QUEST
PROJECT CHARTER

Version 1.6
September 24, 2023

Team 1

VERSION HISTORY

Version #	Implemented By	Revision Date	Approved By	Approval Date	Reason
1.0	Kajal Tomar	09/26/23	Richard Marinas Jr.	09/26/23	Initial version
1.1	Rishavjot Singh	09/26/23	Kajal Tomar, Richard Marinas Jr.	09/26/23	Worked on the project overview
1.2	Casandra Hayward	09/27/23	Logan Doran, Rishavjot Singh, Richard Marinas Jr.	09/27/23	Worked on the project scope section
1.3	Logan Doran	09/28/23	Casandra Hayward, Richard Marinas Jr.	09/28/23	Worked on the project timeline
1.4	Kajal Tomar	09/28/23	Logan Doran, Richard Marinas Jr.	09/28/23	Worked on the project assumptions, constraints, and risks section
1.5	Team 1 (executives)	09/29/23	Team 1 (executives)	09/29/23	Revised document based on the customer's input
1.6	Team 1 (executives)	09/29/23	Team 1 (executives)	09/29/23	Finalized the document

Name	Email	Period of being project manager
Kajal Tomar	tomark@myumanitoba.ca	September 24 – September 29, 2023
Logan Doran	doranl1@myumanitoba.ca	September 30 – October 13, 2023
Casandra Hayward	haywardc@myumanitoba.ca	October 14 – October 27, 2023
Richard Marinas Jr.	marinarj@myumanitoba.ca	October 28 – November 10, 2023
Rishavjot Singh	singhr51@myumanitoba.ca	November 11 – November 24, 2023

TABLE OF CONTENTS

1 INTRODUCTION

1.1 PURPOSE OF PROJECT CHARTER

Quest I's project charter documents and tracks the necessary information required by decision maker(s) to approve the project for funding. The project charter includes the needs, scope, justification, and resource commitment as well as the project's sponsors' decision to proceed or not to proceed with the project. It was created during the Initiating Phase of the project.

The intended audience of the Quest I project charter is the project sponsor and senior leadership at Team 1.

2 PROJECT AND PRODUCT OVERVIEW

This project will build an online virtual phone system for MonkeyBiz Limited Co. to replace physical landlines by allowing making and receiving calls through the internet and cloud. This would allow them to compete with systems like Skype, eventually helping their company to make money by monetizing this system.

The estimated duration for the whole project is 15 months, where the first 3 months would be dedicated towards building and delivering the Minimal Viable Product (MVP), and there would be 12 months after that to deliver the final project. The overall budget of $500,000 is assigned for the entire project, where $120,000 is available for the MVP.

The system will be based on the client-server model. The App will be available for end user devices such as laptops, smartphones, and desktop computers. The MVP will support basic call processing, user account management, and billing functionalities. The final product will add new features including a dialing plan, system console, and load balancing.

3 JUSTIFICATION

3.1 OBJECTIVES

The objectives of the Quest I are as follows:

- Our goal is to develop a client-server model using an application that can be deployed on the most relevant laptops, smartphones, and desktops to our target audience. Such, that our application is guaranteed to be compatible with 85% of our user's current devices by December 29, 2023. The team will accomplish this goal by building the architecture to utilize defaults and standard practices that should not change between systems. In addition to rigorous testing on the targeted devices to ensure that the application works as expected regardless of the hardware. Accomplishing this goal will allow our software to not only reach 85% of our targeted user base upon launch. It will also lay a strong foundation that should make our system easily compatible with future hardware as default standards change infrequently. This will end up

saving the company the time and money that would be required to update the code every time a system is updated.

- Another goal is for the application to begin making money from the moment the application is launched. We expect our application to immediately begin creating revenue through the billing feature that our team will implement. We expect to see a return on investment of 5% by 29 April 2024. Accomplishing this goal will help to show that the product is viable, and the revenue produced from the minimum viable product will help the client pay for the rest of the project.

- An important goal is to ensure user satisfaction with the application. Our team will accomplish this by ensuring that the application is simple and easy to use for new and returning customers. As well as ensuring that the application is efficient and that issues such as calls dropping or not being able to connect are infrequent. We will measure user satisfaction through a survey we will send out to customers at the end of the first month after release to gauge their satisfaction. We expect an average rating of 3 stars or better on a 5-star scale where 5 is the best and 1 is the worst. Additionally, we will also track instances of calls not being connected and calls dropping. At the end of the first month after release, we expect to see no more than 5% of calls dropped and no more than 5% of calls not being connected. Accomplishing this goal will help to build the confidence of users in the application. Thus, encouraging their continued use of the application as well as the potential for them to refer new clients. This will help maintain and continue to grow the user base for the application.

- Another goal is to successfully manage 10,000 users making calls concurrently without any calls being dropped unexpectedly. The team will accomplish this by working with administrators to determine a safe maximum number of calls and ensuring that the number of active calls does not exceed the maximum. This feature should be completed by the end of the 15-month project. Accomplishing this goal will ensure that we are maximizing the potential profit for the application without overloading the system. Overloading the system would end up damaging the application’s reputation and its reliability.

- Our goal is to have documentation with 75% coverage of all the major features including how they were built and how they function from the user's perspective. We intend to complete this goal by January 29, 2025, in time for the end of our 15-month project. The developers and quality assurance teams will accomplish this goal by documenting how the features function from a code and user perspective as well as documenting automated tests. This documentation will be completed throughout the project as features and tests are created. Accomplishing this goal will make maintaining, updating, and explaining the application easier for the client.

3.2 HIGH-LEVEL REQUIREMENTS

The following table presents the requirements that the project's product, service, or result must meet in order for the project objectives to be satisfied.

Req. #	Requirement Description
1	Set up a client-server communication model that uses sockets to ensure that our system will withstand the test of time.
2	Call feature that creates an audio connection between clients, and we must ensure that it is reliable.
3	Control console that administrators can use to set up accounts.
4	Account feature to ensure that when a user attempts to make a call they reach the intended recipient.
5	Ensure users attempting to make a call are connected to the correct person.
6	Implement load balancing to handle 10,000 concurrent calls.
7	There must be documentation for the administrative features explaining how to use them and how they are built.
8	There must be documentation for the client interface explaining how to use it and how it was built.
9	There must be documentation for the billing system explaining how it works and how it was built.

3.3 MAJOR DELIVERABLES

The following table presents the major deliverables that the project's product, service, or result must meet in order for the project objectives to be satisfied.

Major Deliverable	Deliverable Description
Minimum Viable Product	The minimum viable product will be an early version of the product consisting of the following features: basic call processing, user account management, and billing functionalities. It will be deployed locally at MonkeyBiz Limited Co.
Final Product	The final product will contain all the desired features outlined by the client and will meet the objectives and requirements detailed in section 3.4.
Documentation	This will consist of all the documentation related to maintaining and using the product.

3.4 SCOPE

Basic Call Processing: Users will be able to send and receive calls.

Dialing Plan: The system will maintain a mapping from dialed numbers to (IP address, port) pairs to translate the dialed number by a caller into the IP address and port of the recipient.

System Console: A graphical user interface would be developed for the administrators to monitor and control the network.

User Accounts: The administrators will be able to assign phone numbers to the new users and associate them to the IP addresses.

Load Balancing: The system will allow the administrators to limit the maximum number of calls allowed in the system.

Billing: The system will be able to track every established call and users will be sent the bills showing all the charges for the billing periods.

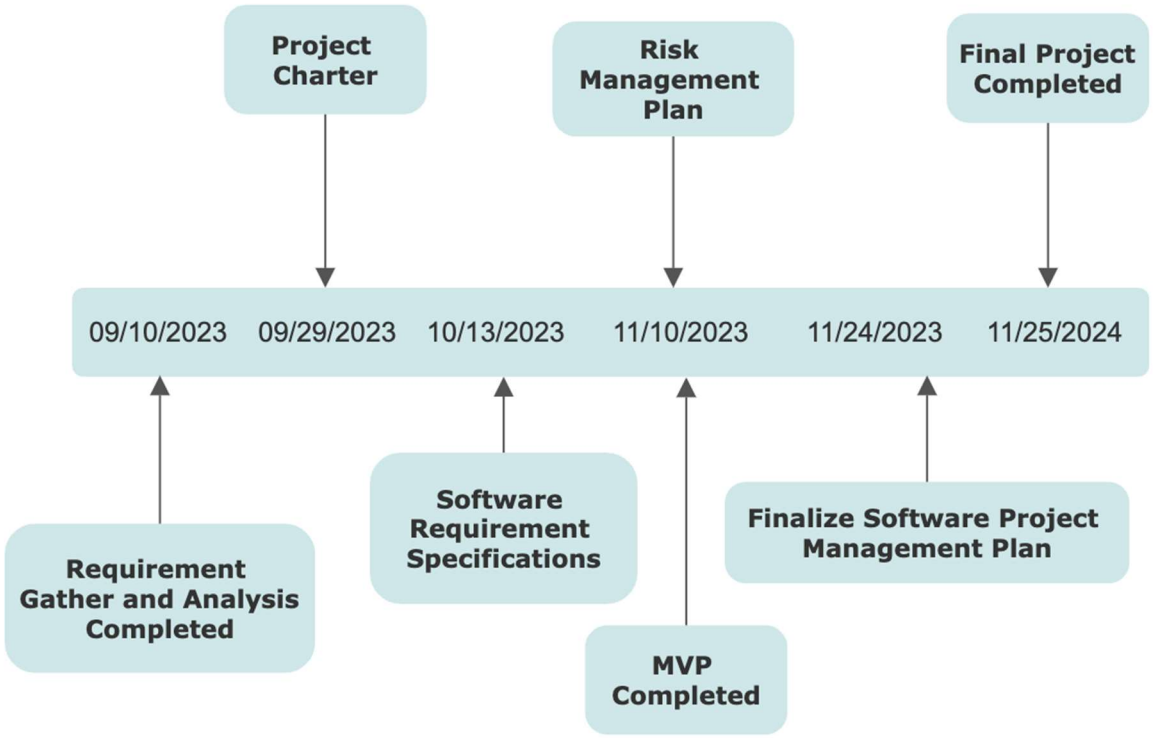
FUTURE EXPANSION OPPORTUNITIES

Items outside the boundaries of this project may be considered for future development phases.

- Text Messaging
- Video Calls
- Voicemail
- Playback
- Group Calling

4 DURATION

4.1 TIMELINE



4.2 EXECUTIVE MILESTONES

The table below lists the high-level Executive Milestones of the project and their estimated completion timeframe.

Executive Milestones	Estimated Completion Timeframe
Requirement Gather and Analysis Completed	09/09/23 - 09/10/23
Project charter completed	09/24/23 - 09/29/23
Software Requirements Specifications	09/30/23 - 10/13/23
MVP Completed	11/09/23 - 11/10/23
Risk Management plan	11/09/23 - 11/10/23
Finalized Software Project Management Plan	11/23/23 - 11/24/23
Final Project Complete	12 months after the completion of the MVP

5 ASSUMPTIONS, CONSTRAINTS AND RISKS

5.1 ASSUMPTIONS

This section identifies the statements believed to be true and from which a conclusion was drawn to define this project charter.

- Only one Administrator accesses the system at a time.
- Every Administrator has access to all the features of the System Console.
- One user can only make a call to one other user.
- Assigning a given phone number to an available IP address is a manual process performed by the Administrator.
- The System Console is responsible for checking the Administrator's input to ensure that it does not cause the database to become inconsistent.
- The Administrator is responsible for setting the maximum number of calls allowed in the system.
- The billing system will support payment.
- Changes to a user's billing plan take effect immediately.

5.2 CONSTRAINTS

This section identifies any limitation that must be taken into consideration prior to the initiation of the project.

- Minimal Viable Product (MVP) must be completed within 3 months.
- A total budget of $500K is allocated for the entire project, with only $120K available for the expenditure during the initial 3 months, which is dedicated to getting the MVP up and running.
- The final product must be able to support 10,000 active users talking at the

same time.

- Communication between your server and each client must occur over sockets.
- The App must be compatible with laptops, smartphones, and desktop computers.
- To facilitate basic call processing the system needs to construct and maintain a mapping from dialed numbers to (IP address, port) pairs. This mapping needs to be accessible to the System Console (administration) and the software that does the Call Processing (user).
- Phone numbers, also referred to as extensions, consist of 4-digits. We can designate specific numbers special if necessary.
- The software is responsible for checking that the dates and times of the discount periods do not overlap.

5.3 RISKS

Risk	Mitigation
The MVP will be deployed locally at the customer's corporation, while the final product will be made available to the entire country. The corporation's employees may not represent the final users.	Inform the client of this risk as soon as possible so that customer feedback can be acquired early and often.
The system must be able to expand effectively as the client's user base grows.	Keep scalability in mind when designing the system. For instance, some functions, such as finding an available phone number, should be atomic. This will make it easier to extend the system to accommodate multiple administrators in the future if the requirements change.
Keeping phone numbers only 4 digits long provides us with only 10,000 unique combinations, even fewer if we consider special numbers.	Discuss the possibility of increasing the length of a phone number to allow for scalability.
The administrators input data and make decisions that could make the system vulnerable to human errors. For example, we could introduce network congestion since the administrator is responsible for setting the maximum number of calls.	Implement safety measures in the system to ensure that the administrator only has access to secure options. Additionally, sanitize all input and validate its correctness. For this example, define a threshold that the system can dynamically set depending on the network traffic. This will reduce system downtime due to human error.
There is a privacy and security risk because we are storing people's information.	Anonymize the data. In addition, abide by The Personal Information Protection and Electronic Documents Act (PIPEDA) when storing user information (IP addresses, phone numbers, etc.) in

Risk	Mitigation
	Canada. Also, adhere to relevant policies and laws for other countries.

6 PROJECT ORGANIZATION

6.1 STAKEHOLDERS (INTERNAL AND EXTERNAL)

Internal

- Director – Dr. Shaowei Wang
- Executive Team – Logan Doran, Kajal Tomar, Casandra Hayward, Rishavjot Singh, Richard Marinas Jr.
- Project manager
- Team members – developers, analysts, testers

External

- Customer – business owners and project sponsor
- Users – clients of customer
- Phone companies
- Investors
- Traditional Phone users

6.2 ROLES AND RESPONSIBILITIES

This section describes the key roles supporting the project.

Name & Organization	Project Role	Project Responsibilities
Shayan Daneshvar MonkeyBiz Limited Co.	Project Sponsor	Person responsible for acting as the project's champion and providing direction and support to the team. In the context of this document, this person approves the request for funding, approves the project scope represented in this document, and sets the priority of the project relative to other projects in his/her area of responsibility.
Logan Doran, Kajal Tomar, Casandra Hayward, Rishavjot Singh, Richard Marinas Jr. Team 1	Executive Team	The executive team is comprised of the Project Managers. They define high level goals and strategies for the organization and provide leadership.
Kajal Tomar Team 1	Project Manager	Person who performs the day-to-day management of the project and has specific accountability for managing the project within the

Name & Organization	Project Role	Project Responsibilities
		approved constraints of scope, quality, time and cost, to deliver the specified requirements, deliverables and customer satisfaction.
(To Be Decided) TBD Team 1	Developer	Person who performs the day-to-day development and maintenance of the project
TBD Team 1	Business Analyst	Person who will gather requirements and communicate with the stakeholders.
TBD Team 1	Tester	Person who will develop test cases and test the solution.

7 PROJECT CHARTER APPROVAL

The undersigned acknowledge they have reviewed the project charter and authorized and fund the Quest I project. Changes to this project charter will be coordinated with and approved by the undersigned or their designated representatives.

Signature:	Kajal Tomar	Date:	09/29/2023
Print Name:	Kajal Tomar		
Title:	Project Manager		
Role:	Project Manager		

Signature:	Shayan Daneshvar	Date:	09/29/2023
Print Name:	Shayan Daneshvar		
Title:	Project Sponsor		
Role:	Representative of MonkeyBiz Limited Co.		

APPENDIX A: REFERENCES

The following table summarizes the documents referenced in this document.

Document Name and Version	Description	Location
Online Virtual Phone System Publish Year: 2023	This is the project overview provided by MonkeyBiz Limited Co. It describes the projects, desired features, and constraints.	https://umanitoba-my.sharepoint.com/:w:/g/personal/shaowei_wang_umanitoba_ca/EX6PKNTuX1hGomL4NyNYSIcBHg5ImCFl2BPrVJnFbBWIsQ?e=prDfNs
Chapter 18: Quality Software Project Management, By Robert T. Futrell, Donald F. Shafer, Linda I. Safer Publish Date: January 24, 2002	This chapter discusses risk management in Project management. It introduced what Risk management is, how to identify, analyze, quantify, and control risks. It also discussed several risk categories.	In UM Learn for COMP-4050-A01 - Project Management: Table of Contents > Textbook > Quality Software Project Management.
Monkey on The Telephone Uploaded on November 30th, 2021	Monkey on The Telephone is a drawing by CSA Images	https://fineartamerica.com/featured/monkey-on-the-telephone-csa-images.html