Project Management Plan (PMP)

For

Campus Trails Application

Group 2

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TABLE OF CONTENTS

Business Landscape

Customer Responsibilities

- The University of Texas at Dallas (UTD) is responsible for providing all necessary resources and security access to fulfil the Scope of Project.
- The Customer shall also provide feedback in terms of defects and user experience in the process of using the service.
- The Customer is responsible for providing a complete and updated map of campus, with location of all rooms in each building.
- The University of Texas at Dallas shall be held responsible for the security of credentials validation when users log in to UTD wireless network as well as to the school's online services.
- UTD also needs to approve the use of third party gateways API depending on the implementation of the Scope of Project.

Assumptions and Dependencies

- The application shall depend on the reliability and quality of UTD wireless network. Users need to connect to UTD either through CometNet or UTDGuest
- Users will need to provide their class schedule along with the corresponding room number and building of each class.
- The application will make use of the credentials validation of UTD to protect students' information and data from unauthorized access.
- IT Developing, Inc. will adhere to industry best practice to ensure the security of data and information.
- Users are expected to protect their account information and device as a barrier to security of the application.
- The scope is defined in Section 3, and its associated cost is contingent upon the ensuing customer responsibilities. Any changes associated with this statement of work will require a Change Request.

Acceptance Criteria

IT Developing, Inc. shall notify The University of Texas at Dallas upon completion of the Services by providing a notice of completion. Therefore, The University of Texas at Dallas shall have 15 days from the date of notification to notify IT Developing, Inc. of the acceptability or conformance of Deliverables with the requirements as laid out in this

Statement of Work; such services shall be deemed accepted with whichever one of the below conditions happen first:

(1) The passage of 15 days from the date of notification with no communication from The University of Texas at Dallas about non-conformance

(2) UTD provides an actual notification of accepting the Services

(3) Customer's use of any part of the Deliverables or Service, even if there's no revenue generated

Acceptance of each milestone identified in the Pricing/Payment Milestones will issue an invoice and allow IT Developing, Inc. to recognize revenue.

Pricing Milestones

Milestone	Description	Payment
Requirements Analysis	Creating a requirement document, process flow diagrams, conducting interviews with stakeholders.	$85,000
Architectural Design	Solution Architect will create an architecture design based off given requirements.	$95,000
UI/UX Design	UI/UX will create a user interface, look and layout of the application.	$100,000
Implementation	Developers will begin coding.	$75,000
Software Testing/Quality Assurance	Product will be tested to assure that it meets the requirements.	$60,000
Maintenance	Weekly Maintenance to assure that the product is functioning properly, and bugs are being fixed.	$10,635
		Total Cost = $425,635

Scope of Project

The purpose of this project is to assist students, faculty, and visitors of The University of Texas at Dallas in navigating across the campus. We are delivering a mobile-based application to help guide students throughout their college campus. It is essentially Google Maps but specialized for campuses. The map would allow for heavy user configuration; the user sets what icons they'd like to see. Icons could range from classrooms, restrooms, restaurants, campus events, stairs, emergency exits, etc. Provides room-to-room or building-to-building directions, accounts for multistory buildings.

The motivation for this project came from the frustration of being lost on campus and students, faculty, and or visitors not being able to get to their destination on time. We have decided to create an app that would be able to search the location by name and direct you throughout the building by using arrows to point to where you need to go. The app would have similar features as that of Google maps, so it would be familiar to the user. Using this app will provide a convenient and easily-understood representation of a campus layout and would be ideal, even for those who may not get lost frequently. This would also relieve the stress on college students and visitors who don't know their way around campus. This app will solve a real and prevalent problem that people have when on college campuses.

Components

1. Ability for users to find classrooms and locations with inputs/gestures.

2. Ability for application to provide feedback to users in the form of directions, suggested locations, or parking spaces.

3. Ability to integrate with campus resources to purchase things ie. food, supplies, event tickets.

4. Ability to display areas that are blocked due to construction, and identify an alternative route for the user.

Out of Scope

- The application will not cater to other universities other than the University of Texas at Dallas.
- The application will be available only on mobile devices and not be available to desktop users.
- The application will not support Windows mobile devices and other mobile devices that are not compatible with Apple and Android applications.

Services Rendered

The main services described in the SOW provides the University of Texas at Dallas with IT Developing, Inc.'s underlying and essential functional areas. Integrating IT Developing, Inc.'s solutions will be described below and will contain the specific deliverables to meet our projects directives. This will detail and show how those processes will be deployed into the scope of our project within the Software Development Life Cycle.

Program Management

i. Objective and Value

IT Developing, Inc. will provide UTD with all the experience and high-level management needed to run an efficient and capable project. It will maintain a level of respect and decency for following all agreed upon time restraints, budget requirements, and quality to provide and ensure proper deployment success. We will track project milestones and deliverables as well as provide plans for issues related to cost, time, and risk management. IT Developing, Inc. will utilize the Agile software development process.

ii. Deliverables

- Project timeline for scheduling and attending weekly meetings for updates, tracking, and training. Defining tasks, durations, of payments of important dates.
- Weekly and monthly status reports

Requirements Specifications

i. Objective and Value

IT Developing, Inc. will consult with users (students) as well as clients (UTD) to uncover and document any needs, flaws, and data analysis vital to the deployment of the application in order to determine proper requirements. IT Developing, Inc. will state Functional and Non-Functional requirements for better planning, wherein leading to successful, user-friendly applications. IT Developing, Inc. will decide all software needed to complete the application.

The application will utilize:

- UTD course Scheduling System
- Interactive maps
- Management payment information
- Platform Capability

- Limit sensitive information stored on application servers
- Copyright and Trademark Compliance

ii. Deliverables

- Requirements document detailing the signed-off nonfunctional and functional requirements.
- Any change request processes after the requirements document is signed-off. This is to verify that the requests are within the scope of the project.
- Class diagrams
- Entity relationships

Design and Implementation

i. Objective and Value

IT Developing, Inc. will propose a detailed architecture of the application. The document will infuse class diagrams and entity-relationship models describing how the application will operate before, during, and after development. And lastly, IT Developing, Inc. will provide a project plan for the application. The document will include estimated cost for hardware, software, and personal expenses.

ii. Deliverables

- Design document for requirements and established metrics
- Work breakdown of Structure document
- Finalized design of front-end visuals

Testing: Verification and Validation

i. Objective and Value

Testing verification and validation defines the process by which IT Developing, Inc. will ensure the quality of the application as well as conform to all requirements and make sure they are met for UTD standards. IT Developing, Inc. will use all UTD standard user interface (UI) packaging and signing services incorporating custom artwork and graphics from UTD Student Services Department as well as follow Company and Trademark policies.

ii. Deliverables

- Provide a Checklist of Compliance - So as to follow all standards and practices provided by UTD
- Test cases
- Defect Testing
- Testing Execution

- Requirement Traceability Matrix

Deployment

i. Objective and Value

IT Developing, Inc. will provide one week of standard operational training before launch. This document suggests UTD opt-into the disaster recovery option plan which will ensure pre-scheduled training for post launch and will carry options throughout entire deployment of application. After obtaining the necessary licenses, IT Developing, Inc. will deploy the application onto the App Store for iOS and Google PlayStore for Android devices.

ii. Deliverables

- The Campus Trails application that is compatible with Android and iOS devices
- Testing
- Dry runs
- Dress Rehearsals
- Track customer satisfaction

Training and Maintenance

i. Objective and Value

The objective of this service is to prepare all IT Developing, Inc. and UTD operational and technical staff in the operation, support, and management of the designed solution.

ii. Deliverables

- Client Training Plan
- Post Completion Support Plan
- Disaster Recovery Option Plan

Work Breakdown Structure (WBS)
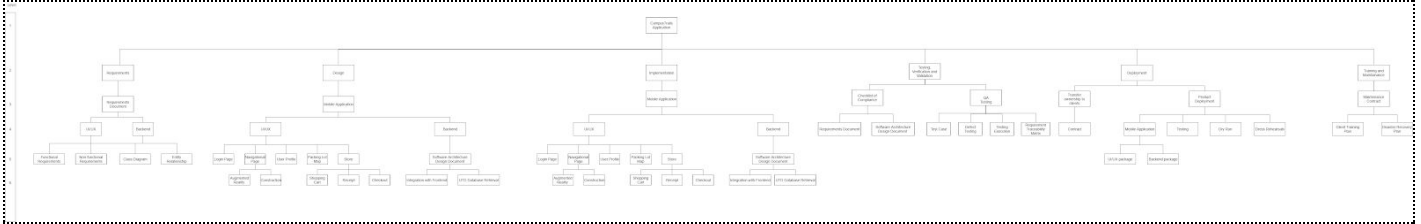
Level 1: Campus Trails Application
- Requirements
  - Requirements Document
    - Interview Plan
      - UI/UX
        - Functional Requirements
        - Non-functional requirements
        - Class Diagram
        - Entity Relationships
      - Backend
        - Functional Requirements
        - Non-functional requirements
        - Class Diagram
        - Entity Relationships
- Design
  - Mobile Application
    - UI/UX
      - Login page
      - User Profile
      - Parking lot map
      - Store
        - Shopping cart
        - Receipt
        - Checkout
      - Navigational page
        - Construction
        - Augmented reality
    - Backend
      - Software Architecture Design Document
        - Integration with Front End
        - UTD Database retrieval
        - Security integration

- Implementation
  - Mobile Application
    - UI/UX
      - Login page
      - User Profile
      - Parking lot map
      - Store
        - Shopping cart
        - Receipt
        - Checkout
      - Navigational page
        - Construction
        - Augmented reality
    - Backend
      - Integration with Front End
      - UTD Database retrieval integration
      - Security integration UTD Firewall
      - Oracle PeopleSoft Integration
      - Leaflet API Integration
      - PaySafe API Integration
- Testing with Verification and Validation
  - Checklist of compliance
    - Requirements Document
    - Software Architecture Design Document
  - QA testing
    - Test Cases
    - Defect Testing
    - Testing execution
    - Requirements Traceability Matrix
- Deployment
  - Transfer ownership to client
    - Contract
  - Product deployment
    - Mobile Application
      - UI/UX package
      - Backend package
    - Testing
    - Dry run
    - Dress rehearsal
- Training and Maintenance
  - Maintenance contract
    - Client training plan
    - Disaster recovery plan

Stakeholder Analysis

Stakeholder Analysis Map
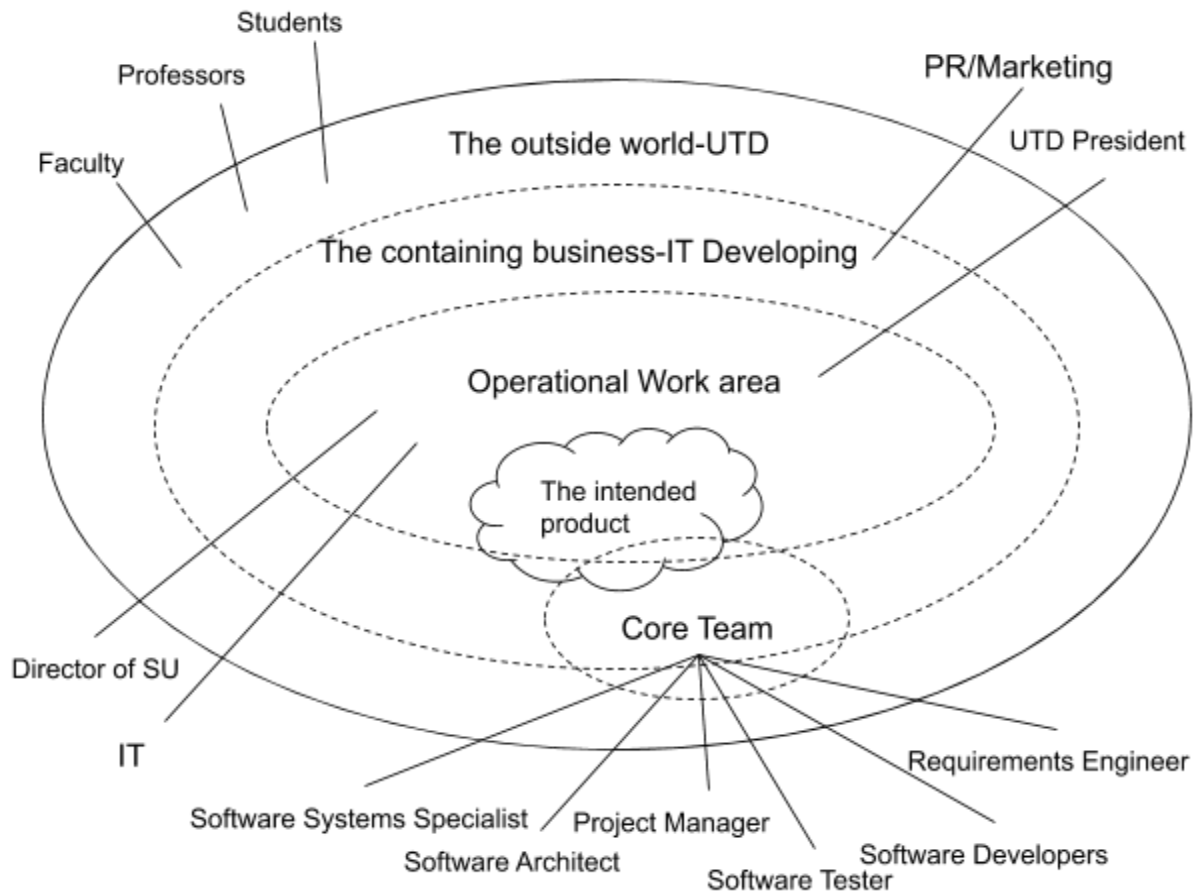
Stakeholder Identification

University President

The President of the University of Texas at Dallas, the highest-ranking member of the board. He is the top manager where all major decisions must be brought to and approved before they can't be finalized or start.

Requirements Engineer

The requirements engineer is responsible for gathering the non-functional and functional requirements needed for the system in order to define the components of the system.

Software Tester

The software tester is responsible for testing the application to ensure that it follows the quality that we promise to deliver to our customer as well as carry out the functionality that we stated in our requirements.

Project Manager

The project manager is responsible for creating a work breakdown structure, project schedule, and also the project budget. The project manager's main goal is to make sure that the project is successful. They also communicate with stakeholders to assure that the business goals are being met.

Software Developer

The software developers are responsible for developing the functionality we have stated in our requirements as well as integrate the corresponding technology to ensure that the application can carry out end-to-end tasks.

Software Architect

The software architect is responsible for creating the architecture for a system that will best suit the project needs. The architecture that they choose should be able to also meet stakeholder requirements, and meet the business goals.

Software System Specialist (all levels)

The software system specialist is responsible for designing the database. They should also be able to maintain and implement the database management. The systems

specialist also organizes the software needs.

Director, Student Union

The Director of the Student Union is the representative and main voice who speaks for all students at The University of Texas at Dallas. The goals and designs put forth are to protect and project the image of the university.

Stakeholder Priority
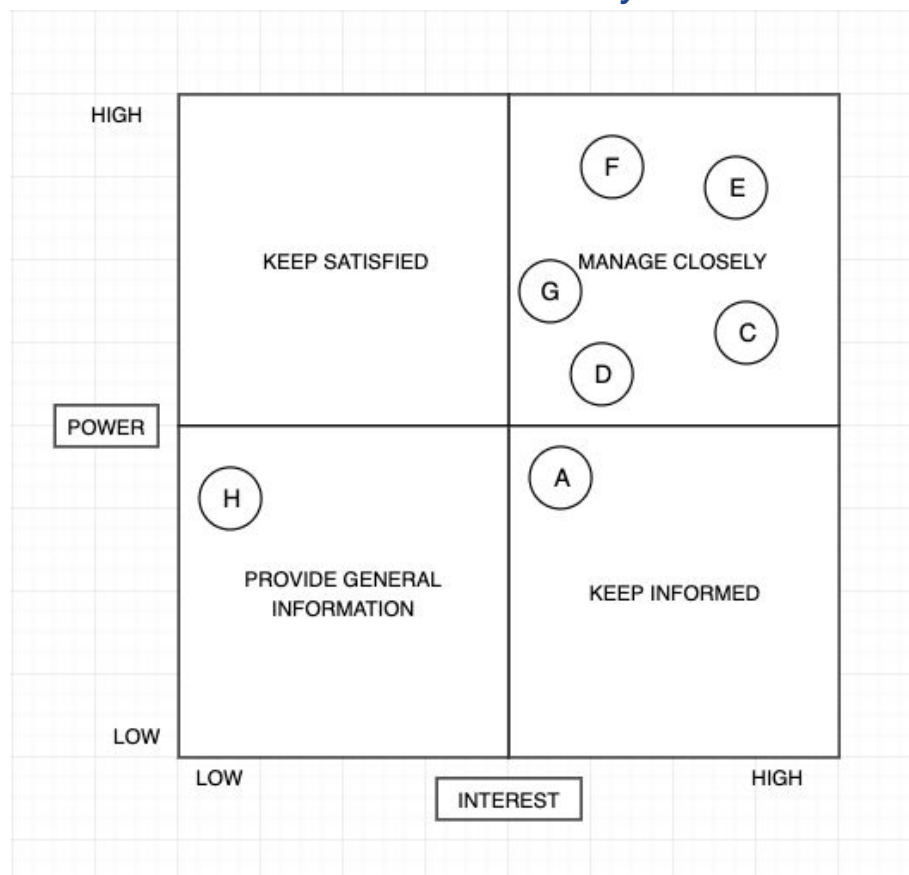
Stakeholder Information

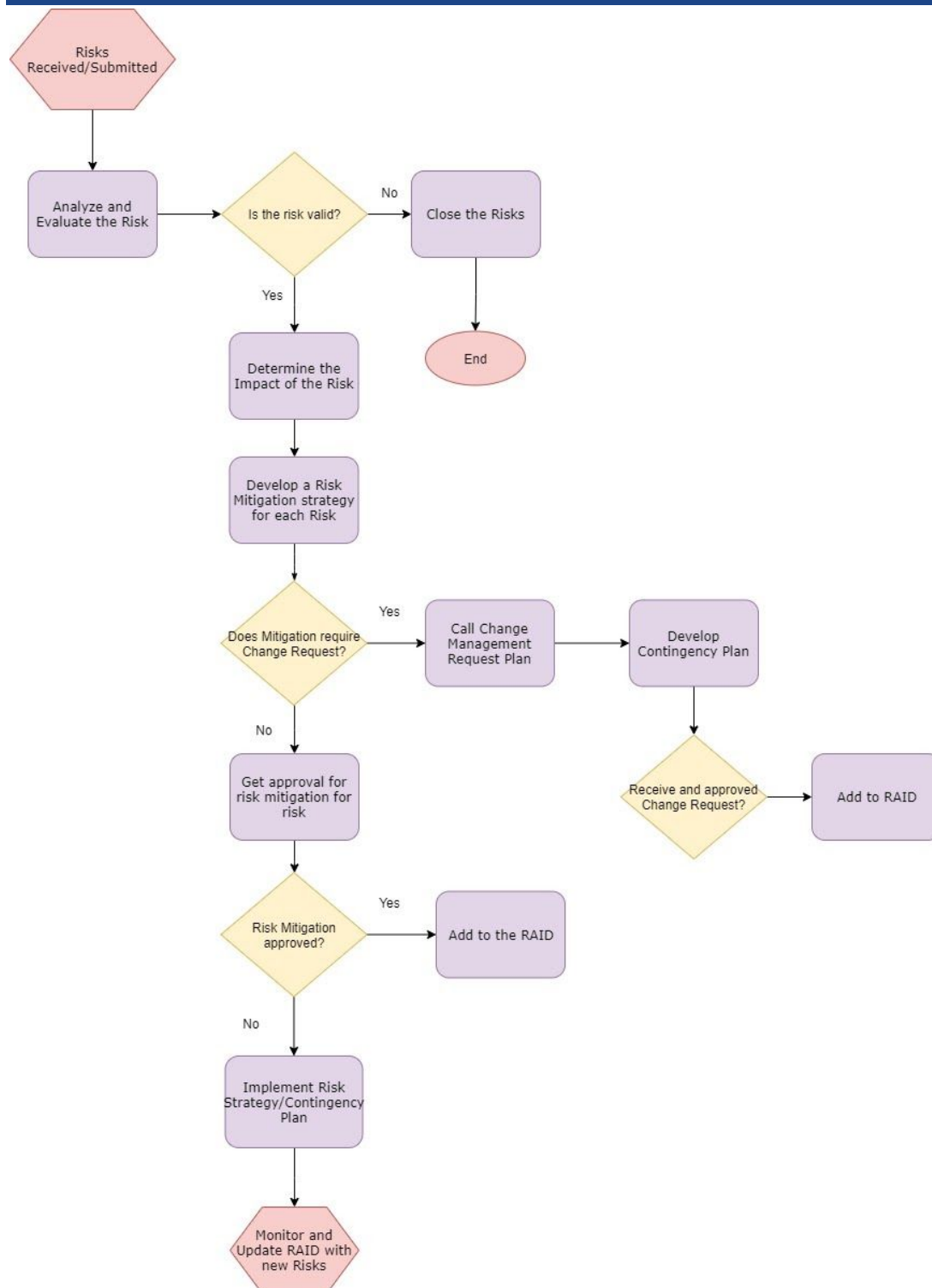| ID	Stakeholder Name	Job Title	Power/Interest	Communications	Communication Method	Frequency	Contact Details	Phone Number
A	Rebecca Smith	University President	Owner/Signing contract ,and product acceptance	All milestones	Meeting, appointment only	At all milestones and during emergency	R.Smith@1.com	555-252-1122
B	Joshua Davis	Project Manager	Project Team	Weekly team meetings, Daily communications	Meeting, Email, Phone calls	Working hour 9-5PM and during emergency	J.Davis@1.com	555-345-6857
C	Jerry Chen	Requirements Engineering Team Lead	Project Team	Weekly team meetings, Internal team meetings, Daily communications	Meeting, Email, Phone calls	Working hour 9-5PM and during emergency	J.Chen@1.com	555-496-5891
D	Daigo Umehara	Front-end Developer Team Lead	Project Team	Weekly team meetings, Internal team meetings, Daily communications	Meeting, Email, Phone calls	Working hour 9-5PM and during emergency	Daigo@1.com	555-290-1129
E	Karen Song	Back-end Developer Team Lead	Project Team	Weekly team meetings, Internal team meetings, Daily communications	Meeting, Email, Phone calls	Working hour 9-5PM and during emergency	K.Song@1.com	555-220-1149
F	Justin Wong	Software Architecture Team Lead	Supervisor, Project Team	Weekly team meetings, Daily communications	Meeting, Email, Phone calls	Working hour 9-5PM and during emergency	J.Wong@1.com	555-288-9821
G	Michelle Diaz	Software Tester Team Lead	Project Team	Weekly team meetings, Internal team meetings, Daily communications	Meeting, Email, Phone calls	Working hour 9-5PM and during emergency	M.Diaz@1.com	555-298-9924
H	Keith Beck	Software System Specialist	Software design and Database Manager	Weekly team meetings, Internal team meetings, Daily communications	Meeting,Email	Weekly, 9-5PM	K.Beck@1.com	555-192-1224
I	Jordan Wood	Director, Student Union	UI/UX design decisions	Customer meetings	Meeting,Email	Weekly, 9-5PM	J.Wood@1.com	555-522-2899
J	Mark Smith	Virtual Reality Vendor Representative	Primary Contact between project team, and VR Software Vendor company	Bi-monthly Outsourcing Performance meetings	Meeting, Email, Phone calls	Working hour 9-5PM	M.Smith@1.com	555-928-2893

Communication Plan

What	When	Who	How	Why
Milestone report	End of each phase of SDLC	Owner: Project Manager Attendees: University President, Director SU	Email, Face-to-face (F2F), video, phone	To give an overview of progress, and results as major milestones are achieved. This report/meeting is customer oriented.
Project Review	End of each phase of SDLC	Owner: Project Manager Attendees: Team Leads, Software Systems Specialist, Team Members	Face-to-face, video	To give an overview of progress, and results as major milestones are achieved. High points and future improvements are shared, and high achievers during the completed phase are recognized to provide a morale boost. This meeting is project team oriented.
Leadership Meeting	Weekly F 10:30-11:30am	Owner: Project Manager Attendees: All team leads	F2F, Video	Discuss changes in project direction, resolve conflicts between teams, and to facilitate voting on decisions that require it.
Weekly Status Report	Weekly F 3pm	Owner: All team leads Attendees: Project Manager	Email	To provide the project manager an overview of the progress, obstacles, issues, and changes of each team.
Internal Status Meeting	Daily 9:30-10:am	Owner: Team Lead Attendees: Respective Team	F2F, video	For individual teams to discuss dashboard items (individual progress, assignment, obstacles, issues, changes, etc…). For individual team members to share their progress on the previous day, and a brief outline of their plan for the day.
Internal Technical Meeting	Daily 10am - 10:30am	Owner: Back-end/Front-end/Testing Team leads Attendees: Respective Team	F2F, video	To identify all relevant technical details, concerns, or uncertainties, allow team members to ask more experienced members for their knowledge regarding any outstanding technical detail or issues, and to Identify the best solution for implementing more complex features.
External Status Meeting	Weekly F 1pm-1:30pm	Owner: Project Manager, Attendees: Team Leads involved in current phase, University President, Director of SU	F2F, video, email	To give an overview of progress, issues, and changes to external parties. Technical team leads involved in the current phase will attend to provide in-depth technical information if necessary.
External Technical Meeting	Weekly F 1:30-2:00pm	Owner: Project Manager, Attendees: Team Leads, University President, Director of SU	F2F, video, email	To discuss major changes, and issues with technologies used with external parties. Technical team leads involved in the current phase will attend to provide in-depth technical information if necessary.
Issues report	When needed	Owner: Stakeholder who discovers issue, or respective team lead Attendees: Respective team, Team Lead, Project Manager	Kanban Board, email, face-to-face, video, phone	To report and document issues that arise so that they may be resolved. Only required if the issue should be made known immediately, rather than at the next technical/status meeting.
Escalation reports	When needed	Owner: Project Manager Attendees: Stakeholder being escalated to, Stakeholder(s) requesting to escalate a conflict.	Face-to-face, video	To resolve conflicts between stakeholders that require someone to bypass their supervisor(s)
Outsourcing performance	Last Friday of each month	Owner: Project Manager Attendees: VR Vendor Representative, Front-end Team Lead, Back-end Team Lead	Face-to-face, video, email	To report and log the performance of the VR product outsourced to the project, and to discuss any necessary changes needed.
Accepted change requests	Anytime	Owner: Project Manager Attendees: University President, Director of SU, All team leads	Email	To inform customers, and project team leadership of approval of major change requests.

Risk Management Plan

Risks Received/Submitted

Analyze and Evaluate the Risk

Is the risk valid?

No → Close the Risks → End

Yes

Determine the Impact of the Risk

Develop a Risk Mitigation strategy for each Risk

Does Mitigation require Change Request?

Yes → Call Change Management Request Plan → Develop Contingency Plan → Receive and approved Change Request? → Add to RAID

No

Get approval for risk mitigation for risk

Risk Mitigation approved?

Yes → Add to the RAID

No

Implement Risk Strategy/Contingency Plan

Monitor and Update RAID with new Risks

#	Step	What	Who	How
1	**Risk Received/Submitted**	Determine the risk and initiate risk analysis	Developer lead Requirements engineer lead PM	The Developer Lead/Requirements Engineer Lead, Project Manager identify risks in projects and sends them to Project Manager to review. The PM will add this to the RAID sheet.
2	**Analyze and Evaluate the Risk**	Analyze and evaluate if the risk is valid	Project Manager	The Project Manager will check the risks in the RAID sheet and analyze each risk. Then he/she will check if the risk is valid.
3	**Determine the Impact of the Risk**	Determine how much the risk will impact the project	Project Manager, Requirements Engineering Lead, Front End/Back End Lead, SA Lead	The PM, RE Lead, Frontend/BackEnd Lead, SA Lead will determine from a scale from 1 being not severe to 8 being severe of how much it will impact the project.
4	**Develop a Risk Mitigation strategy for each Risk**	Create a strategy to respond to each risk - mitigating, avoiding, transferring, or accepting	Project Manager, Requirements Engineer Lead, Software Architecture Lead, Software Developer Lead (Front End and Back End)	Choose a strategy to mitigate any potential risks that may arise.
5	**Determine if the Mitigation requires a Change Request**	Determine if the mitigation that is being considered for	Project Manager	The PM will determine if the risk mitigation will

	Submission	the risk will require a change request		require a change request. If the change request is requested and approved then the PM must call the Change Management Plan and submit the request. If change request is not needed, the PM needs to get approval for risk mitigation.
6	**Develop a Contingency Plan**	Create a Contingency Plan to be used in the case the risks occurs	Project Manager	The project manager creates a contingency plan for all the issues or if there is a change request.
7	**Implement Risk Strategy/Contingency plan**	Initiate the contingency plans or mitigation plans	Project Manager, Requirements Engineer Lead, Software Architecture Lead	In the event that the risk occurs, implement the risk response strategy that was developed and prepared. In the event of a risk forming, implement the risk mitigation.
8	**Monitor and Update RAID with new Risks**	Monitor and track the triggering events	Project Manager	Watch the contingency plan executing and prepare to assess if new risks occur. Add any new risks to RAID sheet.

Change Management Plan

#	Step	What	Who	How
1	**Change request submitted/received**	The change request was submitted.	Customer- University President, Director of Student Union RE Lead, SA Lead, FE Lead and BE Lead - **submits** PM - **receives**	Customer identifies changes and sends to PM, PM receives these changes
2	**Review request**	Identify proposed changes and check if they are within the scope, budget, and time.	Project Manager, Customer (University President), Requirements Engineer Lead, Software Architect Lead	PM sets up meeting with customer, RE lead, and SA lead
3	**Communicate and resolve conflicts**	Negotiations take place dealing with scope, budget, and schedule	Customer(Student Union Director), PM, RE Lead, SA Lead	Meeting where all affected parties are brought up to speed on the changes
4	**Approve or deny changes**	Decide which changes are approved or denied	PM, RE Lead, SA Lead	If the changes get approved, then customer/University President signs off on change request form. If the changes do not get approved, go back to step 1.
5	**Adjust scope, schedule, and budget**	Notify respective resource leads of the changes to be implemented	PM	PM adjusts WBS to fit new scope
6	**Assign responsibility**	Update tasks in schedule to include changes	PM, RE Lead, SA Lead, Test Lead	PM updates schedule and sends to respective leads.
7	**Update RMP**	Update the risk management plan to include the new changes and how they affect the project	PM	PM updates RMP to include the new changes to be implemented as they affect resources and timing
8	**Track changes**	Add changes to the log	PM	Scope changes can be visible to everyone

Lessons Learned

1. *The Communication Plan must list specific stakeholders as defined in the Stakeholder Information Table*

   There is no point in having a Stakeholder Information table, complete with contact information, if the Communication Plan does not refer to specific stakeholders found in it. Terms such as "all staff" fail to specify which stakeholders must attend an event. This ambiguity can lead to a waste of resources.

2. *Actions on the RAID should not be able to be separated into multiple actions.*

   If an action can be separated into multiple items, then it is best to split it up into multiple actions. That way, there will be fewer complications such as if one part of an action is completed, but not the other.

3. *The SOW should not contain detailed requirements specifications.*

   Requirements specifications are technical solutions that should be decided upon after the requirements phase so as to not design the solution before finalizing requirements.

4. *Decisions are not discussion topics.*

   If a discussion on an issue is required, then it should be listed as an action to complete. Once a decision is finalized, based on the decision, then it should be moved to the Decision Log.

5. *The PMP should not contain the entire SOW.*

   While there is overlap between information in the PMP and SOW, only the necessary information from the SOW should be included in the PMP, rather than

the entire SOW. Documentation is verbose enough as is, and there is no need for further bloating.

6. ***The Business Landscape explains why the customer wants to do the project.***

   Our original PMP described the Business Landscape in terms of customer responsibilities, dependencies, assumptions, and acceptance criteria. Instead, it should describe the purpose behind the Campus Trails Project.