CIS 4911 – SENIOR PROJECT

Picture Marketing’s Social Wall

Feasibility Study and Project Plan Document

Members: Juan Gonzalez-Llanos, Joseph Gonzalez

Mentor: Cortney Mills

09/08/2014

Instructor: Masoud Sadjadi

**COPYRIGHTS AND TRADEMARK NOTICES**

This is the work of Joseph Gonzalez and Juan Gonzalez-Llanos, unless specified otherwise. Aid and guidence was provided by Cortney Mills and Louis Zuckerman of Picture Marketing.

**Table of Contents**

|  |  |
| --- | --- |
| **Title** | **Page Number(s)** |
| 1. Introduction | 4-5 |
| 1.1. Problem Definition | 4 |
| 1.2. Background | 4 |
| 1.3. Definitions | 4-5 |
| 1.4. Overview of Document | 5 |
| 2. Feasibility of Study | 6-10 |
| 2.1. Description of Current System | 6 |
| 2.2. Purpose of New System | 6 |
| 2.3. High-Level Definition of User Requirements | 7 |
| 2.4. Alternative Solutions | 7-9 |
| 2.5. Recommendations | 9-10 |
| 3. Project Plan | 11-12 |
| 3.1. Project Organization | 11 |
| 3.2. Identifications of Tasks and Deliverables | 12 |
| 4. Appendix | 13-23 |
| 4.1. Appendix A - Project Schedule | 13 |
| 4.2. Appendix B - Feasibility Matrix | 14-16 |
| 4.3. Appendix C - Cost Matrix | 16 |
| 4.4. Appendix D - Use Cases | 16-23 |
| 5. References | 24 |

**1. Introduction**

This chapter introduces the project and defines the purpose, scope, terms, and background of the system. It also deals with describing how the rest of this document will unfold using the chapter and section structure of the document.

**1.1 Problem Definition**

The problem our project, the Social Wall, deals with is the inability for clients to display photo albums in a slideshow from social media sites and cloud storage apps in a quick, inexpensive, and efficient manner. While it is possible to accomplish, it is normally tedious to set up and gives you a very limited amount of customization on how you want to show your slideshow. It also usually costs hundreds or even thousands of dollars a month to use competing software (e.g., tintup).

**1.2 Background**

The company we are working with for this web application , Picture Marketing, is known for their apps and products, like PhotoZap, which provides companies with the tools to market and promote their brands. With our app, Social Wall, we will aid them in aggregating images from different locations (DropBox, Facebook page albums, and RSS feeds) and repurpose them for event slideshows, website galleries, and other types of repurposing, so that more people can view them.

**1.3 Definitions, Acronyms, and Abbreviations**

PM - Picture Marketing

SW - Social Wall

FB - Facebook

PG - PhoneGap software

h/w - Hardware

s/w - Software

OS - Operating System

App - application

RSS - Rich Site Summary

CC - Chrome Cast

AJS - AngularJS Framework

JS - Javascript language

CSS - Cascading Style Sheets language

**1.4 Overview of document**

In this document, we will discuss our Feasibility Study and Project Plan. For the Feasibility Study we will discuss the current system in place today, the purpose of the new system we are going to implement, define our user requirements, describe the alternative solutions, and offer recommendations. This gives us our purpose behind our project and helps us move forward.

In our Project Plan, we discuss how we will organize our project, which includes our personnel organization and our h/w and s/w resources, and we identify our task, milestones, and deliverables for the rest of our project.

**2. Feasibility of Study**

**2.1 Description of Current System**

In the current system, there are two ways to solve this slideshow problem: doing it locally, by using broad slideshow applications like PowerPoint, or by using an expensive web application like Tintup. To display a slideshow locally, the consumer has to either download the images directly into their device and run it through a desktop slideshow application, or click through each individual image directly through social media site and display the images that way. This current system forces companies forces companies to dedicate time and resources for the creation of an appealing final product.

Another option for these consumers are through web application that provides this slideshow service (like Tintup or Postano). These services, while useful, can be rather costly, and can cost upwards of $1,000 a month (or more). While it might be affordable for some companies, it is a price that is too much for others, as well as individual users. These options, however, limit the amount of customization options. For example, there are no options for transition effects, background music, etc.

**2.2 Purpose of New System**

The purpose of the new system is to allow for the automation of this slideshow creation process through much simpler and cost-effective means. The expensive and unintuitive alternatives discourage individuals from using this service, and force companies, both large and small, to spare thousands of dollars for a service they may only use a handful of times. The new system will eradicate that by offering a simplified, yet elegant alternative that costs very little to use.

Another purpose is to add more customization to the slideshows. The current system gives the consumer a bare-bones version of a slideshow. Our new system will give more power to the consumer to make their slideshow to their own liking.

**2.3 High-Level Definition of User Requirements**

1) The system shall allow the user to generate a slideshow on a screen.

2) The system shall allow the user to change the image cycle speed.

3) The system shall allow the user to change the background photo of the slideshow.

4) The system shall allow the user to enter a recurring photo into the slideshow.

5) The system shall allow the user to digest photos from Facebook Account Album

6) The system shall allow the user to digest photos from Facebook Page Album.

7) The system shall allow the user to digest photos Dropbox Directory

8) The system shall allow the user to digest photos from an RSS Feed

9) The system shall allow the user to choose the source of photos for slideshow.

10) The system shall allow the user to cast mobile app onto Chrome Cast device.

11) The system shall capture requests made by users, and handle them respectively.

12) The system shall allow user to change the transition effect of their slideshow

13)The system shall allow the user to add music to slideshow

**2.4. Alternative Solutions**

**2.4.1. Description of Alternatives**

Many solutions were considered for this project. One was to make a native desktop app for Windows machines. In this alternative, the consumer would enter in his/her photo source, RSS feed, Facebook, or DropBox, the app would save it, and generate a slideshow on the application itself. This desktop app can be developed using Microsoft Visual Studio using C# and .NET framework.

Another possible solution is a web application, which can be utilized by any OS and mobile OS through their respective web browsers, giving SW the largest possible user base. This alternative also gives us the option to cast to Chrome Cast, which allows the user another simpler way to display their slideshow. The web app would be developed in Javascript, CSS, and HTML, using the AngularJS framework.

A third solution is to have native apps for iOS, Android, and/or Windows Phone. This provides an even simpler alternative for consumers to generate their desired slideshow through a simple select interface. It would also be an inexpensive alternative for the SW users, since the app would likely cost less than $5 to download from their cell phone’s app store. A phone app would also make it possible to cast the application to Chrome Cast, which would make presenting the slideshow even easier. For this solution, we could develop it like the web app (JS, HTML, CSS, and AJS) and convert it into a phone app with the aid of s/w like PhoneGap/Cordova.

**2.4.2. Selection Criteria**

**Functionality**: A description of to what degree the candidate would benefit the organization and how well the system would work.

**Political:** A description of how well received this solution would be from both user management, user, and organization perspective.

**Technology:** An assessment of the maturity, availability (or ability to acquire), and desirability of the computer technology needed to support this candidate.

**Expertise**: An assessment to the technical expertise needed to develop, operate, and maintain the candidate system.

**Economic Feasibility:** Cost to develop

**Scheduling Feasibility:** Time needed to develop.

**2.4.3. Analysis of Alternatives**

Alternative 1 (Desktop Windows app) is feasible in functionality, political, technology criteria. Functionality because a large consumer base would benefit from the development of the app. Political because a simple desktop app would be well-received from potential users. Technology because the s/w and h/w needed to develop this app is easily attainable through various vendors. Economically, it is fairly attainable since most s/w is inexpensive. Where it fails to be feasible is in the expertise and scheduling criteria. Both Joseph and Juan are somewhat unfamiliar with developing an app for Windows machines, so that would require extra time to learn, something that negatively affects the scheduling feasibility as well.

Alternative 2 (web app) is feasible in all criteria. Functionality because a large consumer base would benefit from the development of the app, even more so than Alternative 1. Political because a web app can be accessed by anyone on any device, allowing it to be accepted by many more. Technology and economically because, like Alternative 1, all s/w and h/w that is needed is both easily attainable, and relatively inexpensive. It passes the Expertise criteria because both developers have previous experience with JS, HTML, and CSS.

**2.5 Recommendations**

For Social Wall, we decided to make a web application (so that it is compatible with all OS) that retrieves photo albums from specific media sources, such as Facebook, RSS, and DropBox, and sends it to a slideshow engine that displays it for them. This was chosen because it gives us the largest possible user base for the app. It also allows us to port the app into a native mobile application via Cordova/PhoneGap.

We chose to do a mobile app because of the aforementioned PhoneGap software that makes it a simple port, and because it simplifies our app to the general consumer and allows them to generate a slideshow very quickly. We chose to develop for the Android OS because of the high market share it holds globally.

Both alternatives were also chosen, in addition to the ones listed above, due to the fact that the can also be cast to Google’s Chrome Cast, opening up more options for our potential user base.

**3. Project Plan**

**3.1 Project Organization**

**3.1.1. Project Personnel Organization**

Joseph Gonzalez - Developer, Project Manager, Tester

Juan Gonzalez-Llanos - Developer, Project Manager, Tester

Cortney Mills - Mentor

Louis Zuckerman - Mentor/Consultant

**3.1.2. Hardware and Software Resources**

Hardware:

* PC - Windows OS (7 or 8) or Mac (OS X or higher)

Software:

* GitHub (2.0 for Windows or Web application)
  + Open Source Code Repository
* StarUML (version 2.0.0)
* Trello (web application)
  + Project Management tool
* Java EE
  + Development/Testing of Application
* Tomcat 7.0
* Google Chrome
* Google Drive
* Adobe Photoshop CS6
* Wamp Server
* Android Development Tools
* Webstorm
* Cordova/Phonegap
* AngularJS Framework
* Bootstrap UI framework

**3.2. Identification of Tasks, Milestones, and Deliverables**

**Tasks:**

* Develop ability to display slideshow
* Implement slideshow transitions
* Develop ability to display background music
* Implement ability to receive RSS image albums
* Obtain FB API
* Secure connection to FB to receive image albums
* Obtain Chrome Cast API

**Milestones:**

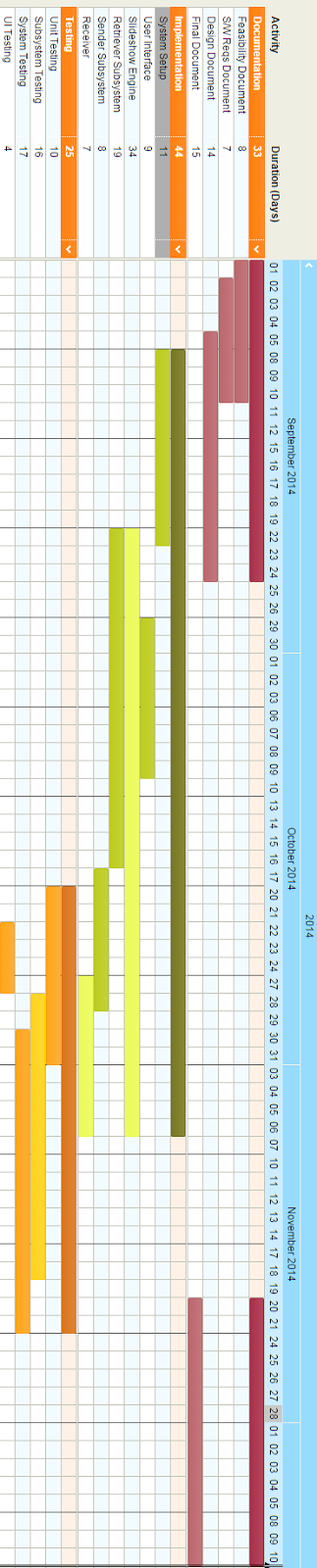
* Create UI design
* Develop Slideshow Engine
* Cast app to Chrome Cast
* Develop app within AngularJS Framework
* Receive all possible photo sources
* Send sources to SS engine
* Port web app to Android app

**Deliverables:**

* Feasibility and Product Plan Document
* Design Document
* Software Requirement Document
* User Manual
* Installation Guide
* Social Wall Demo
* Source Code

**4. Appendix**

**4.1 Appendix A - Project Schedule (Gantt chart or PERT Chart)**



**4.2 Appendix B - Feasibility Matrix**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Feasibility Criteria** | **Wt.** | **Candidate 1** | **Candidate 2** | **Candidate 3** |
| **Operational Feasibility**    **Functionality. A description of to what degree the candidate would benefit the organization and how well the system would work.**    **Political. A description of how well received this solution would be from both user management, user, and organization perspective.** | **30%** | **15**        **13**        **Score: 28** | **14**        **13**        **Score:27** | **15**        **14**        **Score:29** |
| **Technical Feasibility**    **Technology. An assessment of the maturity, availability (or ability to acquire), and desirability of the computer technology needed to support this candidate.**    **Expertise. An assessment to the technical expertise needed to develop, operate, and maintain the candidate system.** | **30%** | **15**          **12**        **Score:27** | **15**            **10**            **Score:25** | **15**            **12**            **Score:27** |
| **Economic Feasibility**    **Cost to develop:**    **Payback period (discounted):**    **Net present value:**    **Detailed calculations:** | **30%** | **Score: 30** | **Score: 30** | **Score: 30** |
| **Schedule Feasibility**    **An assessment of how long the solution will take to design and implement.** | **10%** | **Score: 10** | **Score: 9** | **Score: 10** |
| **Ranking:** | **100%** |  | **91** | **96** |

**4.3 Appendix C - Cost Matrix**

|  |  |
| --- | --- |
| Resource | Price (USD) |
| Laptop PC running Windows 7 or better, 8+ GB RAM, Intel i7 processor or better (x2) | $899.99  x2 |
| HDTV with HDMI port | $297.99 |
| Adobe Photoshop CC for four months, for two licenses | $19.99/mo  x8 |
| Chrome Cast | $34.99 |
| WebStorm Licenses (x2) | $99  x2 |
| Total (taxes and fees included): | $2,617.96 |

**4.4 Appendix D - Diary of Meetings**

Diary Entry 1:

Date: September 4, 2014

Location: Picture Marketing Offices

Start time: 2:30 pm

End time: 5:00 pm

In Attendance: Juan Gonzalez-Llanos, Joseph Gonzalez, Cortney Mills

Late: N/A

Agenda:

* Introduction and initial meeting
* Learn about Picture Marketing
* Explanation and details of the project
* Go over requirements of the system
* Talk about expectations of the project

Summary of Discussion:

Introduced ourselves to Cortney and the Picture Management. Discussed the Social Wall project, what is needed and what is expected.

Diary Entry 2:

Date: September 8, 2014

Location: Virtual meeting via Skype

Start time: 7:30 pm

End time: 8:40 pm

In Attendance: Juan Gonzalez-Llanos, Joseph Gonzalez

Late: N/A

Agenda:

* Talk about document drafts due
* Discussed use cases
* Come up with requirements and constraints

Summary of Discussion:

Discussed and worked on drafts that are due on September 8th and we came up with the use cases.

Diary Entry 3:

Date: September 19, 2014

Location: Picture Marketing Offices

Start time: 2:30 pm

End time: 4:30 pm

In Attendance: Juan Gonzalez-Llanos, Joseph Gonzalez, Cortney Mills, Louis Zuckerman

Late: N/A

Agenda:

* Discuss Development Approach
* Create Schedule
* Discuss requirements/finalize

Summary of Discussion:

Louis would become a mentor as well of the project. Had meeting to discuss how to approach the project and finalize requirement elicitation. Decided upon an android application, chrome cast compatible, as well as a web application. Discussed tools needed as well as framework that will be utilized being angularjs. Joseph would be in charge of android application, Juan in charge of Slide show engine and web app.

Diary Entry 4:

Date: September 26, 2014

Location: Picture Marketing Offices

Start time: 2:30 pm

End time: 4:30 pm

In Attendance: Juan Gonzalez-Llanos, Joseph Gonzalez, Cortney Mills, Louis Zuckerman

Late: N/A

Agenda:

* Show Facebook demo
* Discuss development approach

Summary of Discussion:

Discussion and acceptance of major work must be done on core parts of system. Must get android application running phonegap and slideshow engine must begin development.

Diary Entry 5:

Date: October 3, 2014

Location: Picture Marketing Offices

Start time: 2:30 pm

End time: 4:30 pm

In Attendance: Juan Gonzalez-Llanos, Joseph Gonzalez, Cortney Mills, Louis Zuckerman

Late: N/A

Agenda:

* Discuss phonegap project
* Slideshow engine

Summary of Discussion:

Phonegap project discussed in detail. Along with getting application running on emulator. See benefits of angular and begin approach to develop using framework. Slideshow engine displayed, must be converted to angularjs.

Diary Entry 6:

Date: October 22, 2014

Location: FIU ECS Computer lab

Start time: 1:50 pm

End time: 3:00 pm

In Attendance: Juan Gonzalez-Llanos, Joseph Gonzalez

Late: N/A

Agenda:

* Discuss progress
* Slideshow engine demo

Summary of Discussion:

We spoke about our recent progress and breakthroughs. Juan spoke of his improvements to the slideshow engine, and Joseph spoke about his improvement of the mobile app.

Diary Entry 7:

Date: October 28, 2014

Location: Picture Marketing Offices

Start time: 2:30 pm

End time: 4:30 pm

In Attendance: Juan Gonzalez-Llanos, Joseph Gonzalez, Cortney Mills, Louis Zuckerman

Late: N/A

Agenda:

* Discuss phonegap project
* Slideshow engine

Summary of Discussion:

Phonegap project discussed in detail. Along with getting application running on emulator. See benefits of angular and begin approach to develop using framework. Slideshow engine displayed, must be converted to angularjs.

Diary Entry 8:

Date: November 2, 2014

Location: FIU SCS Computer Lab

Start time: 2:00 pm

End time: 4:00 pm

In Attendance: Juan Gonzalez-Llanos, Joseph Gonzalez

Late: N/A

Agenda:

* Discuss progress
* Develop UML diagrams

Summary of Discussion:

We discussed our work up until that point in time, displaying our progress in our respective portion of the project. Afterwards we began developing UML diagrams, mostly sequence diagrams, based on our progress so far.

Diary Entry 9:

Date: November 11, 2014

Location: Picture Marketing

Start time: 2:30 pm

End time: 4:30 pm

In Attendance: Juan Gonzalez-Llanos, Joseph Gonzalez, Cortney Mills, Louis Zuckerman

Late: N/A

Agenda:

* Discuss progress
* Discuss Chrome Cast
* Discuss Slideshow engine

Summary of Discussion:

Chrome Cast was the main focus of this meeting. Picture Marketing lent us their Chrome Cast so that we could begin developing the app so it could utilize it. Afterwards, we discussed the slideshow engine, and getting it working using the AngularJS framework.

Diary Entry 10:

Date: November 24, 2014

Location: FIU SCS Computer Lab

Start time: 1:50 pm

End time: 2:50 pm

In Attendance: Juan Gonzalez-Llanos, Joseph Gonzalez

Late: N/A

Agenda:

* Discuss progress
* Update documentation
* Discuss direction of project

Summary of Discussion:

Like all our meetings, we discussed how far we’ve done with our respective portions of the project. We updated our documentation accordingly. Once completed, we discussed the direction of our portions so we could schedule when we would be able merge our sections to finish the Social Wall app.

Diary Entry 11:

Date: November 29, 2014

Location: Skype (virtual meeting)

Start time: 5:30 pm

End time: 8:30 pm

In Attendance: Juan Gonzalez-Llanos, Joseph GonzalezLate: N/A

Agenda:

* Assemble final Social Wall app

Summary of Discussion:

We used this meeting to assemble both portions of the Social Wall app. We were able to get our application functioning as expected, with only minor bugs.

Diary Entry 12:

Date: December 4, 2014

Location: Picture Marketing

Start time: 2:30 pm

End time: 4:30 pm

In Attendance: Juan Gonzalez-Llanos, Joseph Gonzalez, Cortney Mills, Louis Zuckerman

Late: N/A

Agenda:

* Display our full demo
* Discuss current bugs
* Discuss shortcomings of the project

Summary of Discussion:

At this meeting, we were able to display our full demo to our mentors at Picture Marketing. After the demo, we highlighted our bugs, as well as the features we weren’t able to accomplish due to time restraints.

Diary Entry 13:

Date: December 10, 2014

Location: Picture Marketing

Start time: 1:30 pm

End time: 6:00 pm

In Attendance: Juan Gonzalez-Llanos, Joseph Gonzalez, Cortney Mills, Louis Zuckerman

Late: N/A

Agenda:

* Display demo with bug fixes
* Record videos
* Finish documentation

Summary of Discussion:

For this meeting, we put the final touches on the Social Wall project. We had already cleaned up most of the bugs from the past week, and showed our mentors a more complete Social Wall application. We used the remaining time to record our instruction videos and to finish documentation.

1. **References**
2. <http://angularjs.org/> - AngularJS Framework for Javascript
3. <http://ionicframework.com/> - Ionic Framework for developing HTML mobile apps
4. <http://phonegap.com/> - Porting web app to Android
5. <http://cordova.apache.org/> - Porting web app to Android
6. <http://nodejs.org/> - Porting web app to Android
7. <http://getbootstrap.com/> - Bootstrap Framework
8. <http://bower.io/> - Package manager for web app
9. <http://www.techsmith.com/camtasia.html/> - Screen Recorder for videos