TECH BIBLE MOBILE APP

Interactive Qualifying Project Report completed in partial fulfillment
of the Bachelor of Science degree at
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Abstract

This report was produced as the result of an inquiry of the interest in the production of a smartphone application version of the WPI Tech Bible, which I believe would be more accessible todays WPI student, most of whom own smartphones. The Tech Bible is a longstanding tradition of the WPI community having been given to incoming students since the late 1890's. Interest in the Tech Bible is not currently very high and the application would be created in order to increase interest. This report explains each step in the process of testing this theory.

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Executive Summary

The Tech Bible is distributed to the incoming freshmen every year by the Student Alumni Society. In the midst of rewriting the Tech Bible for the first time in twenty years it dawned on me that the source of the lower readership of the Tech Bible may be the format of the book. This project was created to test whether or not a smartphone application version of the Tech WPI Tech Bible would increase the readership of said Tech Bible. The reason for this is that most WPI students own smartphones, and the students that do own them, use them a lot. This would make the Tech Bible app available whenever the student has their phone or tablet on them, where they most likely just tuck the tech bible itself away in a drawer and forget about it.

This idea eventually led to the creation of this Interactive Qualifying Project. My goal in completing this project is to test to see if there is an interest in the smartphone version of the Tech Bible. I also wanted to compare the interest in the app with the interest in the current Tech Bible.

This paper starts off with an introduction to what the Tech Bible is then goes into the survey conducted on WPI students in order to understand their views and preferences on the Tech Bible. From this study I learned that while every student owns a Tech Bible, hardly one student out of every three has read it. I also learned that in general WPI students are interested in learning about the Traditions of WPI, which is a large portion of the contents of the Tech Bible. This proved to me that it was not the contents of the Tech Bible that was the problem, but how that content was shown.

Next the report goes into the study of similarly designed smartphone apps, which are apps that are built for other colleges or universities. From this analysis I learned different things which could hurt or help the success of the app. I also found no apps that placed such a large emphasis on the traditions and history of an institute or college. I discovered I was treading on an unbeaten path as most of the apps analyzed focused on utility for current students, or information for prospective students.

Then I go into the actual development of the application. I explain in detail why I chose to develop the app for Android instead of iOS (Apples mobile platform) despite there being more iOS users. These factors include being familiar with the language used to develop Android apps, faster growth of users, and the lower cost.

I then give an overview of the design of the app that I created. There are four main pieces that I have developed. The first part I developed dealt with the buildings on campus. It gives a brief history and shows a picture of the first ten buildings on campus. I would have done more, but time constrained the amount I could do. The second section is about traditions, this section gives the history of two of WPI's biggest traditions Paddle Rush and Rope Pull, had I more time I would have put more traditions in the app. The third section is the acronym dictionary; it serves as a guide to the many acronyms for various things on campus to new students. The last part is the calendar which is just a monthly calendar that would have had the dates of events all over campus had I the proper time to do so.

Following the description of the app, I go into the process of developing it. I describe in the iterative development cycle I used to create the app. After I briefly describe how I conducted the post survey. From there I go into the details of the post survey. In the post survey there was a much larger portion of participants interested in downloading the app than in the initial survey, with about fifty percent interested before I developed the app and about ninety percent interested with the test group. They study group also like the simplicity of the app and suggested features that I was planning on adding to the app if I had the time to do so.

I concluded that if the WPI students were given a Tech Bible App that they would use it to greater extent that the current paper version. Participants in my study of the app agree with this statement with a large majority saying they would be more likely to use the app. I also suggested that more options be pursued in order to gain and increase of readership in for the Tech Bible. This included but was not

limited to, better advertising the features of the Tech Bible, so that the students know what they are

getting.

Introduction 1

The Tech Bible is one of the oldest traditions at Worcester Polytechnic Institute (WPI). It was originally written in the late 1890's and serves as a guide to incoming freshmen. Currently the Tech Bible is written and distributed by the Student Alumni Society (SAS). SAS has noticed that over the years the interest in the tech bible has diminished. Members of SAS have been, and continue working on bringing a greater interest in the Tech Bible. As the Historian of the Student Alumni Society for the year 2012 it was my job to lead the effort in rewriting the Tech Bible. The new version was handed out to freshmen at the conclusion of New Student Orientation for the class of 2016.

During the rewriting process the idea came to me that it may be the format of the Tech Bible that may be detracting from its popularity. Today there are many gadgets that the average person carries around with them on a daily basis. There just isn't room for small handbook like the Tech Bible in people's pockets anymore. This project is meant to tackle that problem and several others that take root in the format of the Tech Bible and size of the School.

Assessment of Paper Tech Bible 1.2

Late in B term I conducted a survey of Undergraduate WPI Students of factors that I felt would be useful in creating the mobile app. This included, but was not limited to, the participant's perceived knowledge of WPI and its history, the ownership of mobile computing devises (smartphones and tablets) on campus, and the interest level in learning more about the history and traditions of WPI.
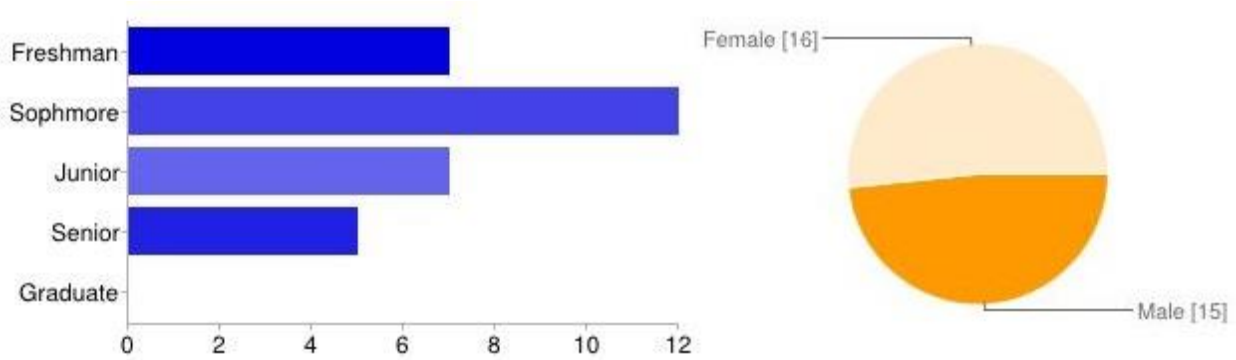
Figure 1

As seen in Figure 1 above, there were 31 respondents to the survey, of which about half were male and half female. The different classes were generally well represented with slightly more sophomores responding that each other class.

There was also a rather diverse group of majors between the respondents, Biology Majors, Mechanical Engineering majors, biochemistry, Computer Science majors, Aerospace engineering majors, and Psychological Science majors all participating.

Do you own a copy of the Tech Bible?

- Yes, I own a copy
- No, I do not have a copy
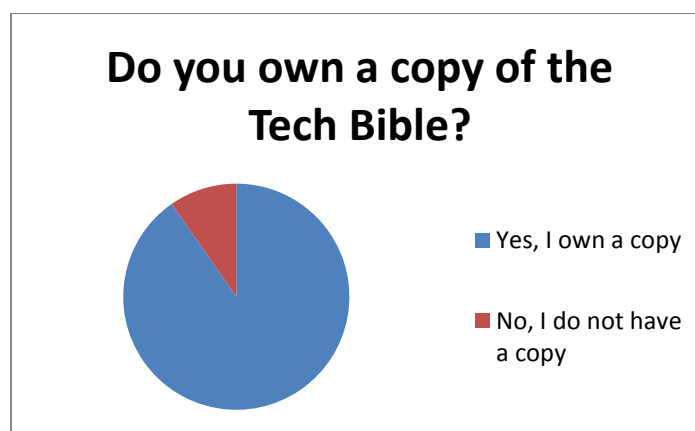
Figure 2

About 75% of the respondents claimed to own a mobile computing device. I defined a mobile computing devise as a smartphone or tablet computer. As seen in figure 2 above, 90% of the same population

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owned a copy of the tech bible, while 97% knew what the tech bible was. Despite the large ownership of

the tech bible though, only about 33% of the students have read the tech bible.

Have you read the Tech Bible

- Yes, I have read it cover to cover
- No, I have not read it
- Yes, I have skimmed it
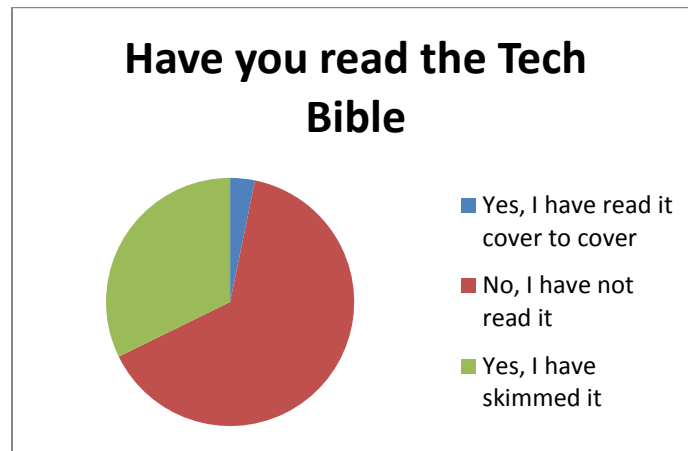
When asked if the tech bible was released as a smart phone or tablet app, 52% said that they would be

more likely to read it. Although this number is not ideal, it is a large increase from the current readership

of the tech bible.

When asked what they would like to learn more about life at WPI, sixty five percent of the students

surveyed said that they would like to learn more about the traditions of WPI. The Traditions of WPI is a

large portion of the traditional Tech Bible. Since 33% read the booklet, while 65% wanted to learn more

about traditions, at most half of the people who said they would like to know about the traditions would

have known it was in the tech bible. When asked what the participants liked about the Tech Bible, a

number of students put that they liked all of the traditions and history in the book.

When asked about what they did not like about the Tech Bible, most students responded that they did

not read it, or haven't read it enough to form any strong opinion about it. Another major complaint

about the Tech Bible was that it was rather small, and that the print was small. This leans towards

creating an app version of the Tech Bible. If you were to make the text larger, the size of the book would

have to increase, or the amount of content would have to decrease. With the app, the text can be as large or small as you want and it would have no effect on the overall size of the app.

The Goal of the IQP 1.2

Through this IQP I plan on addressing the problems that arise from the current format of the Tech Bible. I will address the problems discovered by creating a version of the Tech Bible that will be in a format more convenient for the modern WPI student. The format I aim to create is one of a smartphone application, more specifically an Android app. Many students already have smartphones that they carry with them all the time; the smartphone application will allow the student to have access to the Tech Bible wherever they go with their phones.

Background 2

Throughout my research of both old Tech Bibles and smartphone apps of similar design I have collected

a lot of information on how to design the Tech Bible. There was even some overlap with both areas of

research.

Analysis of old Tech Bibles 2.1

In the old Tech Bibles I found a lot of features that would not be possible for various reasons in a

printed tech bible anymore, but students would find useful. Some of the oldest Tech Bibles had foldout

maps of the campus and the surrounding area, while it would be hard to achieve a similar feat in the

current print version, it would be easy to do in a phone app with resources such as Google maps. Old

versions also contained a listing of faculty by department. While the current size of the faculty would

make such a list to large compared to the size of the Tech Bible, such a directory could be accomplished

in a smartphone app, the app could also include phone numbers and email addresses to contact the

faculty member.

Analysis of Similar Smartphone Applications 2.2

My research for similar apps consisted mostly of smartphone apps developed for other colleges. Each of

these apps with multiple functionalities used a home screen full of icons as the main means of

navigation. Many also have maps and a directory system, like I wanted to include in the Tech Bible app

after looking through older versions of the Tech Bible. The Apps that I looked researched were for

Northeastern University, Rutgers University, Yale, University of Massachusetts, Radford University, and

Virginia Tech. I found that none of these apps had any historical data in them, which is a big portion of

the Tech Bible. The app I studied to cover historical information is, United States History.

Northeastern University 2.2.1

The First app I will analyze in detail is the one Developed for Northeastern University. Northeastern Mobile was developed by Northeastern University Admissions. This app was designed to be a central hub for Northeastern students, prospective students and alumni. The app links to several different types of resources pertaining to each group. Some of the features linked to include, but is not limited to, admissions, athletics, calendars, news, a directory, various social media outlets for the school.

The first thing I noticed while loading the app was that it was slow. On initial startup it took several seconds to load the app, and appeared to require a network connection. The app was also slow to load data once

the main app loaded, it appears that most of the in app data is not stored on the phone, but on an external server. I also found that many of the features of the app would redirect the user to a portion of the school website; none of these were visibly different than built in features. Visually the app also used images for the background instead of solid colors or patterns, as seen in figure 4 to the right. This made the opaque buttons harder to read and I found the pictures distracting from the purpose of the app. One lesson I learned from the Northeastern Mobile app in developing my own is that I should include as much on system as possible to speed up the use of the app.

Rutgers University 2.2.2

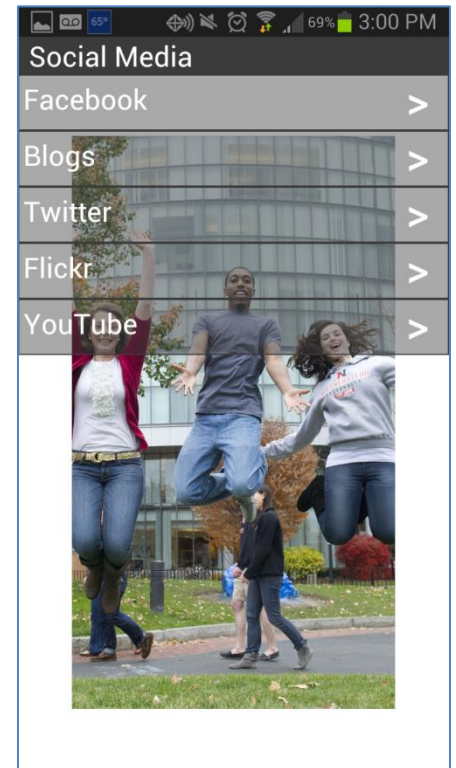The next app reviewed was for Rutgers University. Rutgers University was

Figure 5
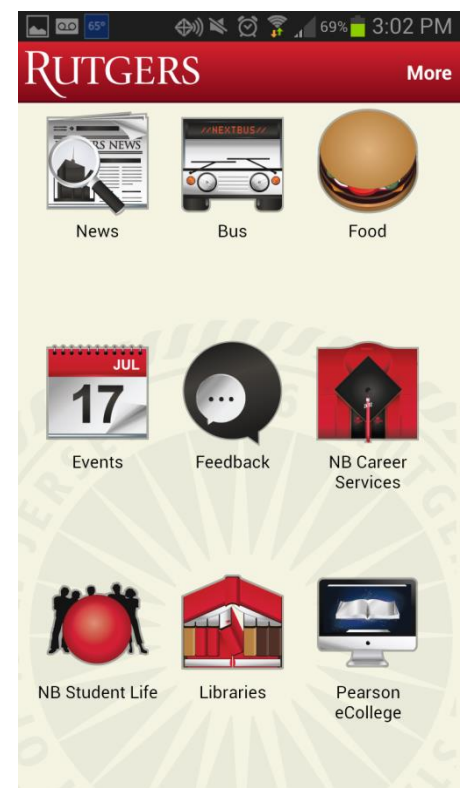
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developed by Rutgers, the State University of New Jersey. This app was focused mostly on the students

of Rutgers University. It contains news for the school, information on the buses, food, events, career

services, the schools libraries, emergency alerts and more.

I found that this app loaded much faster than the northeastern app. The home screen I found to have

awkwardly large icons, as seen in figure 5 on the previous page. Many of the home screen items were

hidden because the screen was "customizable" giving the user the ability to add or remove items from

the home screen. I also found that many of the features had listings for different campuses, when the

average user will probably ever be on one campus. I think it would be better to select a campus and only

have to view that one campus when there are multiple choices. From this app I took that a static home

screen would work best for my app and that I should be careful about how large I make the icons.

Yale University 2.2.3

The Yale app, Yale Admissions, was developed by YOUVIST LLC. It was

not developed for students of the University but for prospective

students, it was essentially a marketing tool. It contains several things

that a prospective student would want to see before or during a visit to

the school. In the app there is a map of campus, photos and videos

from around campus, info on academics and contact information.

The map of the school that was poorly implemented and hard to read.

The information about the major areas of study gives a good summary

for each major, and links to an external source for more information.

The videos get opened up in YouTube and promote the school to the

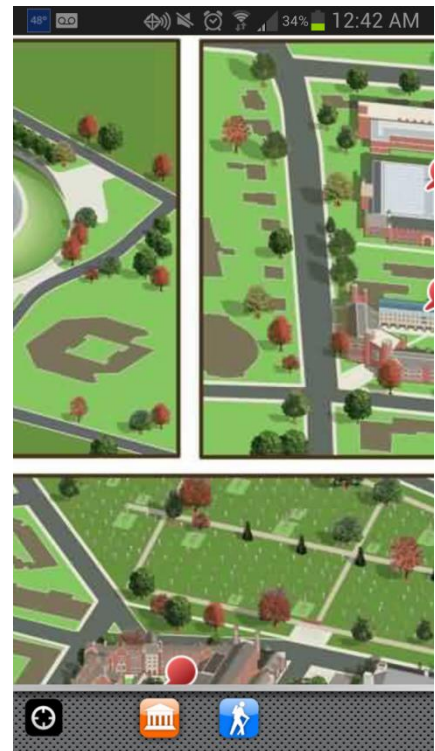prospective students. The panorama photos did not work on my phone.

Figure 6

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While producing the Tech Bible app I found the same company had also produced a similar app for WPI,

of similar quality. This app had minimal useful information for me to learn from while designing my own

app.

University Of Massachusetts Amherst 2.2.4

The next app review is for University of Massachusetts Amherst.

UMassGuide (Amherst) was developed by YUN_CLOUD. The app was

developed for UMass students with campus maps, a listing of campus

buildings, and information of the bus transit system, and other useful links

for students.

This app does not have the prettiest UI but it is consistent, which I liked

about it. The app is also rather simplistic, allowing the user to use Google

maps if they have an internet connection, on a built in map if they do not.

Unlike the Northeastern app it put its links to external sources together so

Figure 7

the user knows when he will be clicking on something to take him away

from the app. My major complaint about the app is its building list (figure 7).

It consists of several dropdown lists of different portions of the alphabet, it

feels really clunky. I was also expecting to learn information about the

different buildings when selecting them, but instead I was just taken to the

building on a map. What I took most from this app was to make my UI

simple and consistent over fancy and inconsistent. I also learned how I do

not want to make a listing of buildings.

Radford University 2.2.5

The app for Radford University, RU Mobile, was developed by Radford Univ.

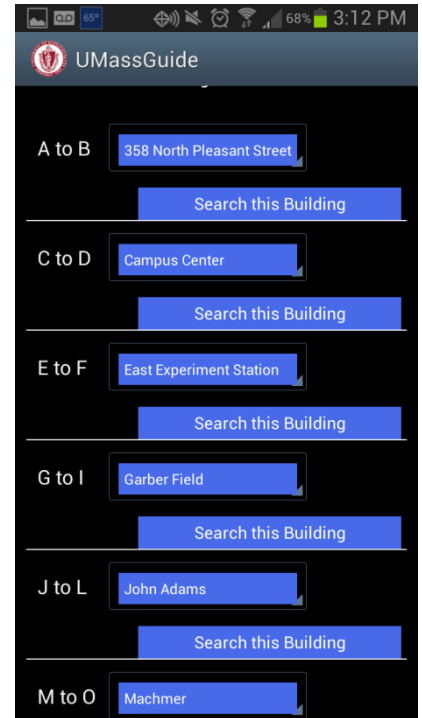The app was developed for RU students. The app has a directory, dining
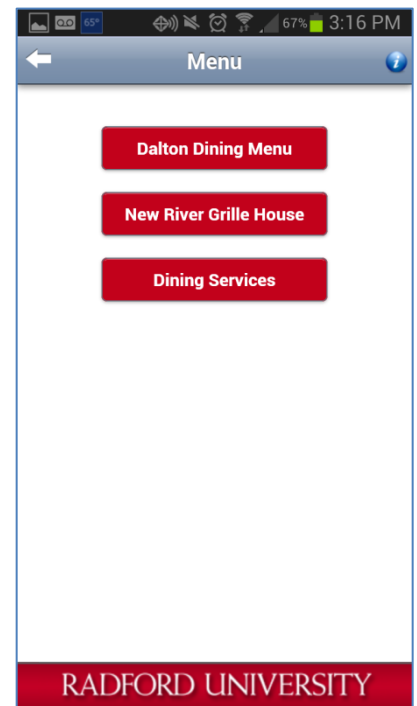
Figure 8

menu maps, an events calendar, athletics, news, and more.

This app felt very clunky and ported. The UI of the app looks like it was designed for an apple product, not for android, as seen in figure 8 on the previous page. Many of the features were not working and the app was slow. From this app I learned to keep the UI consistent with Android standards, and to change the UI to match the systems standards if it gets ported to another system.

Virginia Tech 2.2.6

Hokie Mobile, is the app developed by and for Virginia Tech. The app was developed for students of Virginia Tech. The app has a directory of community members, an interactive Google map of campus, a listing of courses available to students, a calendar of campus events and various other functionalities.

This app was one of the best I studied. It gave a plethora of information to the user, and had most of the information stored on phone, and if it was not, the upload speed was rather quick even with low wireless signal. The major complaint I found when studying this app in particular was that the visuals for the Courses section was rather glitchy and that the text size in general was rather small.

Figure 9

United States History 2.2.7

United States History was developed by MTC APPS. The app was developed for anyone interested in US History or Government. The app includes transcripts of various historical documents such as the constitution and federalist papers. It has information on each president, military branch and

Figure 10

each state.

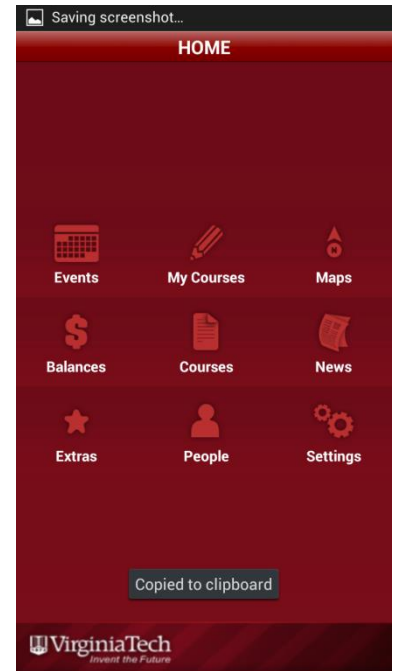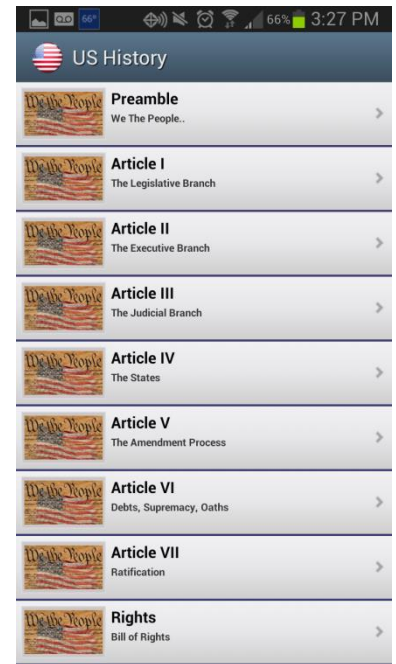I found this app to be very well put together. It used a consistent patterned background behind the text and used contrasting colors between the text and the background making it easy to read. The UI is consistent throughout the application. Sometimes I found it hard to identify what list I was exactly looking at when it came down to its breakdown of documents, such as the US Constitution or Articles of Confederation. What I learned from this document that I applied in my own, was to keep UI elements consistent and to make sure at the top of the screen the user know exactly what part of the app they are looking at, at any given moment. This is visible in figure 10, where it has a listing of the different articles of the US Constitution; but it does not state that on the screen.

Summary of Apps Research 2.2.8

These apps had many features in common with each other. On the next page (figure 11) there is a table comparing the features each app studied had along with the tech bible app I have developed.

Overall what I learned by studying the applications can be broken down into things they did right and things they did wrong. Starting with what they did wrong, many of the apps I studied had links to external sources. Some of these links were indistinguishable from links to internal sources. I feel that this was bad design should be avoided. Another of the failures I found was apps that used images instead of solid colors or patterns for the background. These pictures can detract from the main purpose of the screen and can make the overlying text hard to read. The final big thing I took from what the apps did poorly was being overly reliant on a central database to store the data. This made the apps slow to load and unusable if the was no network connection.

It is harder to determine what the main factors that the apps did right; if it is done well then you shouldn't notice it. One of the things I was able to see apps do right was was making the user interface consistent. There were apps that did not have a pretty UI but stayed the same throughout the app. This made navigating the app simple. The apps that held data on the system tended to run faster and more

consistently than those that depended on the network. I took everything I learned from studying these apps into consideration while developing the Tech Bible App.

	Northeastern	Rutgers	Yale	UMass	Radford	Virginia Tech	US History	Tech Bible
Map	X		X	X	X	X		
Pictures			X					
Academics	X		X		X	X		
Buildings				X	X			X
Food	X	X			X	X		
Transportation		X		X				
Events/Calendar		X			X	X	X	X
Directory	X					X		
Athletics					X			
Links	X			X	X	X		
News	X	X			X	X		
Alumni	X	X						
Historical Info							X	X

Figure 11

11

Methodology 3

Development Platform 3.1

The Platform I chose to use to develop this app on was the Android platform. I chose android for many

reasons despite the fact that the majority of students surveyed owned devises on Apples iOS Platform.

The first reason is the price for obtaining the ability to develop. To develop for the iOS Platform, you

must first own an Apple Computer, which I do not. To develop for the iOS I would have had to an Apple

computer to develop on, alongside the price of the development software itself, which costs $99 a year.

I would need to purchase this developer license to test the software on the devices themselves. The

android platform is free to use and download and can be developed on the computer software I own.

The programming language that is used by Android is Java. I am familiar with Java and have a great deal

of experience programming in Java. The android SDK also runs off of the Eclipse IDE which I also have

experience in using. The language for the iOS development platform is Objective-C. I have no experience

developing in Objective-C; it would have been much harder for me to learn a new language while

developing the app.

My third and final reason for choosing the Android platform is convenience. I own an Android Phone,

and have owned one for the past three years. This is convenient because I own a device in which I can

test the app on outside of an emulator on my computer. It also allowed me to test the usability of the

app in real life situations; with the app installed on my phone I could open it up whenever I needed to
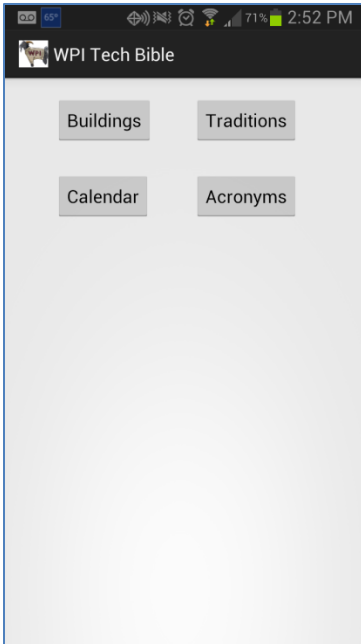
look up information it contained.

Figure 12
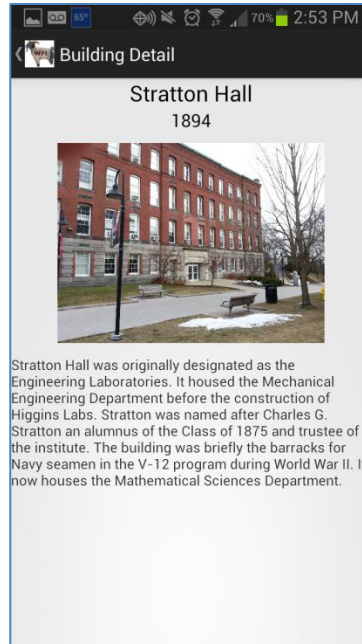
Figure 13
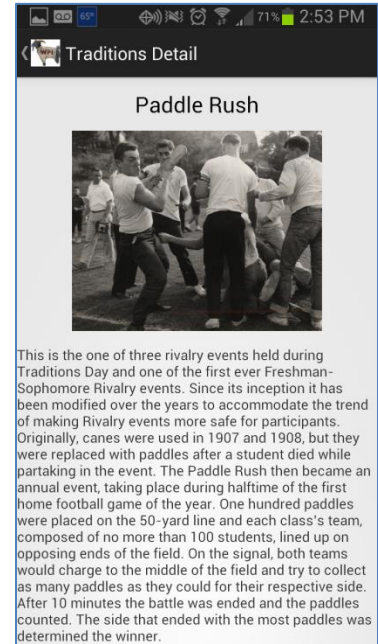
Figure 14

App Design 3.2

My app consists of four different main sections. These sections consist of Buildings, Traditions, Acronym

Dictionary, and Calendar. Each of these sections is directly accessible from the home screen of the app.

The sections of the app are accessed by four buttons on the home screen, one for each app (figure 12).

The first section I developed is the section about the buildings. When the user taps the button labeled

buildings (figure 12) it brings him to a list of buildings. Due to time constraints it is not a complete list of

buildings on campus; the list is of the first ten buildings to be placed on campus. This list is in order of

the date of creation starting with Boynton Hall and ending with Higgins House. When the user clicks on

any of the buildings in the list, they are brought to a new page with a picture and information on the

building. Above (figure 13) is an example of the screen that appears when Stratton Hall is clicked. The

text about the building is taken directly from the Tech Bible, while I took the picture with my phone.

The next section I developed was the Traditions Sections. This section was much like the Buildings

Section. When clicking on the Traditions link from the home screen (figure 12) it brings you to a list of

some of the traditions at WPI. To preserve time, I only listed two traditions, the Rope Pull, and Paddle

Rush. When clicking on one of the items in the list it brings the user to the page about Traditions filled

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with information about that tradition. On the previous page (figure 14) there is a screen shot of the display after the user clicks Paddle Rush on that list. The text was taken from the Tech Bible, while the photo was taken from the WPI Archives.

The next section I created the Acronym Dictionary. After the user presses the Acronyms button on the home screen (figure 12) the user is brought to the screen to the right of the page (figure 15). From there the user can change which acronyms are being displayed from the drop down at the top of the screen. In the case of figure 14 it is displaying information on acronyms for buildings. The other categories the user can chose from include, Majors, Projects, People, and Organizations. All of this data was taken from the Tech Bible.
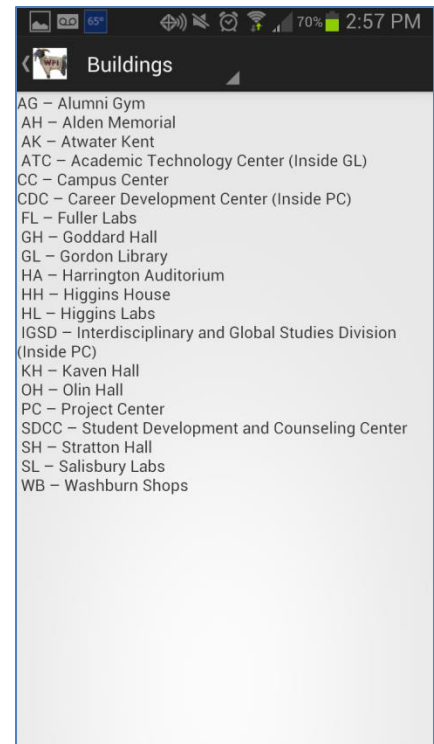
The final Section I developed is the Calendar. This section is just a standard month calendar that pops up when the user clicks on it. If I had the time I would have implemented putting campus events on the calendar so the user can know what is going on around campus.

Figure 15

Developing the App 3.3

Much of the effort in developing the App was based on trial and error. Since this was the first time I was working on the platform I didn't exactly know what I was doing I had overarching ideas for how aspects would turn out and would work in small steps to achieve, or get close to achieving this goal. I would consult the android developers guide heavily when trying to bring the ideas in my head into the app itself. I refactored and redesigned each section that I worked on many times.

Sometimes these changes were made from a technical standpoint and sometimes they were from a usability standpoint. The best example I have for the technical design change comes from the section

about buildings. Each Android application is made up of many Activities. While developing the building

section I was creating a separate activity that would launch for each building. This process became

overly redundant, and was not scalable or easy to modify. I then made one single activity that would get

updated with the information on the building the user selected. This made the application simpler and

easier to modify, which came in handy when I saw a need for an update to improve the usability.

When showing off the Tech Bible App to someone while developing it, I noticed that this person was

having trouble navigating back to previous Activities. This person was an iOS user and unaware of many

of the features of android, like the back button. I saw this as an error in my part as I did not make the

user interface easy enough. New versions of Android have what is called the up button. The up button

brings the user to the "Parent Activity" of the current one. This is similar to the back button, but the

back button will switch to the last opened Activity, even if is in a different app. The up button is also

onscreen, where the back button is generally a hardware button, and looks like a back button to the

average user.

Conducting the Post Study 3.4

I conducted the post study in order to get a measure of the usability of the app I created along with

looking at the interest in publishing the app. In the study I sat down with the subjects of the study and

had them use the Tech Bible App for as long as they desired. I had a paper copy of the tech bible for the

subject to use if they wanted to compare the app with the paper version. To recruit subjects for the

study I utilized Facebook and members of the Student Alumni Society.

Results and Discussion 4

The demographics of my study matched closely to that of the pre survey. The majority of those who took part in the study owned Mobile Computing Devices. It was also a relatively even representation of each class, and a large diversity of majors. Of the people who owned Mobile Computing Devices, an overwhelming majority had IPhones (69%).

None of the respondents claimed to have any trouble using the application. Although about one in three found the same bug in the software. The bug causes the app to crash and is due to a memory overflow when the app opens up to many Activities and fails to close them. I had found this bug in testing while developing the app and had thought I had fixed it, and when it sprung up again during the study I decided not to fix it to keep the app consistent for everyone in the study.
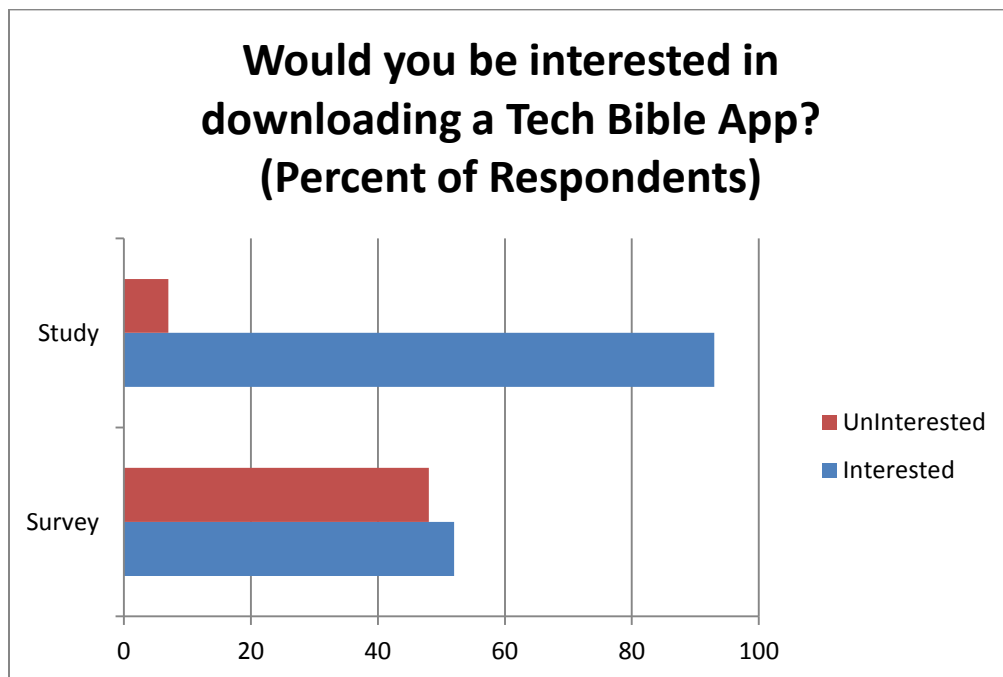

Figure 16

One of the greatest differences between the survey group and the study group is the number who would use the app if it were to be published. As seen in figure 16 above, the number of people who said

they would use the app in the study was about %50, the people who stated that they would use the app in the survey jumped up to about 90%. This doesn't necessarily mean that the app nearly double the interest in having one. The could have been several biases involved in raising this number so much.one such bias could be that study participants met me. They may have been more likely to say yes having done so survey even though I told them that their responses would remain anonymous. The demographic of users may have simple been more interested in the subject matter to volunteer to take part in a study, which would take more time and effort on their part than a survey.

The feature that the study participants found most useful is the acronym dictionary. They also showed interest in having a fully calendar of events around campus, something that I started to implement but did not complete. Each section I created was a favorite of at least one of the study participants; although there were only a four main subsections to choose from it shows that each feature I chose to implement, which was largely based on survey results represented a good portion of the population of the student body.

When asked what features the survey participants would like to have included in the app, many of the participants wished for features I would have implement if I had the time. This includes directories for both local restaurants and campus faculty. Participants also wanted to see helpful links and more content that exists in the paper version of the tech bible; such as the letter from the president, more information on organizations. Information about past presidents and other important figures in WPI history was also on people's lists of things the wish were included.

As for comments on the user interface they were all positive. The only complaint of the user interface was that was not polished enough. Since the app was still in a rough development state I had expected that this would be a response.

Conclusions 5

From the results of both my pre survey and post study, I conclude that developing the Tech Bible App would in fact improve the readership of the tech bible. A larger portion of those surveyed said they would download and use the app than those who claimed to have read it. Also many of the features that respondents asked for in both the study and the survey are already part of the paper Tech Bible, they just did not even know it.

I also found having the app in my phone very convenient. On a handful of occasions I would pull out my phone to open up the app and check a fact I wanted to see. If the app were to be fully developed I could see the number of times this happening to increase as there have also been times I had to use Google to find information on the school. One of the study participants also admitted to using their phone to look up where professors offices were, which given the time I would hope to see get implemented in the App.

Conclusions 5

Recommendations 6

I would recommend that this app gets fully developed to improve the readership of the Tech Bible. During my time developing the app I also noticed that another problem with the small readership of the Tech Bible is that the contents of the book are not well advertised. When generating ideas of things to add to the paper version, many of the members of the Student Alumni Society recommended things that were already in the Tech Bible.

Since a large portion of the student body of WPI has IPhones and other iOS systems, the app should also be developed for that platform. If the readership of the Tech Bible is to drastically improve, along with publishing an app for it, the contents of the book would also have to be heavily advertised. Especially since the app stores are heavily populated with apps it's only going to be downloaded by students if they know it exists and where they can find it. The average student has no idea of what is in the Tech Bible, to improve the readership what is needed it to make it more applicable to the modern WPI student, which the app does, and to advertise it so that people know what it contains.

References 7

Start Developing iOS Apps Today; iOS Developer Library;
> https://developer.apple.com/library/ios/#referencelibrary/GettingStarted/RoadMapiOS/chapters/Introduction.html ; (4/30/13)

Android, the world's most popular mobile platform; Android Developer Website;
> http://developer.android.com/about/index.html ; (4/30/13)

Virginia Tech; Hoki Mobile; Google Play Store;
> https://play.google.com/store/apps/details?id=edu.vt.es.ips.hokiemobile (4/30/13)

Northeastern University Admissions; Northeastern Mobile; Google Play Store ;
> https://play.google.com/store/apps/details?id=com.pyxismobile.northeastern_mobile.ui.activity (4/30/13)

Radford Univ; RU Mobile; Google Play Store;
> https://play.google.com/store/apps/details?id=com.radford.rumobile (4/30/13)

Rutgers, The State University of New Jersey; Rutgers University; Google Play Store;
> https://play.google.com/store/apps/details?id=edu.rutgers.css.Rutgers (4/30/13)

Yun_Cloud; UMass Guide (Amherst); Google Play Store;
> https://play.google.com/store/apps/details?id=yuncloud.android.umassguide (4/30/13)

YouVisist LLC; Yale Admissions ; Google Play Store;
> https://play.google.com/store/apps/details?id=com.yc360.college.yaletour (4/30/13)

MTC Apps; United States History; Google Play Store;
> https://play.google.com/store/apps/details?id=com.matt.android.adds.freeHistory (4/30/13)

Appendix A: Screenshot Flowchart
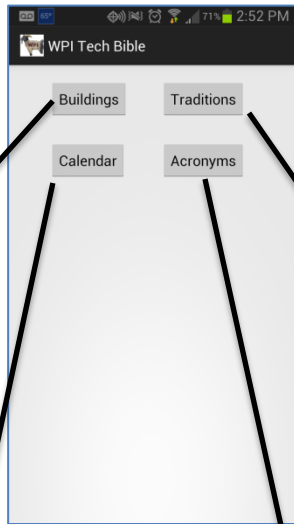
Home Screen
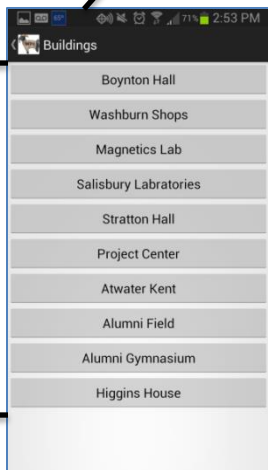
Buildings List

Calendar
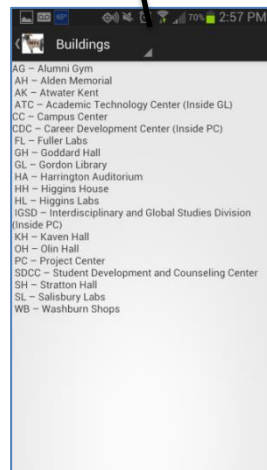
Acronym Dictionary
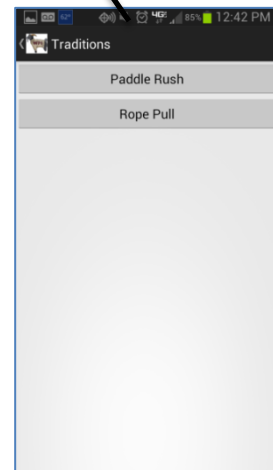
Traditions List

Building Detail page
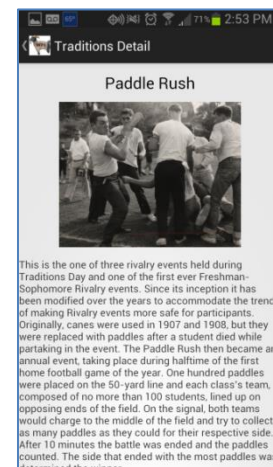
Traditions Detail

Appendix B: Modular Diagram
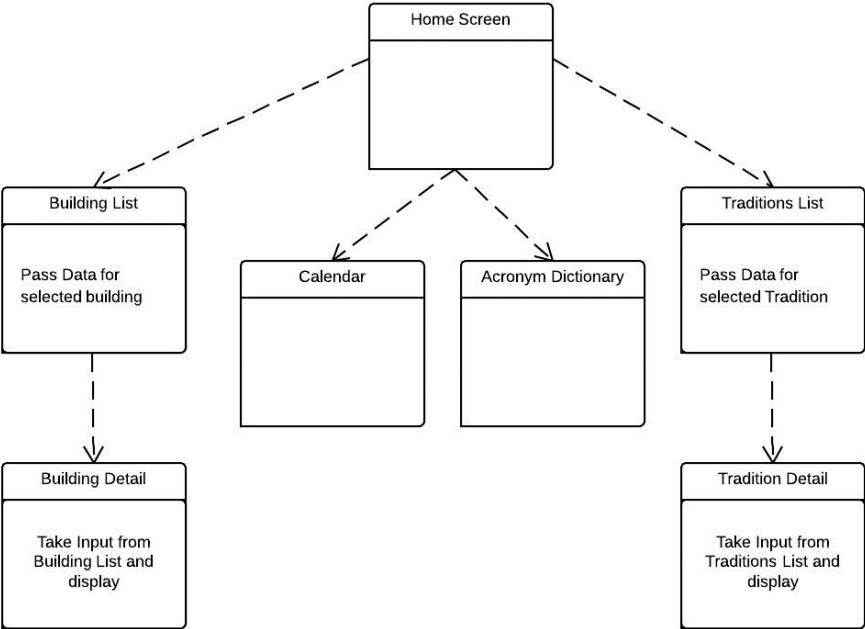
Appendix C: Pre-Survey Results Breakdown

1. What is your current class year?		
Answer	**Number of Responses**	**Percent of total**
Freshman	7	23%
Sophomore	12	39%
Junior	7	23%
Senior	5	16%

2. Gender		
Answer	Number of Responses	Percent of total
Male	15	48%
Female	16	52%

3. What is your current major	
Electrical and Computer Engineering	1
Biology	4
Civil Engineering	1
Biochemistry	1
Mechanical Engineering	2
Management Engineering	3
Psychological Science	6
Chemical Engineering	3
Computer Science	4
Aerospace Engineering	1
Interactive Media and Game Development	1
Robotics Engineering	1
Biomedical Engineering	1

4. Are there any campus resources that you did not know of when first coming to WPI that you wish you had known? (responses stating no not shown)

- Course planning, better idea of rooms, knowing about all the different tutoring resources.
- WPI Scheduler; Reserving Meeting Spaces; CDC Resume Critique; Writing Center; One-on-One Tutoring; SDCC; Dining Hall Menu
- Reserving tech suites and the existence of the writing center
- Being able to reserve classrooms
- I don't know them yet
- The WPI Scheduler
- Tech Suites MASH
- Did not have a good background on Greek Life here
- I might not know about a service still at this time that I wish I had known, yet at this point, this is not the case.
- Not really.

- daily dining hall menu
- Mash, Office hours, professional organizations like NSEB, The OASIS house
- Dining Hall Menu
- reserving meeting spaces
- SNAP
- tech suites and the writing center
- Food
- Tech suites
- daily dining hall menu
- The WPI scheduler

5. **Do you own a mobile computing device?**		
Answer	Number of responses	Percent of total
Yes	23	74%
No	8	26%

6. **If your answer to question 5 was yes, what brand(s) do you own?**		
Answer	**Number of responses**	**Percent of population**
Android Phone	7	30%
Android Tablet	2	9%
IPhone	14	61%
IPod Touch	5	22%
IPad	3	13%
Windows Tablet	1	4%
Other	3	13%

People may select more than one checkbox, so percentages may add up to more than 100%.

7. **If you Answer to question 5 was yes, how often do you use applications (apps) on your device(s)?**		
Answer	**Number of responses**	**Percent of population**
I do not use apps on my device(s)	2	6%
I use apps less than once a day	1	3%
I use apps once or twice a day	6	19%
I use apps once or twice an hour	6	22%
I use apps several times and hour	8	19%

8. If you use applications, what types of applications do you use?(check all that apply)

Answer	Number of responses	Percent of population
Entertainment (games, videos, eBooks etc.)	15	68%
Productivity (email, calculator, calendar, etc.)	16	73%
Social Networking (Facebook, Twitter, etc.)	19	86%
Educational	3	14%
Personal Wellness (fitness tracker, cooking, etc.)	7	32%
News (local news, Weather, national news etc.)	11	50%
Other	3	14%

People may select more than one checkbox, so percentages may add up to more than 100%.

9. How much do you know about the history and traditions of WPI?

Answer	Number of responses	Percent of population
I know nothing	4	13%
I know slightly less than the average student	10	32%
I know as much as the average student	12	39%
I know more than average	1	3%
I consider myself an expert	0	0%

10. Would you like to learn more about the history and traditions of WPI?

Answer	Number of responses	Percent of population
Yes	23	74%
No	8	26%

11. What aspects of WPI life would you like to learn more about?

Answer	Number of responses	Percent of population
Traditions (past and present)	20	65%
Current Buildings (their history, and current uses)	13	42%
Previous Buildings (their purpose, why they are gone)	7	23%
General History (timeline of events)	12	39%
Famous Alumni	13	42%
Greek Life	10	32%
Local businesses (restaurants or stores)	10	32%
I have no interest	6	19%
Other	0	0%

People may select more than one checkbox, so percentages may add up to more than 100%.

12. Do you know what the WPI Tech Bible is?

Answer	Number of responses	Percent of population
Yes	30	97%
No	1	3%

13. Do you own a copy of the Tech Bible?

Answer	Number of responses	Percent of population
Yes, I have a copy	28	90%
No, I do not have a copy	3	10%

14. Have you read the Tech Bible?

Answer	Number of responses	Percent of population
Yes, I have skimmed it	10	32%
Yes, I have read it cover to Cover	1	3%
No, I have not read it	20	65%

15. Did you know that a revised edition of the Tech Bible was handed out to freshmen this year?

Answer	Number of responses	Percent of population
Yes	5	16%
No	26	84%

16. What are some things that you liked about the Tech Bible?

- All the history and traditions
- Interesting information
- the size "little red book"
- I haven't read it
- It is very funny
- I like that it talks about the traditions about WPI.
- I saw the new tech bible. It is the new "red".
- I personally think they should have stuck with the regular color we always had, the white. Also, the brand new red is hideous.
- Are they really trying to pass that off as Crimson? I have maroon, red, and who knows what shade of colors on my WPI things, I don't have any crimson. Just putting it out there.
- Compactness
- Didn't read it
- History of buildings and traditions
- It was small and full of really interesting facts.
- It has a lot of information in it that you wouldn't otherwise know
- all of the information is one spot
- It is small.
- The history of the school and some fun facts about WPI.
- That it had WPI's traditions in it and seemed interesting.
- what is it?

17. What are some things you disliked about the Tech Bible?

- There was nothing really current

- Not interesting format
- the print and lack of clarity
- I haven't read it
- Haven't read enough of it to dislike it
- I didn't dislike it at all, I think it's a great tradition. I don't think they should make a Tech Bible app though, it takes how special it is away and makes it just something ordinary. We have to hold onto our tech bibles and beanies, anyone could download the tech bible app, losing its originality.
- Didn't read it
- It was really too small
- Nothing
- should be computerized
- print and compactness of info
- It is small print.
- The print is too small
- idk
- It's kind of boring
- n/a
- I did not care for it

18. If the Tech Bible was released as a smart phone or tablet app, would you be more likely to read it?

Answer	Number of responses	Percent of population
Yes	16	52%
No	15	48%

19. What features of a Tech Bible App would you find helpful or useful?		
Answer	Number of responses	Percent of population
An interactive campus map	22	73%
Sports Schedule (when/where teams play, match results)	21	70%
Campus Directory (faculty emails, office locations etc.)	22	73%
Dining menu (WPI dining halls)	14	47%
Local Restaurant Directory	20	67%
Location Based Services ("guided tour" of campus, info about nearby buildings)	4	13%
Campus Event Calendar	24	80%
Class Gift Directory (locations of class gifts on campus)	6	20%
History and Traditions of WPI	13	43%
Acronym Dictionary	18	60%
Computer Labs/ Study locations	18	60%
External Links (WPI website, and similar sites)	10	33%
Other	2	7%

People may select more than one checkbox, so percentages may add up to more than 100%.

20. Additional comments or suggestions

- N/A
- tech suite availabilities in library and campus center
- keep it simple
- They shouldn't name this the Tech Bible app, just a WPI app for students. I like the tech bible being solely a book, I would hate to see it attributed to an app. We don't walk over the bridge to get an app, we walk over the bridge to get a book, to continue a tradition, to get something we hold onto forever. The app would ruin how special this tradition is. By making it a WPI app anyone could use it like per-frosh and it could be more of a information type app then something special like the Tech Bible. n/a
- More food.
- Nope
- what is the tech bible?

Appendix D: Study Results

1. What is your current class year?

Answer	Number of Responses	Percent of total
Freshman	5	33%
Sophomore	3	20%
Junior	4	27%
Senior	3	20%

2. Gender

Answer	Number of Responses	Percent of total
Male	9	60%
Female	6	40%

3. What is your current major

Biology	1
Biochemistry	1
Mechanical Engineering	1
Environmental Engineering	1
Biochemistry	1
Chemical Engineering	2
Robotics Engineering	3
Biomedical Engineering	4

4. Do you own a mobile computing device?

Answer	Number of responses	Percent of total
Yes	13	87%
No	2	13%

5. If your answer to question 4 was yes, what brand(s) do you own?

Answer	Number of responses	Percent of population
Android Phone	0	0%
Android Tablet	3	23%
IPhone	9	69%
IPad	0	0%
Windows Tablet	0	0%
Other	1	8%

People may select more than one checkbox, so percentages may add up to more than 100%.

6. If you Answer to question 4 was yes, how often do you use applications (apps) on your device(s)?

Answer	Number of responses	Percent of population
I do not use apps on my device(s)	0	0%
I use apps less than once a day	1	8%
I use apps once or twice a day	1	8%
I use apps once or twice an hour	3	23%
I use apps several times and hour	8	62%

7. If you use applications, what types of applications do you use?(check all that apply)

Answer	Number of responses	Percent of population
Entertainment (games, videos, eBooks etc.)	9	19%
Productivity (email, calculator, calendar, etc.)	10	21%
Social Networking (Facebook, Twitter, etc.)	10	21%
Educational	5	11%
Personal Wellness (fitness tracker, cooking, etc.)	3	6%
News (local news, Weather, national news etc.)	9	19%
Other	1	2%

8. Did you have any trouble using the app?

Answer	Number of responses	Percent of total
Yes, but I was able to figure it out on my own	0	0%
Yes, and I needed help to figure out how to use it	0	0%
No, I had no trouble	15	100%

9. If the Tech Bible app was to become more fully implemented and published would you download/use the app?

Answer	Number of responses	Percent of total
Yes	14	93%
No	1	7%

10. Did you notice any bugs with the app?

Answer	Number of responses	Percent of total
Yes	5	33%
No	10	67%

11. Describe any bugs

- Crashed after I opened several Building pages. Happened twice.
- None
- I made it crash twice on the buildings section. :(
- It stopped working. But then you fixed it.there weren't any bugs
- In the traditions section the letter n seemed to glitch out and didn't appear

12. What features did you find most useful

- The calendar
- I liked the section on the buildings.
- The acronyms, I feel, will be helpful as well, especially to people new to the school.
- The acronyms were helpful. If you are ever confused that feature would help clarify questions.
- The table of contents made searching easy.
- I liked the acronym part and the back button. acronym dictionary, calendar
- I like the information. i think the calender is the most useful if it can get up and running
- The acronyms as well as the calendar that would have events for upcoming weeks/months.
- I liked the acronyms section and the buildings section
- The traditions and the acronyms. The separate menus breaking down the topics of the tech bible-- made navigating the information much easier
- Buildings

List any features not in the app that you think should be included, please describe

- Search function, especially for acronyms. Also, after clicking "Acronyms" on the main menu, it should bring you to a sub-menu for Buildings, Projects, People, etc. rather than having to change it on the header every time. Took me a minute to figure out there were more options beyond the default, "Buildings." It should also better support landscape viewing.
- None
- Helpful links (can you link out of the app? I don't know how these things work). Info on organizations (I'm not sure how realistic that would be, but maybe).
- Statements from the clubs, president, etc. From the beginning of the tech bible.
- More of the traditions should be included.
- list a restaurants in the area and their contact info. pictures should move with words - option to view many pictures by sliding right and left
- sync to techsync calender for all events maybe have links to the different professors and their contact information along with what research they are doing (u have no idea how many times i have had to look up where a professors office is on my smartphone) a game to go along with it
- The places on campus for the buildings should have a map of campus and a star with the place
- Descriptions of some events that go on, and when they are usually held, such as traditions day and homecoming.
- quick facts section include presidents and important people
- Maybe going beyond the information in the tech bible to include more information about WPI's founders and alumni
- More traditions and acronyms

13. List any features included in the app that you feel should be excluded.

- None.
- None
- All of them seemed relevant so I would include all of them.
- The empty calendar wasn't useful.
- Maybe the calender if nothing is going to be in it.
- n/a
- maybe if there is useless info it doesn't need to go on the app
- Just the above thing
- None.
- n/a
- I'm a little confused how the calendar works, maybe if there were dates in it, it would be easier to understand

14. General Comments(likes and dislikes)

- I want this app!!!!
- I like that the Tech Bible is now digital because I think that more kids will actually read their tech bibles if it was digital.
- There were random dashes in the descriptions, I noticed from where the words broke the line in the actual tech bible. I don't know if you kept them in there on purpose or not.
- I like the easy accessibility of the app and its features. Anyone could use it, very user friendly.
- Good stuff. I love the idea of this, but it would be great if there was more sections of the bible and more subsections in each section added.
- n/a
- it should be converted to i phone as well
- I want this app!!!!
- Looks to be very helpful, definitely would download it.
- I liked the photographs of buildings, more colorful would be fun
- It has some interesting information that I had never read before in the tech bible but I was confused by what was going into the calendar section. not completed yet?
- Likes: easy to use Dislikes: none
- What do you like or dislike about interface?
- Make it pretty! And get WPI colors. Maybe a logo or picture or something. Marketing. :-P
- It's very clean and simple! But it could use a little more pizzaz. I figure you'll add that later on. Also, will you be able to add things to the calendar, or will it have WPI events on it?
- I like how simple it was to use the app or find what you are looking for.
- Easy to use and didn't need explanation.

- It's very intuitive. I wish there was a basic home button. easy to use, looks very clean
- n/a
- it was easy to navigate and understand (moving back and forward) which was nice interface seemed very plane but I understand that it is still in development. I liked how user-friendly it was, easy to go back and forth between menus and categories