AUT UNIVERSITY

Redefining the Use of Augmented Reality

Project Plan

Version 2.0 Draft
27 May 2015

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0.0 Version History

Version 1.0

Version 1.0 is the original version of the Project Plan Document. This version of the document was created as part of the Project Proposal Version 1.0.

Version 1.1

Version 1.1 has been changed to address the recommendation provided by the AUT project marking team. The log of changes is below:

Section	Overview of Changes	Date
Title Page	Updated version number and date.	06/08/15
2.0	Work Breakdown Structure changed to better show the iterative process of XP development.	14/04/14
3.1	Project Schedule revised to reflect the reduced number of hours remaining to complete the project.	14/04/14

Version 2.0 Draft

Version 2.0 draft reflects the preliminary plan proposed in the Change Statement 1 document. This plan changed the scope of the project to instead be focused on creating a 'wayfinding' application as specified by Auckland City Council. The plan was scrapped when contract negotiations with the Council fell through. Version 2.0 remains a draft document as the plan was never concretely established.

Section	Overview of Changes	Date
Title Page	Updated version number and date.	27/05/15
1.0	High Level Overview changed to reflect the new project plan.	15/05/15
3.0	Project Schedule revised to reflect the reduced number of hours remaining to complete the project and the new project stages. Milestones changed to reflect the new project milestones.	27/05/15
4.0	Scope changed to reflect the new project plan.	16/05/15

1.0 High Level Overview

1.1 An Augmented Reality Wayfinding Application

Luminary Promotions have been contracted by Auckland City Council to create a 'wayfinding' application to help tourists navigate through Auckland City. The application will use Augmented Reality technology to overlay useful information about nearby attractions (such as the Sky Tower and Auckland Museum).

Upon opening the application, users will be shown the view from their phone's camera. Overlaid on this view will be GPS positioned markers near the user's current location. The compass from the user's phone will be used to orient the markers in such a way that rotating the phone in space will show the markers in the direction of the camera's lens.

Moving closer to a marker will increase its presence on the device's screen (within a decided minimum and maximum size). Tapping on the marker will open an information panel about the particular attraction.

1.2 Phase One: Requirements Elicitation

Phase One will require Luminary Promotions to gather the requirements 'wish list' from the Auckland City Council. Luminary will need to elicit both functional and non-functional requirements in order for the Group to move into Phase Two.

The Group will work with Luminary to ensure that all necessary requirements have been gathered from the Council.

1.3 Phase Two: Research & Requirements Specification

Phase Two will reference Action Research methodology to discover, investigate and verify the viability of the requirements specified by the Council. We will determine the feasibility of the overall application, as well as its individual components.

The knowledge gained in this research phase will allow the Group to create a complete and prioritised Requirements Specification document. This document will be passed on to Luminary for approval from the Council. Changes will be considered on a case-by-case basis and must be agreed on by both the Group and Luminary.

1.4 Phase Three: Development

Phase Three will be the development phase of the application, in accordance to the approved Requirement Specification document created in Phase Two. We will follow the Extreme Programming methodology for the planning, execution and evaluation of the software system.

Phase Three will result in a working prototype of the wayfinding application for further development by Luminary Promotions.

The exact timeframes for Phase Three will be determined by the length of Phases One and Two, but the expected overall duration of Phase Three is 12 working weeks.

2.0 Work Breakdown Structure

Disclaimer: The processes stated are indicatory only and subject to change later into development. It can be expected that some sub-processes cannot yet be accounted for.

Below is a high-level work breakdown structure in tabular form with PMI numbering:

1. Phase One: Investigate Potential Uses of Augmented Reality
    - 1.1. Individual Research (based on Action Research Methodology)
        - 1.1.1. Plan
        - 1.1.2. Act
        - 1.1.3. Observe
        - 1.1.4. Reflect
    - 1.2. Collaboration of Ideas
        - 1.2.1. Presentation of Individual Research
        - 1.2.2. Group Discussion
        - 1.2.3. Prioritisation of Ideas
    - 1.3. Proof of Concept
        - 1.3.1. Qualitative Assessment
        - 1.3.2. Prototyping
        - 1.3.3. Determination of Viability of Ideas
2. Phase Two: Determine the Approach to be Implemented
    - 2.1. Determine the Viability of an Augmented Reality Platform
        - 2.1.1. Assess the Discovered Uses of Augmented Reality
        - 2.1.2. Discuss the Discoveries with the Client
        - 2.1.3. Assess the Risks of the Platform
    - 2.2. Compare the Viability of the Two Approaches
        - 2.2.1. Determine the Risks of the App Extension Approach
        - 2.2.2. Compare the Risks of the Two Approaches
    - 2.3. Decide Which Approach to Implement
3. Phase Three: Implement the Decided Approach (based on Extreme Programming Methodology)
    - 3.1. Execute Development Iteration (repetitive process)
        - 3.1.1. Plan
        - 3.1.2. Design
        - 3.1.3. Coding
        - 3.1.4. Testing
        - 3.1.5. Evaluate (Listening Through Feedback)
        - 3.1.6. Return to 3.1

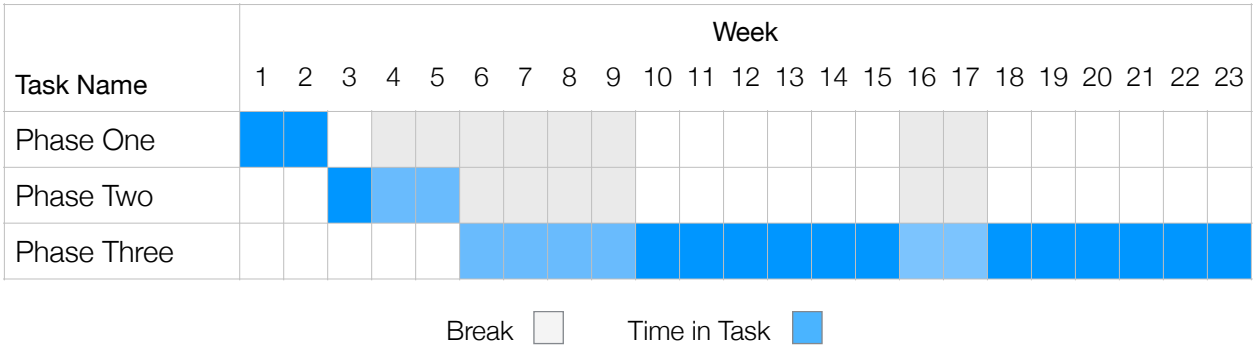
3.0 Time Management

3.1 Project Schedule

Disclaimer: This project schedule is indicatory only and subject to change. It is to be interpreted as a high-level overview of the project tasks only and will be refined later into development.

Each project team member will work 10 hours per week during working weeks. A reduced number of hours will be worked during break weeks, as decided by the group on a case-by-case basis. Development tasks may be scheduled during break weeks, but meeting duration and frequency will likely be reduced during these times.

Project Start Date: 27 May 2015 (week 1)
Project End Date: 25 October 2015 (week 23)



- **Phase One: Requirements Elicitation**
  Duration: 2 working weeks
  - Start Date: 27 May 2015
  - End Date: 17 June 2015

- **Phase Two: Research and Requirements Specification**
  Duration: 1 working week + 2 weeks during the break with reduced work hours
  - Start Date: 17 June 2015
  - End Date: 8 July 2015

- **Phase Three: Development**
  Duration: 12 working weeks + 6 weeks during breaks with reduced work hours
  - Start Date: 8 July 2015
  - End Date: 25 October 2015

3.2 Milestones

Each of the three phase end dates will be considered a major milestone of the project, as will the project start date and end date. As the phases are broken into smaller sub-processes, minor milestones will be set during each phase (especially during development — Phase Three).

These milestones will be agreed with the supervisor and client, and will usually result in a deliverable of some description. The final deliverables of each phase are crucial for the following phase, with Phase Three resulting in the completed project.

4.0 Scope

The project is split into three phases: a requirements elicitation phase, a research and requirements specification phase and a development phase. The result of the research and requirements specification phase will determine the scope of the development phase.

It can be expected that the Group will be unable to create a complete and fully functional 'wayfinding' application given the time constraints caused by the change in project plan. It is expected that the Group will be able to create a working prototype of the application that can be further developed by Luminary Promotions.

Disclaimer: The information below is a current, incomplete view of the scope as of 27 May 2015. The scope of the developed application will be determined by the result of Phase Two.

4.1 Objectives

We aim to create a 'wayfinding' application which:

- Implements Augmented Reality to display nearby GPS markers.
- Can have GPS markers added, removed and modified at runtime.
- Meets the agreed requirements stated by Auckland City Council.
- Acts as a working prototype/proof-of-concept.
- Can be developed by Luminary further.

4.2 High-Level Requirements

The high-level requirements of the system are below. These requirements will be refined throughout Phase Two project.

- The high level 'wish list' requirements need to be gathered from Auckland City Council.
- Research will be performed to determine the viability of the requirements specified by the Council, and a Requirements Specification document will be created.
- A working prototype/proof-of-concept of the application will be produced.

4.3 Major Deliverables

Each phase will result in a key deliverable:

- Phase One — High level requirements, gathered from the Auckland City Council.
- Phase Two — An assessment of the feasibility of the gathered requirements and a Requirements Specification document that has been agreed on by the Group, Luminary and the Council.
- Phase Three — A working prototype/proof-of-concept of the 'wayfinding' application.

4.4 Boundaries

The boundaries of the scope are as follows:

- We will not be creating the Augmented Reality content. This will be done by Luminary.
- We will not be responsible for marketing the application.
- The UI and UX design will be decided by Luminary (in part).
- We will not be creating the Augmented Reality technology itself. Vuforia will instead be used. Our focus will be on the implementation of the technology.
- The application will not be of deployable quality as it will be a working prototype only.