02/24 08:00 | 29/02/24 17:00 | 65 |
| 86 | Job assigning functinality QA fixes | 10 days | 01/03/24 08:00 | 14/03/24 17:00 | 85 |
| 87 | Job assigning functinality QA retesting | 5 days | 15/03/24 08:00 | 21/03/24 17:00 | 86 |
| 88 | ETL job QA testing | 8 days | 16/11/23 08:00 | 27/11/23 17:00 | 71 |
| 89 | ETL job QA fixes | 10 days | 28/11/23 08:00 | 11/12/23 17:00 | 88 |
| 90 | ETL job QA retesting | 5 days | 12/12/23 08:00 | 18/12/23 17:00 | 89 |
| 91 | Data Migration QA testing | 23 days | 08/02/24 08:00 | 11/03/24 17:00 | 72 |
| 92 | Data Migration QA fixes | 10 days | 12/03/24 08:00 | 25/03/24 17:00 | 91 |
| 93 | Data Migration QA retesting | 5 days | 26/03/24 08:00 | 01/04/24 17:00 | 92 |
| 94 | Integration QA Test | 8 days | 22/02/24 08:00 | 04/03/24 17:00 | 73 |
| 95 | Integration bug fixes | 10 days | 05/03/24 08:00 | 18/03/24 17:00 | 94 |
| 96 | Regression Testing | 10 days | 19/03/24 08:00 | 01/04/24 17:00 | 95 |
| 97 | Testing sign off | 2 days | 02/04/24 08:00 | 03/04/24 17:00 | 96 |
| 98 | Milestone- Test document | 0 days | 03/04/24 17:00 | 03/04/24 17:00 | 97 |



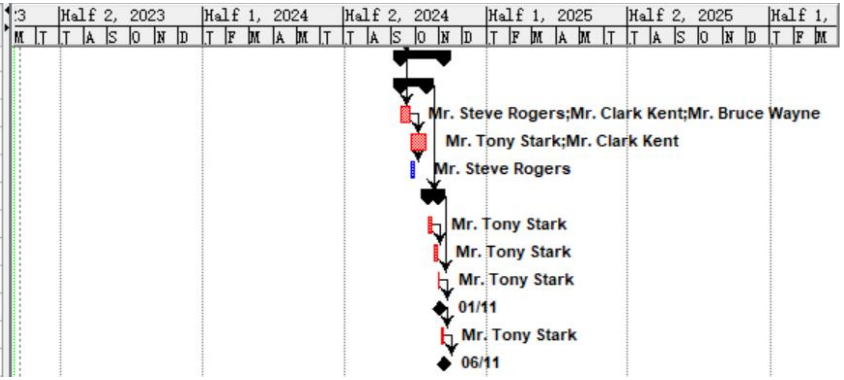

| | Name | Duration | Start | Finish | Prede... |
|---|---|---|---|---|---|
| F1 | User Acceptance Test | 30 days | 24/11/23 08:00 | 04/01/24 17:00 | 78 |
| 100 | User Acceptance Fixes | 15 days | 05/01/24 08:00 | 25/01/24 17:00 | 99 |
| 101 | User Acceptance Retesting | 5 days | 26/01/24 08:00 | 01/02/24 17:00 | 100 |
| 102 | Bug fixes from UAT | 15 days | 02/02/24 08:00 | 22/02/24 17:00 | 101 |
| 103 | UAT regression testing | 4 days | 19/12/23 08:00 | 22/12/23 17:00 | 90 |
| 104 | Security Test (Inc: Bugs Fixing) | 15 days | 25/12/23 08:00 | 12/01/24 17:00 | 103 |
| 105 | Milestone – Test results document-Sign Off | 0 days | 12/01/24 17:00 | 12/01/24 17:00 | 104 |



| | Name | Duration | Start | Finish | Prede... |
|---|---|---|---|---|---|
| 106 | **System Deployment** | 20 days | **04/04/24 08:00** | **01/05/24 17:00** | **75** |
| 107 | Basic environment configuration | 10 days | 04/04/24 08:00 | 17/04/24 17:00 | |
| 108 | Installation | 5 days | 18/04/24 08:00 | 24/04/24 17:00 | 107 |
| 109 | Dedicated environment configuration | 5 days | 25/04/24 08:00 | 01/05/24 17:00 | 108 |
| 110 | **Pilot Run** | 47 days | **02/05/24 08:00** | **05/07/24 17:00** | **106** |
| 111 | Data Monitoring | 10 days | 02/05/24 08:00 | 15/05/24 17:00 | |
| 112 | Backup Data | 15 days | 16/05/24 08:00 | 05/06/24 17:00 | 111 |
| 113 | User feedback | 8 days | 06/06/24 08:00 | 17/06/24 17:00 | 112 |
| 114 | Change request analysis | 4 days | 18/06/24 08:00 | 21/06/24 17:00 | 113 |
| 115 | Change implementation buffer | 10 days | 24/06/24 08:00 | 05/07/24 17:00 | 114 |
| 116 | **System Switching** | 47 days | **08/07/24 08:00** | **10/09/24 17:00** | **110** |
| 117 | Data Back up | 10 days | 08/07/24 08:00 | 19/07/24 17:00 | |
| 118 | Preparing production environment | 7 days | 22/07/24 08:00 | 30/07/24 17:00 | 117 |
| 119 | Phased conversion | 30 days | 31/07/24 08:00 | 10/09/24 17:00 | 118 |




| | Name | Duration | Start | Finish | Prede... |
|---|---|---|---|---|---|
| 120 | **Closure** | 41 days | **11/09/24 08:00** | **06/11/24 17:00** | **56** |
| 121 | **Training** | 26 days | **11/09/24 08:00** | **16/10/24 17:00** | |
| 122 | Documentation | 10 days | 11/09/24 08:00 | 24/09/24 17:00 | 116 |
| 123 | User training | 16 days | 25/09/24 08:00 | 16/10/24 17:00 | 122 |
| 124 | Administrator training | 5 days | 25/09/24 08:00 | 01/10/24 17:00 | 122 |
| 125 | **Transition to BAU** | 10 days | **17/10/24 08:00** | **30/10/24 17:00** | **121** |
| 126 | Share information that relates to the overal | 5 days | 17/10/24 08:00 | 23/10/24 17:00 | |
| 127 | Create and share these materials for success | 5 days | 24/10/24 08:00 | 30/10/24 17:00 | 126 |
| 128 | Handover Signoff | 2 days | 31/10/24 08:00 | 01/11/24 17:00 | 125 |
| 129 | Milestone | 0 days | 01/11/24 17:00 | 01/11/24 17:00 | 128 |
| 130 | Signoff Project Done | 3 days | 04/11/24 08:00 | 06/11/24 17:00 | 129 |
| 131 | Milestone | 0 days | 06/11/24 17:00 | 06/11/24 17:00 | 130 |



## Project Communication Plan

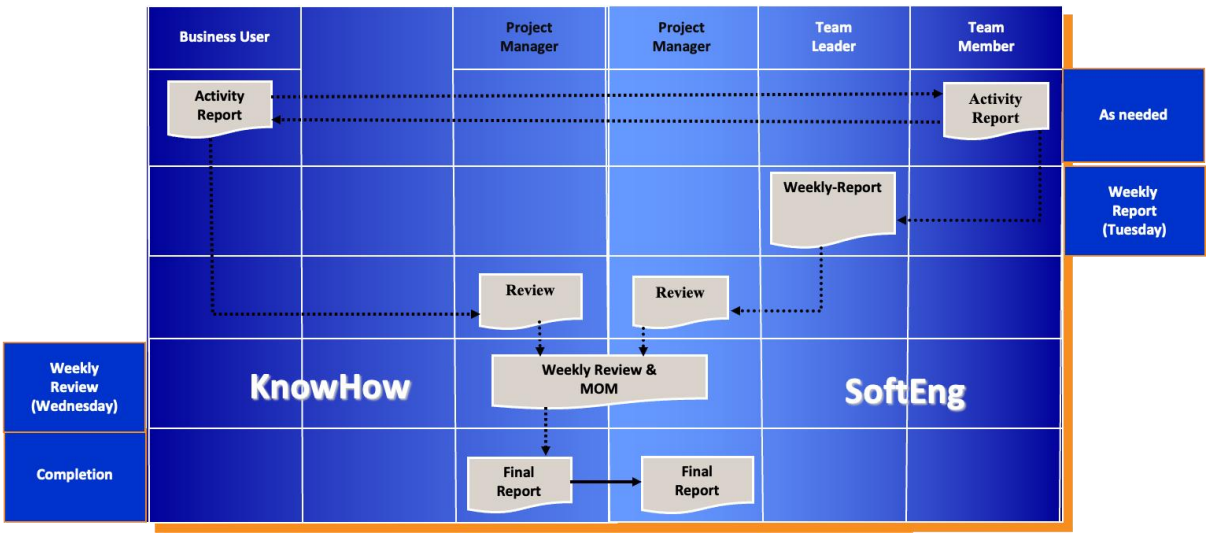



Fig 2: Communication channels

To control the project. Every Wednesday, Project managers from KnowHow and SoftEng conduct a weekly meeting to give progress on the past seven days and plan for the next seven. A meeting MOM is created, and the report is sent to all the stakeholders. The internal daily meeting is conducted, and the lead architect sends progress reports to the Project Manager weekly on Tuesdays. Communication and decision making for change request is as shown in fig 3.

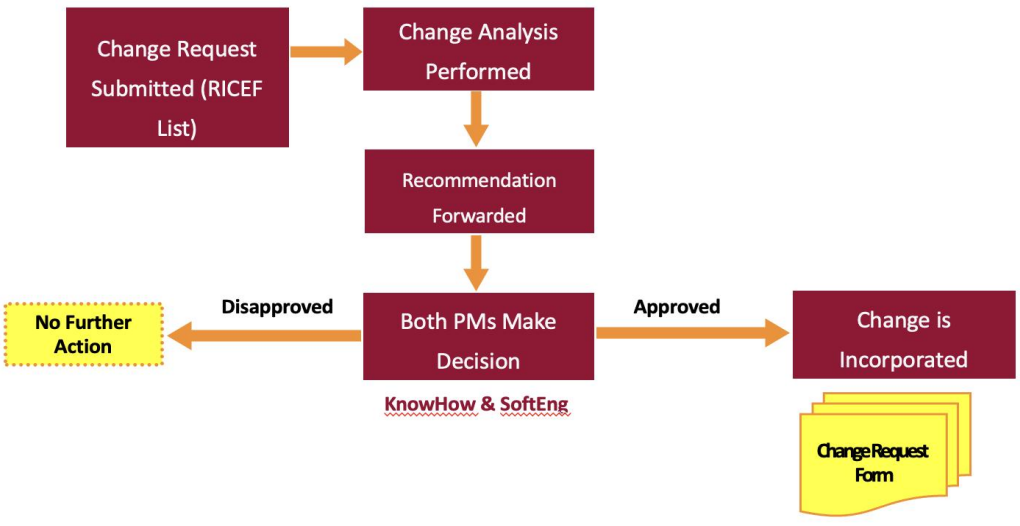



Fig 3: Change Control Management

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**Appendix**

Cloud Services Cost Comparison

| Cloud service | Storage | Price |
|---|---|---|
| AWS | | $0.023 GB/month |
| Azure | | $0.021 GB/month |
| Google Cloud | | $0.023 GB/month |
| Cloud service | instance/computing | Price |
| AWS | t4g.xlarge | $0.1344 |
| Azure | B4ms | $0.166 |
| Google Cloud | e2-standard-4 | $0.150924 |

Table 3: Price comparison between cloud service providers

Cloud Services Domination

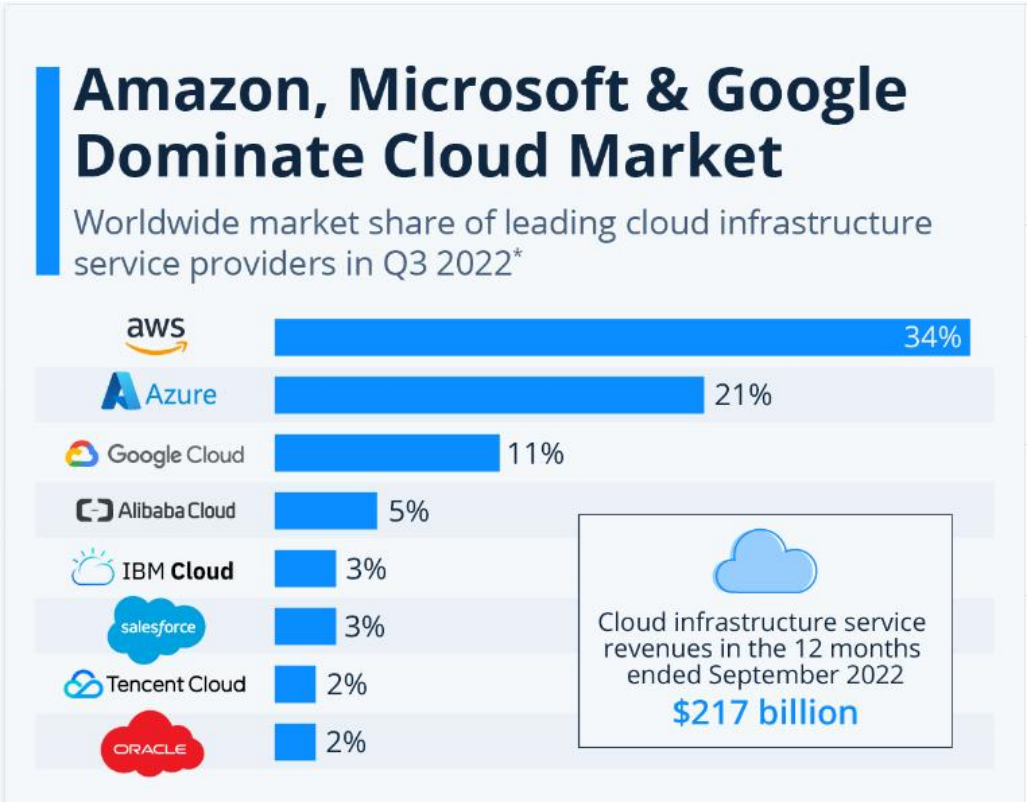


Fig 4: Market share of leading cloud providers.

Cloud Services Cost

| AWS Service | Configuration | Price per months |
|---|---|---|
| AWS S3 | Standard storage(5000 GB per month)<br>DT Inbound: Internet(1000 GB per month)<br>DT Outbound:Internet(500 GB per month) | 2,497.42 |
| AWS Athena | Total number of queries: 20 per day<br>Data amount scanned per query: 100GB | 240.61 |
| AWS Airflow | Version 1.10.12<br>50 concurrent workers for an hour per day | 363.51 |

Table 4: Amazon services

Employee Salary

| Job Role | In house/ Outsourced | Monthly Rate |
|---|---|---|
| PM | In house | 4137 |
| System Architect | In house | 5401 |
| QA Engineer | In house | 2582 |
| Frontend Engineer | Outsourced | 1647 |
| Backend Engineer | Outsourced | 2917 |
| Business Analyst | Outsourced | 2083 |

Table 5: Salary for employees per month

**Team Contract**

Group Number: Group 5 Date: 6th March 2023

| Project Team members (Names, Roles and Responsibilities) |
| --- |
| Leader: Akash<br>Moderator: Yohannes<br>Proof-reader: Akash, Yohannes, Shuman, Fanqi, Zhengyu, Jinming<br>Writer: Akash, Yohannes, Shuman, Fanqi, Zhengyu, Jinming<br><br>Other responsibilities with respect to generating the report and which part of the report each member should undertake and complete in the agreed timeline will be decided in the following meetings as the team work progresses. |
| Review – Fill in only if there have been updates |
| |
| Goals (what does the team hope to achieve) |

| |
|---|
| To generate a report for the project based on the given case study of 2000 words within the given time limit. The document will include Project Charter, Scope Management Plan, and Detailed Project Plan.<br>To maintain an efficient, friendly, and inclusive working environment. The<br>document itself will contain<br>Project Charter: It includes estimated cost, resources required, and outsourcing model<br>Scope Management Plan: to put into practice using agile or waterfall and develop WBS<br>Detail Project Plan: Based on DTL & WBS, a Gantt chart can produce, including the dependencies<br><br>To enhance analysis, teamworking, research, documentation, communication, time management, and task allocation skills.<br><br>To develop and practice information systems project management skills and knowledge |
| Review – Fill in only if there have been updates |
| |
| Means of Communication (how will you communicate, how frequently will you be meeting) |
| Frequency of communication: We expect to meet once a week in person and daily on WhatsApp. |

| |
|---|
| |
| Review – Fill in only if there have been updates |
| |
| Rules and Expectations (what do you expect from one another, how will decisions be made) |
| Attendance at meetings: We expect every member to attend all the meetings (both online and offline) on time.<br><br>Participation: We expect every member to contribute to the project and provide inputs and ideas during the meetings and group chats.<br><br>Quality of work: We expect the work to be error-free and abide by the unfair means guidelines.<br><br>We expect to support each other, clear doubts, and have discussions on the analysis of the whole case study to have the same understanding so that each member is on the same page and the individual works produced are in sync.<br><br>The availability of every member and common location will be confirmed before setting up a meeting and we expect every member to be present at the meetings. (The |

| |
|---|
| frequencies of meetings are decided depending on the progress of the work)<br><br>To meet the deadlines for personal work.<br><br>The medium of communication will be in English. To<br>abide by the unfair means guidelines.<br>Rules: Failing to abide by any of the above rules, a warning will be provided twice within a span of 5 days. Failing to provide an adequate reason and completing the work within the time frame specified in the warning, escalation will be done to the Teaching Assistant or Course Coordinator. |
| Review – Fill in only if there have been updates |
| |
| Consequences (how will non-performance be addressed, relative to rules and expectations so that the team can achieve its goals) |

| |
|---|
| Failing to abide by any rules and policies, a warning will be provided twice within a span of 5 days. Failing to provide an adequate reason and completing the work within the time frame specified in the warning, escalation will be done to the Teaching Assistant or Course Coordinator. |

| |
|---|
| *Review – Fill in only if there have been updates* |

| Team reflection (the cognitive process of the team) |
|---|
| In this group project, the motivated team members conducted their weekly team meetings based on the three principles of clarity of purpose, correctness of approach, and sincerity of attitude, fostering a casual and fun communication environment. When issues arose during meetings, the team members trusted one another to think and discuss them together to find the best answers. They also shared a common aim. At the same time, there is a distinct division of labor among the team members, with each having a specific task to complete. These duties complement one another, and the team as a whole work to coordinate the completion of this report. |
| *Review – Fill in only if there have been updates* |

We share these goals and expectations, and agree to the above procedures and consequences.

Team member name: Akash Rajendran Nair

Team member name: Yohannes Nugroho Asitua Simorangkir

Team member name: Shuman Chen

Team member name: Fanqi Meng

Team member name: Zhengyu Sun

Team member name: Jinming Yang