Operational Concept Description (OCD)

Harexi eWellness Health Application

Team 09

Feya Shah - Implementer, Life-Cycle Planner
Rucha Tambe - Prototyper, Implementer
Anushka Gangwal - Implementer, Project Manager
Ankita Agrawal - Software Architect, Verification/Validation
Parul Gupta - Feasibility Analyst, Quality Focal Point
Apurva Hajare - Software Architect
Devika Sathaye - Implementer, Requirements Engineer
Kylie Chinn - Project Manager, Operational Concept Engineer

October 23rd, 2020
## Version History

<table>
<thead>
<tr>
<th>Date</th>
<th>Author</th>
<th>Version</th>
<th>Changes Made</th>
<th>Rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td>10/17/2020</td>
<td>FS</td>
<td>1.1</td>
<td>● Revised section 3.2.1&lt;br&gt;● Updated element relationship diagram&lt;br&gt;● Updated information on current system</td>
<td>● Populated section 3.2.1 with the comprehensive list of core capabilities.&lt;br&gt;● The new element relationship diagram represents the functionality of the entire system.&lt;br&gt;● The current system information was updated to better explain the project.</td>
</tr>
<tr>
<td>10/17/2020</td>
<td>KC</td>
<td>1.2</td>
<td>● Updated benefit chain diagram</td>
<td>● Revised benefit chain diagram now accurately depicts users as stakeholders and their role</td>
</tr>
<tr>
<td>10/19/2020</td>
<td>KC</td>
<td>1.3</td>
<td>● Updated business workflow</td>
<td>● Original version was outdated due to change in workflow of application</td>
</tr>
</tbody>
</table>
# Table of Contents

*Operational Concept Description (OCD)*

**Version History**

**Table of Contents**

**Table of Tables**

**Table of Figures**

1. **Introduction**
   1.1. Purpose of the OCD
   1.2. Status of the OCD

2. **Shared Vision**
   2.1. Program Model
   2.2. Benefit Chain
   2.3. System Capability Description
   2.4. System Boundary and Environment

3. **System Transformation**
   3.1. Information on Current System
   3.2. System Objectives, Constraints, and Priorities
   3.3. Proposed New Operational Concept
   3.4. Organizational and Operational Implications
Table of Tables

Table 1: Program Model ................................................................. 2
Table 2: Capability Goals ............................................................ 5
Table 3: LOS Goals ........................................................................... 6
Table of Figures

Figure 1: Benefit Chain Diagram ................................................................. 3
Figure 2: System Boundary and Environment Diagram .................................. 4
Figure 3: Element Relationship Diagram ......................................................... 7
Figure 4: Business Workflow Diagram .......................................................... 8
1. Introduction

1.1. Purpose of the OCD

This document details the vision and the goals of the stakeholders of the eWellness Health Application for Harexi. The success-critical stakeholders are the following:

a) Harexi Health and Dr. Jasmine Berry, as the project owner, client, and maintainer

b) CSCI-577a Team 09 as the developers

c) Diabetic patients (all types of diabetes) of all genders and ages, as the users.

1.2. Status of the OCD

The status of the OCD is currently at the Development Commitment Package Version 1.3. The previous version was the first draft of this document. This version incorporates feedback gathered from the Architecture Review Board Meeting held recently. Any further changes to future versions of this document will be noted in this section and at the beginning of the document.
2. Shared Vision

2.1. Program Model

Table 1: Program Model

<table>
<thead>
<tr>
<th>Assumptions:</th>
<th>Stakeholders (Who is accountable for the initiatives)</th>
<th>Initiatives (What to do to realize benefits)</th>
<th>Value Propositions (Benefits i.e Why)</th>
<th>Beneficiaries (Who derives value)</th>
</tr>
</thead>
</table>
| ● Users have access to smartphone  
● Users have internet access  
● Regular use of the application on the part of the end-user | ● Users (diabetic patients)  
● Developers  
● Client  
● Administrator / Maintainer | ● Creating a mobile application that allows users to rate/review food products  
● Creating an application that allows users to see reviews left by other end users and how the reviewed food products affected their blood sugar | ● Users have more knowledge about diabetic friendly food from ratings  
● Users are introduced to more diabetic friendly food products  
● Users are able to take this knowledge and overall have better blood sugar control (to create the holistic vision of health Harexi has) | ● Users  
● Client (if well-implemented and straight-forward to maintain) |

2.2. Benefit Chain

The Benefit Chain diagram for the system is below. The diagram only covers the benefit chain for the development of this semester (as the development this semester will aid in further development of the application in the future, those future development initiatives will lead to more benefits down the line).
2.3. System Capability Description

The system is described as follows:

1. Harexi Health will be an application built for Android, that is intended to be used by people with diabetes, regardless of age, gender, or type of diabetes who want to explore more diabetic friendly food options.

2. Users can browse food products and look at their nutritional information. However users will also be able to read reviews of these food products written by other users to determine whether or not the food should be incorporated into their diet.

3. The users will also be able to contribute their own reviews to food products, building a community of shared information among diabetics, empowering them to make the best choices possible for their diet and health.

4. No competitor known to Harexi as of now.
2.4. System Boundary and Environment

The System Boundary and Environment Diagram is below:

3. System Transformation

3.1. Information on Current System

3.1.1. Infrastructure

Currently, there is no preexisting system or infrastructure, so no hardware or software are in use. This is the first initiative and attempt to build this system.

3.1.2. Artifacts

The only artifact involved in this project is Android devices.

3.1.3. Current Business Workflow

Refer to Section 3.3.2 for Current Business Workflow
### 3.2. System Objectives, Constraints, and Priorities

#### 3.2.1. Capability Goals

**Table 2: Capability Goals**

<table>
<thead>
<tr>
<th>Capability Goals</th>
<th>Priority Level</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>OC-1 Sign up / Login:</strong> The system is capable of allowing users to sign up for a new account and login using the same credentials.</td>
<td>Must Have</td>
</tr>
<tr>
<td><strong>OC-2 Third party login:</strong> The system is capable of allowing users to login using third party sites like Facebook, Google and Twitter.</td>
<td>Low Priority</td>
</tr>
<tr>
<td><strong>OC-3 Build Profile:</strong> The system should be capable of allowing users to create a profile with their profile picture, and general information like age, gender and diabetes specific information.</td>
<td>Nice to Have</td>
</tr>
<tr>
<td><strong>OC-4 Browse Food Products:</strong> The system will allow users to browse through food products and respond whether they have tried a food product or not.</td>
<td>Must Have</td>
</tr>
<tr>
<td><strong>OC-5 Rate/Review Food Products:</strong> The system is capable of providing a tool for users to rate/review a food item.</td>
<td>Must Have</td>
</tr>
<tr>
<td><strong>OC-6 Search for a Food Product:</strong> The system will allow users to search for a particular food product.</td>
<td>Nice to Have</td>
</tr>
<tr>
<td><strong>OC-7 Push Notifications:</strong> The system will send push notifications to users based on certain triggers like when they have tried some food products but not provided a review or periodical triggers to browse more food products.</td>
<td>Low Priority</td>
</tr>
<tr>
<td><strong>OC-8 News Feed:</strong> The system is capable of displaying recent activity of other users (i.e, food products they have recently reviewed) in a news feed format.</td>
<td>Must Have</td>
</tr>
<tr>
<td><strong>OC-9 Detailed Information of a Food Product:</strong> The system is capable of displaying the detailed</td>
<td>Nice to Have</td>
</tr>
</tbody>
</table>
information such as nutritional information, recent reviews, e-commerce links of the food product on a card.

3.2.2. Level of Service Goals

Table 3: LOS Goals

<table>
<thead>
<tr>
<th>Level of Service Goals</th>
<th>Priority Level</th>
<th>Referred Win-Win Agreements</th>
</tr>
</thead>
<tbody>
<tr>
<td>UI design of the application should be ideal for users of all ages ( age &gt;= 16)</td>
<td>High</td>
<td>None</td>
</tr>
<tr>
<td>UI response time should be &lt;=1 second with 0.2 sec being the desired response time</td>
<td>High</td>
<td>None</td>
</tr>
<tr>
<td>Search Latency should be very low when the users search for items based on keywords, tags or names (&lt;= 0.2 sec)</td>
<td>Medium</td>
<td>None</td>
</tr>
</tbody>
</table>

3.2.3. Organizational Goals

**OG-1:** Increase interaction between users and Harexi through application downloads and user feedback.

**OG-2:** To empower users to take charge of their diet and health by becoming more involved/conscious of the diabetic friendly food products they can incorporate into their life.

**OG-3:** To build an online community amongst users of the application where information and knowledge regarding diabetic friendly food products is shared in order to better everyone’s health.

**OG-4:** Increase awareness of ways of tackling the chronic condition.

**OG-5:** Be a go-to Mobile Application for diabetic patients to improve their health.
3.2.4. **Constraints**

**CO-1:** The new system will operate as an Android application.

**CO-2:** Monetary cost associated with NDI’s should be as low as possible.

3.2.5. **Relation to Current System**

There is no current system to relate or compare to the new system being developed.

3.3. **Proposed New Operational Concept**

3.3.1. **Element Relationship**

![Element Relationship Diagram]

**Figure 3: Element Relationship Diagram**

3.3.2. **Business Workflow**
Figure 4: Business Workflow Diagram

<table>
<thead>
<tr>
<th>User</th>
<th>Mobile Application</th>
<th>Food API</th>
</tr>
</thead>
<tbody>
<tr>
<td>register/sign-up</td>
<td>Store user data in Firebase</td>
<td>Provide food products</td>
</tr>
<tr>
<td>Cycle through 10 food products</td>
<td></td>
<td>Stores users’ response of whether they have tried product or not</td>
</tr>
<tr>
<td>Is last product in cycle</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Message screen after cycle completion</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rate tried product?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Homepage</td>
<td></td>
<td>Review saved</td>
</tr>
<tr>
<td>Review page for food products</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Leave review</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Homepage</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
3.4. Organizational and Operational Implications

3.4.1. Organizational Transformations

3.4.1.1. Maintenance Commitment
A major impact of the new system will be an increase in commitment on the part of the client. Once the development team finishes the application and turns it over, the client, as the maintainers, will be responsible for the upkeep of the application. Any services or packages that require paid access, such as FireBase, will be paid for by the client.

3.4.1.2. Future of the Application
The client as the maintainer will also be responsible for any updates and future versions of the application. The development team is responsible for creating the base of the mobile application. However, the integration of machine learning or additional features beyond the core capabilities discussed earlier in this document will be the responsibility of the client and whichever future development teams they choose to work with, to implement.

3.4.2. Operational Transformations

3.4.2.1. Maintenance Process
The process for maintenance will need to increase in scope and capability. The mobile application which will need to periodically be updated for any bug fixes or to release new features, so how maintenance is handled needs to be evaluated.

3.4.2.2. Security
There will now need to be a security element to the operation of the application, as the user profiles will contain information about the client.