MakeSafe

Developing a Mobile Application to Assist Probationers with Better Decision Making

Project Plan

V3.1

COMPUTER SCIENCE DEPARTMENT

TEXAS CHRISTIAN UNIVERSITY

May 5 2015

Revision Signatures

Sign below if you a) have read the entire document b) found the information within to be accurate and c) are certain the document is free of grammatical and spelling errors.

Name	Signature	Date
Marcus Beal		
Matt Butz		
David James		
Zack Morris		

Revision History

Version	General Description of Changes	Date
V1.0	Initial Draft	10/19/14
V1.1	Grammar and language corrections, logo update, additional descriptions added	10/26/14
V2.0	Document updates in multiple sections	12/09/14
V2.1	Grammar updates, screen shot, summary updated	01/23/15
V3.0	Final	4/23/15
V3.1	Final Revisions	5/5/15

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1 Introduction

1.1 Purpose

This document provides an overview of the planning and the approach to complete the MakeSafe project. MakeSafe is the development of a solution which includes an application for Android based platforms and version control software, KeepSafe, which will aid TCU's Institute for Behavioral Research in their DRR2 "StaySafe" project. This project plan contains a project overview, required resources, team member roles within the project, schedules, and a glossary of terms.

1.2 Overview

Section 2 - ***Project Overview:*** Brief detail of the project origins and concept

Section 3 - ***Resource Specification:*** Which environments the final product is intended to run in. This includes what resources are needed for the completion of the project including tools, software for development, and support tools

Section 4 - ***Project Management:*** Team information (Roles, Responsibilities, Meeting times)

Section 5 - ***Glossary of Terms:*** Project specific terms used within this document defined

2 Project Overview

2.1 Scope and Objectives

The scope for this project is to develop a tablet application to aid TCU's Institute of Behavioral Research (IBR) in their efforts to develop and test interventions that promote reductions in HIV risk behaviors and promote better decision making among offenders. The MakeSafe group from TCU's Computer Science Department will develop the application to meet IBR's interface and layout requirements as well as a means for revising and publishing future versions of the app without developer involvement. Specifically, the MakeSafe solution will include a mobile tablet application for Android™, titled StaySafe and a version publishing application, titled KeepSafe. It addition, the MakeSafe solution will accomplish the other major objectives of this project which include saving application interactions, usage statistics, and user satisfaction data allowing IBR to agglomerate saved items into a central database.

2.2 Project Background

The transition from incarceration to the community is a particularly high-risk period for offenders. During reentry, they are more likely to engage in unhealthy behaviors. Risk reduction approaches that focus on this critical period are needed to increase positive decision-making skills that promote healthy living. In particular, thematic interventions are needed to reduce disease risk behaviors that involve risk of HIV and Hepatitis B and C infection.

The Institute of Behavioral Research (IBR) at TCU first developed and tested an in-prison, group-based curriculum titled WaySafe, targeted toward incarcerated offenders in their last phase of substance-abuse treatment to improve decision-making when they return to the community. StaySafe, based on the WaySafe intervention, consists of twelve self-paced sessions lasting 10-15 minutes for use among community corrections populations. It's important to note that both WaySafe and StaySafe are drawn from an evidence-based practice called TCU Mapping Enhanced Counseling (recognized by the National Registry of Evidence-based Programs and Practices). The StaySafe tablet app is proposed as a means of providing an engaging, easy to use interface for the intervention.

The MakeSafe senior project, sponsored by IBR, developed the StaySafe application to meet IBR's design requirements. Major objectives of the project included developing the StaySafe app, saving research data (e.g., user selections, usage statistics, and user survey responses), and creating the version-publishing application. The KeepSafe software tool provides the researchers with sustainability, a means of publishing future versions of the application without further developer involvement.

IBR plans to first deploy the intervention in several Texas counties. StaySafe will record application interactions and selections from the user while they working their way through each of the sessions. This data will be transferred upon session completion to a secure central repository for analysis by the IBR.

With the IBR's research experience in the behavioral sciences and the MakeSafe team's software programming expertise, we hope to deliver an effective intervention that guides better decisions and reduces the risk of HIV infection among probationers supervised by the community corrections system.

Funding for this study was provided by the National Institute on Drug Abuse, National Institutes of Health (NIDA/NIH) through a grant to Texas Christian University (R01DA025885; Wayne E.K. Lehman, Principal Investigator).

3 Resource Specification

3.1 Hardware and Software needed for development

- MAC or Windows PC running:
  - Eclipse Luna v4.4.0 with the Android Development Toolkit v23.0.3
  - Microsoft Excel 2010
  - JSON editor v3.1.1 www.jsoneditoronline.org
- Android tablet running OS 4.4.2 API 19 or higher

3.2 Hardware and Software used in operation and support

- Android tablet running Android OS 4.4.2 (API 19) or higher
- MAC or Windows laptop with Microsoft Excel for the research assistants to store records
- Computer with Microsoft Excel and Access with Java version 8 installed for version updates
- PC must have USB 2.0 and support Android file transfer capability

3.3 Contacts

3.3.1 IBR Team

Name	Position	Role	Email
Wayne Lehman	Principal Investigator	Protocol issues	w.lehman@tcu.edu
Jennifer Pankow	Project Director	Curriculum issues	j.pankow@tcu.edu
Grace Rowan	Data Manager	Data issues	g.rowan@tcu.edu
Julie Gray	Post-Doc	Technical issues	j.gray@tcu.edu

3.3.2 CS Team

Name	Role	Email
Zachary Morris	Android Development Tester (Programmer Prospective)	zachary.morris@tcu.edu
Matthew Butz	Documentation Tester (Customer Perspective)	matthew.w.butz@tcu.edu
Marcus Beal	Android Development Tester (Programmer Prospective)	m.beal@tcu.edu
David James	Android Development Tester (Programmer Prospective)	david.james@tcu.edu
Donnell Payne	Faculty Sponsor	d.payne@tcu.edu

4 Project Management

4.1 Milestones and Deliverables

Task	Completion Date
Skeleton Website	10 October 2014
Project Plan v1.0	19 October 2014
Requirements Document v1.0	26 October 2014
Design Documentation v1.0	09 December 2014
Iteration 1: Basic layout for template 2	09 January 2015
Iteration 2: Functioning template 2	30 January 2015
TCU Faculty Presentation	03 February 2015
User Manual	27 February 2015
Iteration 3: Template 1, 2, and 3	19 March 2015
SRS Abstract Submission	19 March 2015
NTASC Abstract Submission	31 March 2015
Iteration 4: Final for internal testing/revisions	01 April 2015
Developers Guide	09 April 2015
SRS Poster Submission	09 April 2015
SRS	17 April 2015
NTASC Wichita Falls	18 April 2015
Final Product	23 April 2015
Complete All Documents	23 April 2015
Final Presentation	30 April 2015

4.2 Team Member Roles and Responsibilities

Zachary Morris

Zack is an Android developer and is responsible for combining parts from other Android developers into the final product. Zack will also be conducting testing throughout the development process.

Matthew Butz

Matt is responsible for documentation and will assist in website development. With limited to no Android development knowledge Matt will serve as a tester from the customer perspective. He will analyze the finished product and ensure that it is meeting the customer requirements.

David James

David will be developing the application for Android and assisting on KeepSafe development.

Marcus Beal

Marcus will participate in the development of the application for Android. He will also code and outline the methodology for the data flow transactions between the tablet computer and the research assistant laptop.

4.3 Monitoring and Reporting Mechanisms

4.3.1 Meetings

Tuesday and Thursday afternoons and evenings are being used as standing meeting times for the team. This will allow for items to be discussed on a regular basis including problems encountered, development status, and possible solutions. Friday afternoons are also being used as needed.

4.3.2 Communication

Google Drive and Google Documents repository currently holds all the documents for this project. Cell phone communication with group communication capability will be used for primary communication within the development team and the faculty sponsor. Regular emails will be used for communication with the sponsors.

4.3.3 Requirements Control

The customer and the TCU MakeSafe team will both sign off on the documents as well as hold a walk-through to help eliminate confusion. This will ensure that what is written in the documents is what was intended and also portrays the vision of the parties. The MakeSafe team meets regularly throughout the development of the project and will meet with the IBR team at minimum of twice a month. When a requirement needs to be changed it will be agreed upon by the MakeSafe team members, discussed and adopted with the TCU IBR team, and finally brought to Dr. Payne for final approval.

4.3.4 Weekly Activity Reports

As a part of the regular meetings the team will be tracking action items on the team website. This will allow for the team to monitor all the items that need to be delivered.

4.3.5 Walkthroughs

Requirement walkthroughs have been conducted with all parties involved in the project on multiple occasions. This will continue to occur throughout the delivery of each iteration.

4.4 Risk Management

4.4.1 Risk Analysis and Planning

ID	RISK	PROBABILITY	EFFECTS
1	KeepSafe exports and the JSON file are not able to create the correct update content.	High	A Java application must be written to allow version updates too occur. This application must be easily usable by future administrators.
2	Total APK file size is too large	Medium	APK will not load on tablet. New tablets with larger memory must be purchased.
3	Long term Android Development	Low	The StaySafe application will not long be supported on a future Android OS version.

4.4.2 Risk Management

ID	STRATEGY
1	Team will work with the customer to understand the functionality they require and how complex the version updates will need to be.
2	If the file size exceeds 50MB the application will be placed on the Google Play store.
3	Clean requirements definition and scope limitation. Future API updates from Google may limit the tablets that can be supported. However, advanced tablets will be purchased by the team to lengthen the usable life of the tablets selected for use in the field.

5 Glossary of Terms

CS: TCU's Computer Science department

DRR2: Disease Risk Reduction project 2

GUI: Graphical User Interface

HBV: Hepatitis B Virus

HCV: Hepatitis C Virus

HIV: Human Immunodeficiency Virus

HTML: Hypertext Markup Language

IBR: Institute for Behavioral Research. The Institute of Behavioral Research (IBR) was established in 1962 by Saul B. Sells to conduct research on personality structure, personnel selection, social interactions, and organizational functioning. See more at *www.ibr.tcu.edu*.

IDE: Integrated Development Environment

PO: The individual probation officer the probationer will be meeting with.

RA: The individual Research Assistant who will be on-site administering the StaySafe therapy to the probationers.

SD: Security Digital

SDK: Software Development Kit

WiFi: Refers to the wireless communication of network data.

WORK-IT: This is an acronym that depicts the model that we use to flow through template 2.

W: What's the problem? Who will be affected by your decision? Who can help with this decision?

O: Think about your Options.

R: Rate your Options.

K: Knowing what decision to make.

I: Imagine how you will turn your choice into action.

T: Time to Test the results.

