GO WHERE GAIGAI

RISK MANAGEMENT PLAN

Version <1.0>
<19/9/2022>

VERSION HISTORY

Version #	Implemented By	Revision Date	Approved By	Approval Date	Reason
1.0	Isaac Soh	19/9/2022	Eugene Lim	19/9/2022	Risk Management Plan First Version

UP Template Version: 11/30/06

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1 INTRODUCTION

1.1 PURPOSE OF THE RISK MANAGEMENT PLAN

A risk is an event or condition that, if it occurs, could have a positive or negative effect on a project's objectives. Risk Management is the process of identifying, assessing, responding to, monitoring, and reporting risks. This Risk Management Plan defines how risks associated with the "Go Where GaiGai" project will be identified, analyzed, and managed. It outlines how risk management activities will be performed, recorded, and monitored throughout the lifecycle of the project and provides templates and practices for recording and prioritizing risks.

The Risk Management Plan is created by the project manager in the Planning Phase of the CDC Unified Process and is monitored and updated throughout the project.

The intended audience of this document is the project team, project sponsor and management.

2 RISK MANAGEMENT PROCEDURE

2.1 PROCESS

The project manager, Eugene Lim, working with the project team and project sponsors will ensure that risks are actively identified, analyzed, and managed throughout the life of the project. Risks will be identified as early as possible in the project so as to minimize their impact. The steps for accomplishing this are outlined in the following sections. The QA Manager will serve as the Risk Manager for this project.

2.2 RISK IDENTIFICATION

Risk identification will involve the project team, appropriate stakeholders, and will include an evaluation of environmental factors, organizational culture and the project management plan including the project scope. Careful attention will be given to the project deliverables, assumptions, constraints, WBS, cost/effort estimates, resource plan, and other key project documents.

A Risk Management Log will be generated and updated as needed and will be stored electronically in the project library located at 155.69.100.27/3002s12223_TS4ONE/index.php/Main_Page.

2.3 RISK ANALYSIS

All risks identified will be assessed to identify the range of possible project outcomes. Qualification will be used to determine which risks are the top risks to pursue and respond to and which risks can be ignored.

2.3.1 Qualitative Risk Analysis

The probability and impact of occurrence for each identified risk will be assessed by the project manager, with input from the project team using the following approach:

Probability

- High – Greater than 70% probability of occurrence
- Medium – Between 20% and 70% probability of occurrence
- Low – Below 20% probability of occurrence

Impact

Impact				
	H	1) Web Server crashes 2) Database crashes	1) Change of data structure of API 2) Software bugs	
	M	1) Unable to handle server traffic 2) API Malfunction	1) Man hours underestimation	
	L	1) Inadequate Domain expertise	1) Conflicts among team members 2) Other project commitments	
		L	M	H
			Probability	

- High – Risk that has the potential to greatly impact project cost, project schedule or performance
- Medium – Risk that has the potential to slightly impact project cost, project schedule or performance
- Low – Risk that has relatively little impact on cost, schedule or performance

Risks that fall within the RED and YELLOW zones will have risk response planning which may include both a risk mitigation and a risk contingency plan.

2.3.2 Quantitative Risk Analysis

Analysis of risk events that have been prioritized using the qualitative risk analysis process and their effect on project activities will be estimated, a numerical rating applied to each risk based on this analysis, and then documented in this section of the risk management plan.

Risk	Impact	Probability	Level of Control	Overall Score
Web Server Crashes	3	1	2	6
Database Crashes	3	1	2	6
Unable to handle server	2	1	2	5

traffic				
API Malfunction	2	1	1	4
Inadequate Domain expertise	1	1	1	3
Change of Data structure of API	3	2	2	7
Software Bugs	3	2	2	7
Other project commitments	2	2	1	5
Man hours underestimation	2	2	2	6
Conflicts among team members	1	2	1	4

2.4 RISK RESPONSE PLANNING

Each major risk (those falling in the Red & Yellow zones) will be assigned to a project team member for monitoring purposes to ensure that the risk will not "fall through the cracks".
For each major risk, one of the following approaches will be selected to address it:

- **Avoid** – eliminate the threat by eliminating the cause
- **Mitigate** – Identify ways to reduce the probability or the impact of the risk
- **Accept** – Nothing will be done
- **Transfer** – Make another party responsible for the risk (buy insurance, outsourcing, etc.)

For each risk that will be mitigated, the project team will identify ways to prevent the risk from occurring or reduce its impact or probability of occurring. This may include prototyping, adding tasks to the project schedule, adding resources, etc.
For each major risk that is to be mitigated or that is accepted, a course of action will be outlined for the event that the risk does materialize in order to minimize its impact.

For each of the major risks, we will be applying one of the 4 approaches mentioned above.

Risk	Approach	Remarks
Web Server Crashes	Avoid	Investment of high quality and highly scalable servers will be used to avoid any crashes
Database Crashes	Avoid	Investment of high quality

		and highly scalable servers will be used to avoid any crashes
Change of Data structure of API	Accept	API does not belong to us and is bound to be changed. The team will accept it and make the necessary preprocesses to clean the data.
Software Bugs	Mitigate	Analysis as well as testing will be conducted routinely during each development phase to minimize bugs.
Man hours underestimation	Avoid	Weekly meetings will be held to ensure that everything is on track and additional manpower will be assigned if necessary.

2.5 RISK MONITORING, CONTROLLING, AND REPORTING

The level of risk on a project will be tracked, monitored and reported throughout the project lifecycle.
A "Top 10 Risk List" will be maintained by the project team and will be reported as a component of the project status reporting process for this project.
All project change requests will be analyzed for their possible impact to the project risks.
Management will be notified of important changes to risk status as a component to the Executive Project Status Report.

3 TOOLS AND PRACTICES

A Risk Log will be maintained by the project manager and will be reviewed as a standing agenda item for project team meetings.

RISK MANAGEMENT PLAN APPROVAL

The undersigned acknowledge they have reviewed the **Risk Management Plan** for the "Go Where GaiGai" project. Changes to this Risk Management Plan will be coordinated with and approved by the undersigned or their designated representatives.

Signature:		Date:	10/6/2022
Print Name:	Eugene Lim Zhi Jie		
Title:	Project Manager		
Role:	Project Manager		
Signature:		Date:	10/6/2022
Print Name:	Huang RuiMin		
Title:	QA Manager		
Role:	QA Manager		
Signature:		Date:	
Print Name:			
Title:			
Role:			
Signature:		Date:	
Print Name:			
Title:			
Role:			

APPENDIX A: REFERENCES

The following table summarizes the documents referenced in this document.

Document Name and Version	Description	Location
CDC UP Risk Management Plan	Risk Management Plan Template	https://ntulearn.ntu.edu.sg/bbcswebdav/pid-2965315-dt-content-rid-26443382_1/xid-26443382_1

APPENDIX B: KEY TERMS

The following table provides definitions for terms relevant to the Risk Management Plan.

Term	Definition
Web Server	Stores software and component files of "Go Where GaiGai". Hosts the website.
Database	Contains structured information and data of the locations to be displayed on the interactive map.
Server Traffic	Refers to hits and opens of a website. Server Traffic causes the server to utilize more resources and will slow down performance of software hosted on the server.
API	Application Programming Interface. A set of tools and protocols developed for third party use of a certain software or service.
Domain Expertise	Expert knowledge in a certain field i.e. data science, software development, software agents.
Software Bugs	An error, flaw or fault in the design, development or operation of a software.
CDC Unified Process	A framework and methodology that contains the necessary information and supporting tools that assist project managers and project teams in following best practices in project management.