CC7169NI Software Project Management

Individual

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1. Memorandum

To: OmniSoft Technologies Inc. Management Team
From: Project Management Team
Date: April 20th, 2024

Subject: Establishment of Project Management Team for Omni CRM Implementation

Greetings Sir/Madam,

The purpose of this memorandum is to outline the structure and responsibilities of the newly established Project Management Team (PMT) tasked with overseeing the implementation of the Omni CRM system at OmniSoft Technologies Inc. The aim of the project is to implement the Omni CRM system, an online platform designed to upgrade our customer relationship management capabilities. This project is vital for enhancing customer service, streamlining sales processes, and improving data analytics to ensure the continued growth and competitiveness of OmniSoft Technologies Inc.

After careful consideration, the PMT has decided to adopt an Agile methodology for the implementation of the system. Agile methodologies will allow for flexibility and continuous feedback, ensuring that the system meets the evolving needs of stakeholders throughout the development process. Effective communication is crucial for the success of this project. Regular status meetings, feedback sessions, and communication channels will be established to keep stakeholders informed and engaged. The designated point of contact for all project-related inquiries is the Project Manager, who will ensure seamless communication between the PMT and stakeholders.

The Project Manager for the project is Kyle Jones, Director of Project Management. Kyle brings extensive experience in software project management and will be responsible for overseeing all aspects of the project, including scope, timeline, budget, and resource

management. The project is allocated a budget of $471,000 and is expected to commence on ‘2024-06-01’ and conclude on 2024-09-25. The PMT consists of cross-functional team members with expertise in project management, software development, quality assurance, and user experience design. Additionally, representatives from each development center (USA, Nepal, Kenya) will be included in the PMT to ensure alignment with local requirements and considerations. The establishment of the PMT marks a significant step forward in the successful implementation of the Omni CRM system. By employing Agile methodologies, fostering effective communication, and leveraging the expertise of our team members, we are confident in our ability to meet project objectives and deliver a superior CRM solution.

Thank you for your attention to this matter.
Best regards,
Manish Gurung
Project Manager
OmniSoft Technologies Inc.

2. Software Development Approach & Methods

The Software Development Approach, commonly known as the Software Development Life Cycle (SDLC), is a structured process which enables you to produce software that is high-quality and low cost together with the shortest production time possible. The SDLC outlines a detailed plan which consists of phases in which each has their own process and deliverables. This helps to enhance the development speed and minimizes the project risks and costs of production than with other alternatives. (synopsys, 2024)

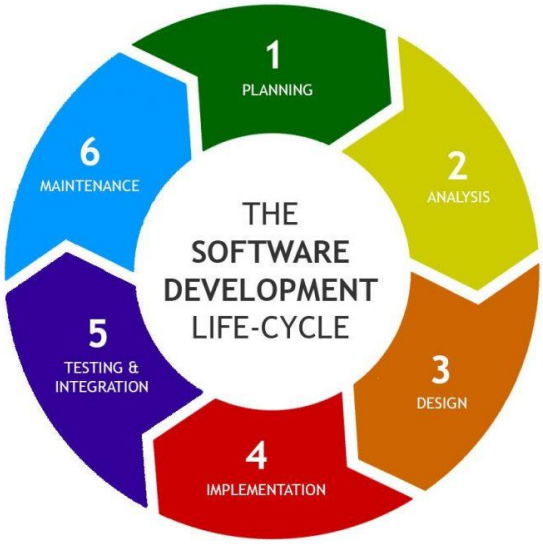

Figure 1: Software Development Lifecycle (SDLC) (Arkbauer, 2024)

There are various types of SDLC models and methodologies that are present such as Waterfall, Agile, Lean, Iterative, Spiral and V-Shaped. Although the various kinds of models have different processes, they all have similar fundamental stages that are required of a software development lifecycle. Below is a comparison of the Traditional and Agile Software development approaches prepared.

2.1. Traditional Approach

The Waterfall Model is a traditional approach to software development and is one of the earliest models to be used in software development. It is also referred to as a linear-sequential life cycle model and is the simplest and easiest to use and understand. In this model, each phase must be completed before the subsequent phase begins. There is no overlap between the phases present in this model. (tutorialspoint, 2024)

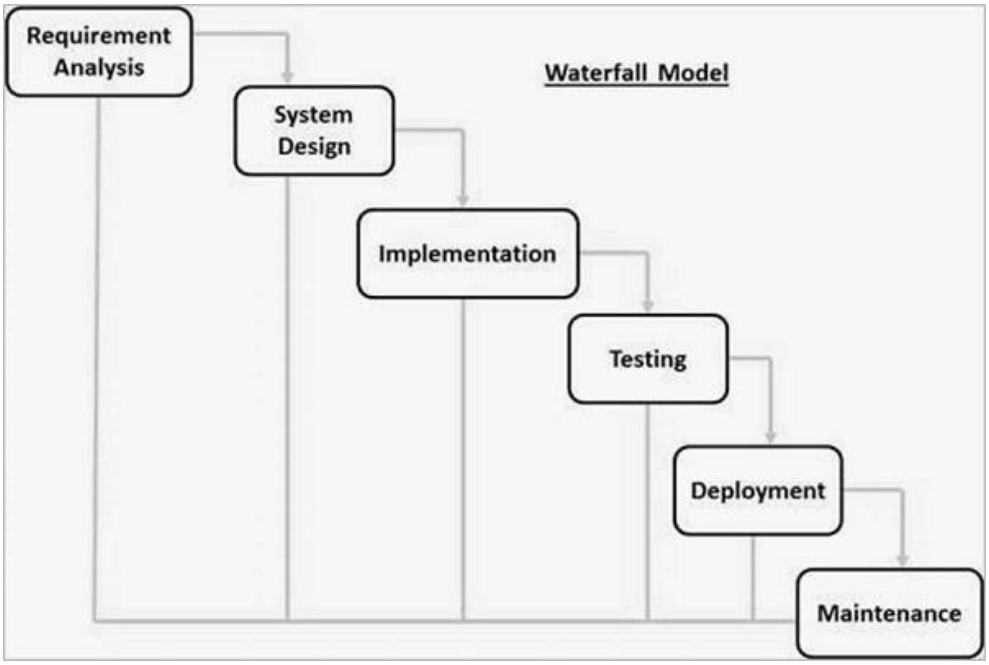

Figure 2: Waterfall Model (tutorialspoint, 2024)

Advantages

- Simple to Implement.
- Minimal resources required.
- Unchanged requirements throughout the entire development.
- Phase start and end dates are fixed.
- Easy to control.

2.2. Agile Approach

The Agile Model is a software development approach that is based on iterative development. In this approach, tasks are broken down into smaller iterations. The project scope and requirements are formed at the start of the development process which also contains the plans for the number of iterations, duration as well as the scope of each iteration. The division of the entire project into smaller parts helps to minimize the project risk and to reduce the overall project delivery time requirements. (javatpoint, 2024)

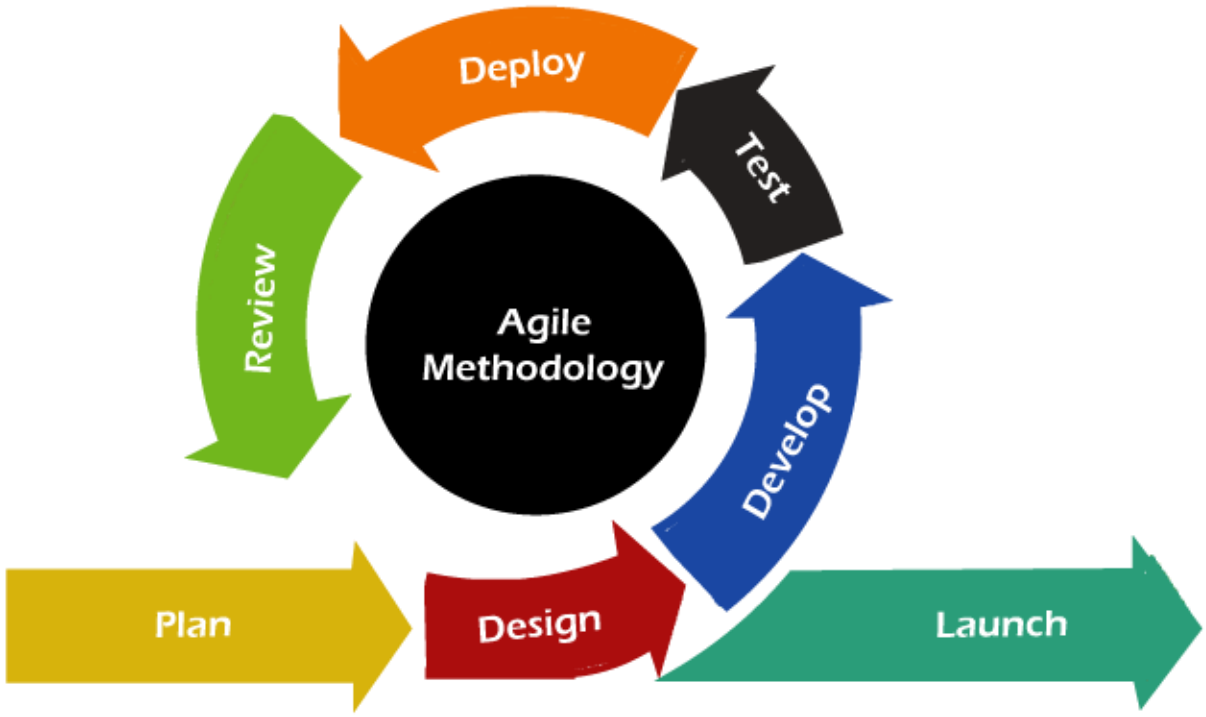

Figure 3: Agile Methodology (javatpoint, 2024)

Advantages

- Reduced total development time.
- Changes can be made anytime at any phase.
- Efficient design
- Frequent delivery

2.3. Traditional vs Agile Methodology

Aspect	Traditional Methodology	Agile Methodology
Development Process	Sequential phases (Requirements, Design, Implementation, Testing, Deployment)	Iterative and incremental cycles (Planning, Requirements Analysis, Design, Implementation, Testing, Deployment)
Flexibility	Limited flexibility once a phase is completed; changes are costly and time-consuming	Embraces change; allows for flexibility and adaptation to evolving requirements throughout the project
Feedback Loops	Limited feedback loops: stakeholders typically involved at the beginning and end of the project	Continuous feedback loops; stakeholders are involved throughout the project, providing feedback at each iteration
Risk Management	Risks are addressed at the beginning of the project and mitigated throughout the phases	Risks are identified and addressed iteratively throughout the project; frequent assessments and adaptations are made
Delivery Time	Longer delivery times due to sequential nature; product is delivered at the end of the project lifecycle	Shorter delivery time due to iterative approach; product is delivered incrementally, with potentially shippable increments after each iteration
Adaptability	Less adaptable to changes in requirements or market conditions; scope is typically fixed at the beginning	Highly adaptable to changes; scope can be adjusted based on feedback and evolving priorities

Quality Assurance	Testing is performed at the end of the development cycle; defects may be discovered late in the process	Continuous testing and quality assurance throughout the development cycle; defects are identified and addressed early
Team Collaboration	Limited collaboration between team members; roles are often siloed	Emphasizes collaboration and cross-functional teams; promotes communication and collaboration among team members
Documentation	Extensive documentation required upfront; may become outdated as the project progresses	Minimal documentation upfront; documentation is created as needed and evolves with the product

Table 1: Traditional vs Agile Methodology

2.4. Development Methodology

2.4.1. Kanban

Kanban is a framework under Agile methodology which was developed in the late 1940s by a Japanese engineer called Taiichi Ohno. This framework puts emphasis on visualizing the entire project to increase project transparency and collaboration between the team members. It is one of the simplest frameworks out there as it allows for efficient management and tracking of the projects. (kissiflow, 2023)

The four principles of the Kanban methodology are:

Begin with the Present: Concentrate on current tasks and thoroughly assess the existing processes to identify both strengths and shortcomings. (wrike, 2024)

Adopt Gradual Changes: Implement changes to your processes gradually over time rather than introducing drastic changes abruptly. (wrike, 2024)

Maintain Existing Roles: Kanban maintains existing team roles rather than suggesting new specific roles like some other frameworks do such as ScrumMaster. (wrike, 2024)

Promote Leadership at All Levels: Foster a culture where innovation and suggestions for improvements are encouraged by everyone in the organization, regardless of their position or title. (wrike, 2024)

2.4.2. Scrum

Scrum is a management framework that enables teams to self-organize and collaborate towards achieving a shared objective. It outlines various meetings, tools, and roles that facilitate effective project execution. Analogous to a sports team training for a major game, Scrum practices empower teams to self-regulate, gain insights from their experiences, and adjust to new challenges. Software teams often employ Scrum to address complex issues in a cost-effective and sustainable manner. (AWS, 2024)

Initiation Phase

The initiation phase marks the beginning of the Scrum development process. During this phase, the project's vision is clarified. Team roles are assigned, stakeholders are identified, and a project backlog is established to set the groundwork for the upcoming tasks. (Aftab, 2024)

Planning Phase

The second stage involves meticulous planning of the sprints. This stage is crucial for organizing the completion of the project backlog in manageable segments. During this phase, the team collaborates to determine the duration of each sprint and decide which backlog items will be tackled. (Aftab, 2024)

Implementation Phase

This is a critical phase where the actual work happens. The team will execute the plan by working through the sprints. The backlog is continuously updated as tasks are completed. This iterative process is a core part of the software development lifecycle (SDLC). (Aftab, 2024)

Reviewing Phase

The review phase focuses on evaluating the work done. Regular review meetings and feedback sessions are conducted to discuss the outcomes of each sprint. This phase allows for identifying any issues and making the necessary adjustments. Team members present their completed work, receive feedback, and collaborate on solutions for any project challenges. Adjustments needed for improvement are noted and reintegrated into the planning and implementation phases. (Aftab, 2024)

Releasing Phase

In the final stage, the completed product is delivered to stakeholders or clients. After the project is completed, a retrospective analysis of the sprint activities is conducted. The team discusses the efficacy of each sprint, sharing insights on performance and lessons learned to enhance future project outcomes. (Aftab, 2024)

2.5. Explanations for Choosing Scrum

Given Setup:	OmniSoft Technologies Inc. is launching a new CRM platform to improve and expand its services.
Attributes:	Time-boxed Sprints in Scrum
Reasoning:	Scrum's sprint system allows for fast-paced, iterative development that aligns with the company's goal to quickly innovate and adapt their CRM functionalities, ensuring that the CRM system evolves with customer needs and feedback.

Table 2: Explanation 1

Given Setup:	The project involves multiple stakeholders (e.g., sales teams, IT departments) across different countries.
Attributes:	Regular Sprint Reviews and Retrospectives
Reasoning:	Scrum facilitates regular feedback loops through sprint reviews, allowing stakeholders to provide input on the product continuously. This ensures that the final product meets diverse user requirements and can adapt to cross-cultural business practices.

Table 3: Explanation 2

Given Setup:	OmniSoft has development centers in the US, Kenya, and Nepal with local management teams.
Attributes:	Scrum Roles (Product Owner, Scrum Master, Development Team)
Reasoning:	Scrum's defined roles provide clarity in responsibilities, ensuring that each development center can self-manage and collaborate effectively despite geographical and cultural differences.

Table 4: Explanation 3

Given Setup:	The company faces the challenge of integrating the new CRM with existing systems.
Attributes:	Incremental Delivery Model of Scrum
Reasoning:	By delivering work in increments, Scrum allows for earlier testing and integration, which helps in identifying and resolving compatibility issues with existing systems gradually, rather than at the end of development.

Table 5: Explanation 4

Given Setup:	The need for frequent adaptation to the market and technology changes.
Attributes:	Flexibility and Adaptiveness of Scrum
Reasoning:	Scrum's sprint-based approach allows the team to pivot or make changes based on the latest market trends and technology advancements, ensuring the CRM remains competitive and cutting-edge.

Table 6: Explanation 5

Given Setup:	Importance of rapid deployment and early market entry for the CRM system.
Attributes:	Short Sprint Cycles
Reasoning:	Short cycles enable quicker releases of product features, allowing OmniSoft to deploy parts of the CRM sooner to the market, which is critical for maintaining competitive advantage.

Table 7: Explanation 6

Given Setup:	Project success is dependent on high stakeholder satisfaction and engagement.
Attributes:	Stakeholder Engagement in Scrum
Reasoning:	Scrum ensures that stakeholders are closely involved throughout the project via regular sprint reviews and planning sessions, increasing transparency and satisfaction by aligning development with business needs and expectations.

Table 8: Explanation 7

2.6. Justifications for not Choosing Kanban

Given Setup:	The project has a fixed deadline and a defined set of features expected for the initial launch.
Attributes:	Continuous Flow in Kanban
Reasoning:	Kanban's continuous flow model, without fixed iterations, might pose challenges in meeting specific deadlines or milestones, which is crucial for this strategically important project.

Table 9: Justification 1

Given Setup:	Need for structured phases and detailed planning due to complex integration with existing systems.
Attributes:	Lack of Time-boxed Iterations in Kanban
Reasoning:	Kanban does not emphasize time-boxing iterations which are beneficial for planning and executing complex integration tasks within strict timelines, potentially leading to project delays.

Table 10: Justification 2

Given Setup:	The project is high-profile, requiring substantial initial investment and rigorous budget tracking.
Attributes:	Kanban's Focus on Work in Progress (WIP) Limits
Reasoning:	While WIP limits improve process efficiency, Kanban's less prescriptive nature of budget and timeline control might not adequately support the strict financial monitoring required for this large-scale project.

Table 11: Justification 3

Given Setup:	OmniSoft is aiming for transformative change with this CRM implementation.
Attributes:	Gradual Improvement Focus on Kanban
Reasoning:	Kanban's focus on evolutionary change may be too incremental to achieve the transformative outcomes desired by the new CRM platform, which aims for a significant overhaul in customer interaction and data management.

Table 12: Justification 4

3. Business Case

Aim:

This project aims to significantly enhance customer relationship management at OmniSoft Technologies Inc. by upgrading existing systems to better meet evolving market demands and customer expectations. This project will contribute to the company's growth and maintain its competitive edge by improving customer service, streamlining sales processes, and leveraging advanced data analytics.

Objectives:

- Upgrade your existing customer relationship management system to meet evolving customer expectations.
- Improve customer service through faster response times, personalized interactions, and access to real-time customer data.
- Streamline sales processes to increase productivity and sales conversions.
- Enhance data analytics capabilities for data-driven decision-making and targeted marketing strategies.
- Ensure data security, privacy, and compliance with regulatory requirements.

Scope: The scope of the project includes:

- Detailed requirements gathering sessions with stakeholders to define project scope, objectives, deliverables, and success criteria.
- Development and integration of the Omni CRM system, including functionalities, integration with existing systems, and data migration from legacy systems.
- Implementation of robust security measures such as encryption, access controls, regular audits, and compliance checks.
- Training programs, workshops, and communication campaigns to promote user adoption and address resistance to change.

Team Setup:

- Project Manager: Responsible for overseeing all aspects of the project, including scope, timeline, budget, and resource management.
- Product Owner Represents the stakeholders and defines the product backlog, ensuring alignment with business objectives.
- Scrum Master: Facilitates the Scrum process, removes obstacles, and ensures adherence to Agile principles and practices.
- Development Team: Cross-functional team responsible for delivering increments of the Omni CRM system, including developers, testers, and UX/UI designers.
- Stakeholders: Representatives from sales teams, IT department, customer service, and top management.

Timeline and Budget:

The project is scheduled to commence on [start date] and conclude on [end date], with major milestones including scope definition, development, testing, deployment, and post-implementation support. The allocated budget for the project is $471,000, covering expenses related to personnel, technology, training, and other resources.

6. Benefits:

- Improved customer service through faster response times and personalized interactions.
- Streamlined sales processes leading to increased productivity and higher sales conversions.
- Enhanced data analytics capabilities for data-driven decision-making and targeted marketing strategies.
- Improved data security and compliance with regulatory requirements, ensuring trust and confidence among customers.

4. Project Plan

4.1. Team Structure

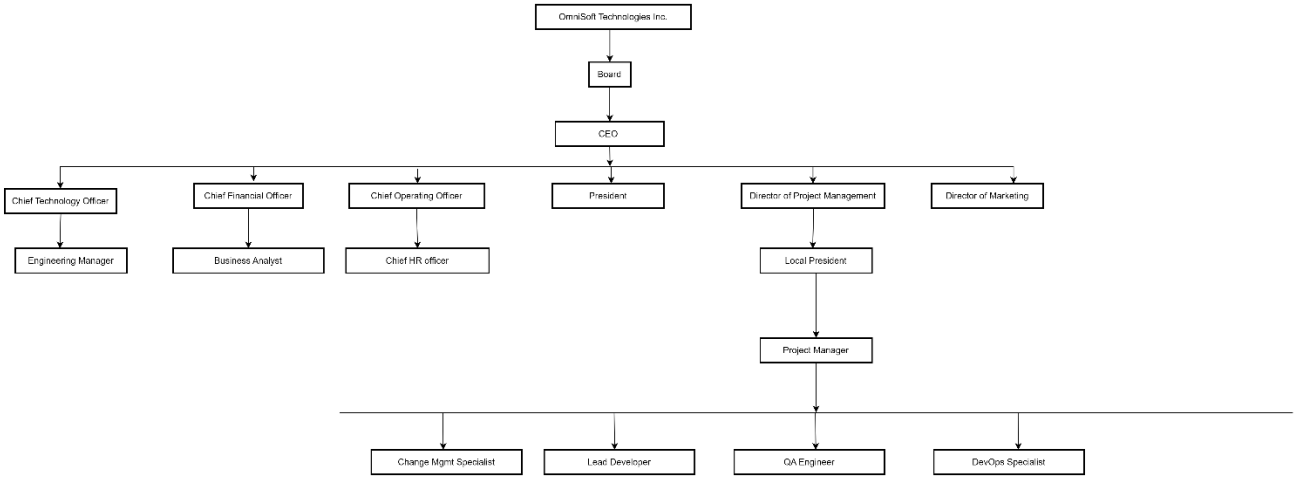

Figure 4: Team Structure

4.2. Team Role Description

Name	Organizational Role	Project Role
Richard Bed	Chief Executive Officer	Business Sponsor
Michael Williams	Chief Operating Officer	
Brad Kasper	Chief Financial Officer	
Julia Stephenson	Chief HR Officer	
Kevin Wilson	Chief Technology Officer	Technical coordinator
Robert Howles	President – USA	
Aditya Thapa	President - Nepal	
Bernard Bolsei	President – Kenya	
Kyle Jones	Director of Project Management	
Hari Sharma	Director of Marketing	
Manish Gurung		Project Manager

Table 13: Team Role Description

4.3. Feature Prioritization

Must Have	Should Have
• Real-time customer data access	• Advanced analytics capabilities
• Basic Reporting tools	• Customer segmentation tools
• Integration with existing systems	• Marketing Automation Features
• Basic Customer Support Features	• Sales Forecasting

Table 14: Feature Prioritization 1

Could Have	Won’t Have
• Mobile app version of the CRM	• Advanced AI-driven insights
• Social media Integration	• Offline Capabilities
• Multilanguage support	
• Customizable dashboards	

Table 15: Feature Prioritization 2

4.4. Project Budget Estimation

Task	Resource Type	Unit/Hours	Cost/Hr (USD)	Subtotals
Requirement Gathering	Business Analyst	100	50	$5,000
Development	Lead Developer	4000	75	$300,000
Quality Assurance	QA Engineer	800	40	$32,000
Deployment	DevOps Specialist	300	60	$18,000
Training & Change Management	Change Management Specialist	800	45	$36,000
Total				$391,000

Table 16: Project Budget Estimation

4.5. Project Plan

Activity	Start Date	End Date	Duration	Resources	Deliverables
Requirements Gathering	2024-06-01	2024-06-14	2 weeks	Business Analyst	Requirements Specification
Sprint 1 Development	2024-06-15	2024-06-28	2 weeks	Development Team	Initial CRM functionalities
Sprint 1 Review & QA	2024-06-29	2024-07-02	4 days	QA Engineer	Tested CRM functionalities
Sprint 2 Development	2024-07-03	2024-07-16	2 weeks	Development Team	Additional CRM functionalities
Sprint 2 Review & QA	2024-07-17	2024-07-20	4 days	QA Engineer	Further developed features tested
Sprint 3 Development	2024-07-21	2024-08-03	2 weeks	Development Team	Advanced Feature Integration
Sprint 3 Review & QA	2024-08-04	2024-08-07	4 days	QA Engineer	Integration testing completed
Sprint 4 Development	2024-08-08	2024-08-21	2 weeks	Development Team	Mobile and social media features
Sprint 4 Review & QA	2024-08-22	2024-08-25	4 days	QA Engineer	Mobile features tested
Sprint 5 Development	2024-08-26	2024-09-08	2 weeks	Development Team	Finalization of all features
Sprint 5 Review & QA	2024-09-09	2024-09-12	4 days	QA Engineer	Full feature testing and bug fixes
Training Preparation	2024-09-13	2024-09-19	1 week	Change Mgmt Specialist	Training Materials
Deployment	2024-09-20	2024-09-25	6 days	DevOps Specialist	CRM Deployment to Production

Post-Deployment Review	2024-09-26	2024-09-29	4 days	Project Manager	Project Review and Feedback Report

Table 17: Project Plan

5. Project Brief

5.1. Document Information

Project Name: Omni CRM Implementation

Date: May 1, 2024

Author: Manish Gurung, Project Manager

Owner: Richard Bed (CEO)

Client: OmniSoft Technologies Inc.

Version: 1.0

5.2. Project Definition

5.2.1. Background

OmniSoft Technologies Inc., a multi-national company with development centres in the USA, Kenya, and Nepal, is initiating the development of "Omni CRM," an online CRM platform. This initiative is part of the company's strategy to enhance its customer relationship management, streamline sales processes, and improve data analytics capabilities across its global operations.

5.2.2. Project Objectives

Objective 1: Deploy a fully functional CRM system by Q4 2024.

Objective 2: Ensure system scalability to handle 100,000 concurrent users.

Objective 3: Achieve GDPR compliance for data security and privacy.

Objective 4: Enhance customer engagement and data-driven decision-making capabilities.

Objective 5: Integrate seamlessly with existing enterprise applications and databases.

5.2.3. Desired Outcomes

Outcome 1: A scalable and secure online CRM platform.

Outcome 2: Improved customer satisfaction through enhanced service delivery.

Outcome 3: Increased sales conversions through effective lead and sales management.

Outcome 4: Streamlined operations and reduced operational costs.

5.2.4. Project Scope

The scope of the project includes the design, development, and deployment of the Omni CRM system with core functionalities such as customer data management, interaction tracking, sales management, and reporting tools.

5.2.5. Exclusions

The project will not retire any of the company's existing CRM systems.

The development of a mobile application was not included in the initial rollout.

5.2.6. Constraints and Assumptions

Scope

The initial scope of the Omni CRM project is limited to core functionalities including customer data management, interaction tracking, sales management, and basic reporting tools. Advanced features such as AI-driven analytics and complete mobile app support are excluded from the first release to ensure the project remains focused and manageable.

Cost

The total budget for the Omni CRM project is $471,000. This includes all aspects of the project from planning through to deployment. This cap requires strict financial management and careful handling of project activities to avoid overspending.

Time

The CRM system must be operational by Q4 2024 to align with the strategic goals of OmniSoft Technologies Inc. This firm deadline requires efficient project management to ensure that all phases, from development through testing and deployment, are completed on time.

Assumptions

1. Any third-party services or tools required for the project are assumed to be stable and reliable during the project duration.
2. End-users are assumed to be receptive to adopting a new CRM system, and little resistance is expected.
3. All key personnel, including the project manager, development team, and key stakeholders, are available throughout the project duration to ensure continuity and expertise.

5.2.7. Project Tolerances

Cost Tolerance: $471,000 +/- 10%

Time Tolerance: 4 months +/- 1 month

Scope of Tolerance:

5.2.8. User(s) and Any other Known Interested Parties

Board Members, Managers, Development team members, marketing department, customer service teams, IT department. Any updates regarding the project will be communicated to all the stakeholders involved.

5.2.9. Interface

- Training manuals and programs for the users and IT staff.
- Integration with the required tools is necessary.
- Product marketing strategy should be launched by the marketing team.

5.3. Outline Business Case

5.3.1. Reason

OmniSoft Technologies wishes to enhance its customer relationship management capabilities and maintain a competitive edge in the tech industry. Current CRM systems are insufficient to handle growing data and customer interaction across various global markets. The introduction of the Omni CRM platform aims to secure customer information, better organize sales processes, and provide analytics which helps to improve operations.

5.3.2. Benefits Expected

- By automating key CRM functions, the system will reduce manual tasks and errors, leading to more efficient operations.
- With better lead management and data accessibility, sales teams will be able to close deals faster and more effectively.
- Designed to handle up to 100,000 concurrent users, the CRM system will support OmniSoft's growth without the need for significant future modifications.
- CRM will provide deeper insights into customer behaviour and preferences, which will help to create personalized marketing strategies and improve customer retention.

5.3.3. Risks

- Challenges could be faced in integrating new CRM with existing systems. This could lead to delays and increased costs.
- Resistance to new systems by employees and customers could be faced.

5.3.4. Costs

The development costs of the project are estimated at $391,000 which includes payment for developers, analysts, and QA specialists. Additionally, $30,000 is allocated for training sessions, materials and change management activities as well as $50,000 for annual operational and maintenance cost.

5.3.5. Time

The project is scheduled to take approximately 4 months from initiation to deployment, with milestones set for the end of each 2-week sprint to measure progress and make necessary adjustments.

5.4. Project Product Description

Key Features:

- Customer Data Management: Secure storage and access to customer information.
- Sales Management: Tools for tracking sales pipelines and performance analytics.
- Marketing Automation: Automation of marketing campaigns and customer segmentation.
- Reporting and Analytics: Advanced reporting for real-time intelligence and trend analysis.
- User Interface: User-friendly for easy usability.

Quality Criteria:

- The system must handle up to 100,000 users without harm in performance.
- Ensure 99.9% uptime and have robust error handling and recovery procedures.
- Designed to be easy to use, it requires minimal training for basic functionality.

Quality Tolerances:

- Response times must not exceed 5 seconds under normal operating conditions.
- System availability should not fall below the agreed threshold except during planned maintenance.

5.5. Project Approach

The project is structured around an agile approach using the scrum methodology. The project is divided into two-week sprints for iterative development. Regular collaboration sessions will also take place with the stakeholders.

5.6. Project Management Team structure

Figure 5: Project Management Team Structure

5.7. Role Descriptions

Project Manager: Oversees project execution and ensures adherence to budget, scope, and timelines.

Scrum Master: Facilitates Scrum events and ensures all practices are followed.

Product Owner: Manages product backlogs, stakeholder interests, and requirements.

Development Teams: Develop CRM functionalities according to the defined sprints.

QA Teams: Ensure the product meets quality standards before each release.

6. PRINCE2

PRINCE2 (Projects IN Controlled Environments) is a project management methodology which puts emphasis on organization and control. The project management framework is linear and process-based, focusing on moving initiatives through predefined stages. This focuses on managing resources and risks by dividing projects into smaller stages, defining clear roles & responsibilities, and using seven processes to manage the project life cycle. (Malsam, 2021).

6.1. Seven Phases of PRINCE2

The seven stages of the PRINCE2 project guide the team from the beginning to the end of the project:

Start Up a Project: Initially, the project team drafts a preliminary project plan known as a project mandate, which outlines the basic concept of the project and establishes the business case. Once this initial outline gains approval, typically from the project board, a more comprehensive project brief is developed. (Laoyan, 2024)

Directing: In this phase, the project board evaluates the detailed project brief and determines the necessary steps for the project to proceed. Adjustments may be made to align the project with available resources or time constraints. (Laoyan, 2024)

Initiating a Project: A project manager is appointed by the project board to develop a detailed project plan. This plan sets the baselines for various project aspects such as time, cost, quality, scope, risk, and benefits. The project formally begins after the project board approves this detailed plan. (Laoyan, 2024)

Controlling: The project manager segments the project into smaller, more manageable parts and assigns these segments to team members for execution. (Laoyan, 2024)

Managing Product Delivery: During this stage, the project manager monitors the project's progress and ensures that the outputs adhere to the predefined quality standards. The project board then reviews these outputs and decides whether they meet the project’s standards or if further modifications are necessary. (Laoyan, 2024)

Managing Stage Boundaries: At each stage’s conclusion, the project board reviews the progress and decides whether to continue with the next stage or to stop the project altogether. (Laoyan, 2024)

Closing: In the final phase, the project manager wraps up the project by completing all necessary documentation, compiling outcomes, and finalizing reports. This marks the end of the project's lifecycle. (Laoyan, 2024)

6.2. PRINCE2 and Scrum Comparison

6.2.1. In terms of process

	PRINCE2	SCRUM
1.	**Starting up a Project**	**Sprint Planning**
	The project mandate outlines the project's necessity and aims, initiating the project with defined goals.	Sprint Planning involves the team selecting work from the product backlog to complete during the sprint, focusing on detailed tasks and immediate goals.
2.	**Directing a Project**	**Daily Scrum**
	The project board reviews project initiation documentation to approve the continuation or closure of a project.	Daily stand-up meetings where the development team synchronizes activities and plans for the next 24 hours.
3.	**Initiating a Project**	**Sprint Review**
	Comprehensive project planning and establishment of baseline metrics for six performance variables: cost, timescale, quality, scope, risk, and benefits.	At the end of each sprint, the team reviews the sprint's deliverables with stakeholders to adapt to the next sprint’s backlog based on feedback.
4.	**Controlling a Stage**	**Sprint Retrospective**
	Managing work packages within the project's stages, ensuring that all aspects of the project are controlled and within scope.	A meeting at the end of each sprint is used by the Scrum Team to reflect on the sprint and improve its processes.
5.	**Managing Product Delivery**	**Refinement**
	Ensuring that project deliverables meet quality requirements and are approved by the project board.	Ongoing process of updating the backlog items to ensure clarity and readiness for future sprints.

6.	**Managing Stage Boundaries**	**Sprint**
	Reviewing progress at the end of a stage, deciding if the project should proceed to the next stage or if it should be adjusted.	Fixed duration cycles where the team produces a potentially shippable product increment.
7.	**Closing the Project**	**Project Retrospective**
	Formal closure of the project, ensuring all deliverables are completed and accepted, and documenting lessons learned.	A reflection meeting was conducted at the end of the project to summarize lessons learned and prepare for future projects.

Table 18 : In terms of process

6.2.2. In terms of Roles

	PRINCE2	Scrum
1.	**Project Board Executive**	**Product Owner**
	Provides overall direction and external communications, making key decisions and providing resources.	Represents the stakeholders, prioritizing the backlog and ensuring the value of the work the team performs.
2.	**Executive**	**Scrum Master**
	Chairs the project board, ensuring project viability and overseeing overall risk management.	Facilitates Scrum processes, ensures the team follows Agile practices, and removes impediments.
3.	**Senior User**	**Development Team**
	Represents the interests of the end-users within the project, ensuring the solution meets their needs.	Self-organizing, cross-functional team members who develop the product incrementally.
4.	**Senior Supplier**	

	Represents supplier interests and ensures the project delivers a product suitable for the suppliers.	Scrum integrates all roles into the development team, focusing on product delivery without specific supplier representation.
5.	**Project Manager**	**Project Manager/Scrum Master**
	Manage the project's day-to-day aspects, ensuring deliverables meet the specifications within constraints.	The Scrum Master may take on some traditional PM roles in Scrum, focusing on facilitation and coaching rather than direct management.
6.	**Team Manager**	
	Manage a team within the project, often in larger projects with multiple teams.	In Scrum, the development team manages itself without a dedicated manager.
7.	**Project Support**	
	Provides administrative services and specialized tools to support the project.	Scrums do not typically have a separate support role; these functions are absorbed by the team.
8.	**Project Assurance**	**Whole Scrum Team**
	Ensures the project is staying on track and meeting standards without being directly involved in day-to-day activities.	Continuous feedback and iterative development in Scrum provides built-in project assurance through regular reviews and retrospectives.

Table 19 : In terms of Role

6.2.3. In terms of Deliverables

	PRINCE2	SCRUM
1.	**Project Initiation Documentation (PID)**	**Product Backlog**
	A document defining the project scope, management approach, and how the project's outputs will be delivered.	A prioritized list of project requirements and features, with flexibility to adjust based on feedback.
2.	**Business Case**	**Sprint Goal**
	Document detailing the justification for the project based on costs, benefits, and risks.	A short, descriptive statement of what the team plans to achieve during the sprint.
3.	**Risk Register**	**Increment**
	A detailed log of potential risks and their mitigation strategies.	A usable set of features were completed during a sprint, adding to previously built increments.
4.	**End Stage Reports Lessons Learned Report**	**Sprint Review Document**
	Regular updates at the end of each stage detailing progress and issues.	A summary of what was accomplished and what has changed in the product backlog after the sprint.
5.	**Lessons Learned Report**	**Retrospective Notes**
	A report detailing what has been learned during the project for future reference.	Insights and improvements identified during the retrospective meeting at the end of each sprint.

Table 20 : In terms of Deliveries

7. References

Aftab, Z., 2024. *What Is Scrum Development Strategy & Its 5 Stages?.* [Online]
Available at: https://hapy.co/journal/what-is-scrum/
[Accessed 24 April 2024].

Arkbauer, 2024. *Software Development Lifecycle (SDLC).* [Online]
Available at: https://arkbauer.com/blog/software-development-life-cycle-sdlc/
[Accessed 25 April 2024].

AWS, 2024. *What is Scrum?.* [Online]
Available at: https://aws.amazon.com/what-is/scrum/
[Accessed 23 April 2024].

javatpoint, 2024. *Agile Model.* [Online]
Available at: https://www.javatpoint.com/software-engineering-agile-model
[Accessed 2 April 2024].

javatpoint, 2024. *Difference between Agile and Waterfall model.* [Online]
Available at: https://www.javatpoint.com/agile-vs-waterfall-model
[Accessed 26 April 2024].

kissiflow, 2023. *Kanban Methodology: The Simplest Agile Framework.* [Online]
Available at: https://kissflow.com/project/agile/kanban-methodology/
[Accessed 23 April 2024].

Laoyan, S., 2024. *What is the PRINCE2 project management methodology?.* [Online]
Available at: https://asana.com/resources/prince2-methodology
[Accessed 28 April 2024].

Malsam, W., 2021. *What Is PRINCE2? Principles, Aspects, Roles & Processes.* [Online]
Available at: https://www.projectmanager.com/blog/prince2-methodology
[Accessed 28 April 2024].

synopsys, 2024. *Software DEvelopment Life Cycle(SDLC).* [Online]
Available at: https://www.synopsys.com/glossary/what-is-sdlc.html
[Accessed 25 April 2024].

tutorialspoint, 2024. *SDLC -Waterfall Model.* [Online]
Available at: https://www.tutorialspoint.com/sdlc/sdlc_waterfall_model.htm
[Accessed 25 April 2024].

wrike, 2024. *What Is Kanban? The Ultimate Guide to Kanban Methodology.* [Online]
Available at: https://www.wrike.com/kanban-guide/what-is-kanban/
[Accessed 23 April 2024].