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## Specifications for Creating a Mobile Application for Meeting and Conference Attendees

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Specifications for Creating a Mobile Application for Meeting and Conference Attendees

by

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Bachelor of Science  
University of Nevada, Las Vegas  
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## **ABSTRACT**

# **Specifications for Creating a Mobile Application for Meeting and Conference Attendees**

by

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The purpose of this study was to develop specifications for a mobile application for meeting and conference attendees. The set of features was determined by comparing the current offerings of mobile applications for meetings and conferences. There was a discussion of the purpose of meetings and conferences, followed by a review of the history of meetings technology. The mobile software development process was also explored. The paper resulted in the creation of flow charts and wireframe outlines that would be used to develop a mobile application for meetings and conferences.

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## **PART ONE**

### **Introduction**

Technology is constantly changing and becoming more accessible and affordable. No longer does one need to be tied to a desk to access the Internet. Mobile phones now have that capability through advances in device technology and faster broadband services. Mobile phones are able to access content online through faster broadband connections. The handset devices are getting smarter every day, and operate more like a computer.

Tablet devices are also becoming popular, with the introduction of the iPad last year. No longer does someone have to carry a heavy laptop around with him or her. Tablets are compact and lightweight and function like a computer. Many operate on the same platform as mobile phone devices, and run the same types of mobile applications. The number of tablet devices on the market today continues to increase, with a new device being introduced almost every week, giving people a variety of choices. Tablets were the most talked about item at the Consumer Electronics Show (CES) in Las Vegas this year (CES, 2011).

CNN money reports that the number of smart phones being used in the US will exceed 117 million in the year 2011 (Goldman, 2011). More specifically, Ball, (2011 B) a technology expert for the meetings industry, reported in a recent webinar that two out of every three people have a mobile phone. While not everyone uses a smart phone, more and more people will adopt them in the future. Ball (2011 B) also reported that business travelers are the people that tend to use this technology the most right now.

The popularity and number of applications for mobile devices has increased dramatically over the last few years. For example, the Apple store has over 300,000 mobile applications to date, and over 10 billion of these applications have been downloaded onto iPhones and iPads

(Oliver, 2011). Meeting and conference attendees are embracing this technology, and meeting planners must integrate it into their events in order to satisfy the attendees desire for access.

### **Purpose Statement**

The purpose of this study is to develop specifications for a mobile application for meeting and conference attendees. The paper will result in the creation of flow charts and wireframe outlines that will be used to develop a mobile application for meetings and conferences.

### **Justification**

People meet for many reasons. Networking and education are the two most common reasons for attending a meeting or conference. Technology has played a role in bringing people together, in making processes easier, and has made the sharing of information easier and more affordable. Through technology, people can share ideas and information quickly. Technology continues to advance and meeting planners must stay on top of the trends to keep attendees interested in their events.

Technology also has a positive impact on sustainability. Advances in technology allow meeting planners to cut costs and print less. Many of the mobile applications on the market today allow attendees to access program guides and other pertinent information. This allows planners to save money and create less waste at a meeting, conference, or trade show.

The use of mobile applications is growing rapidly. As the number of people using smart phones increases, more and more applications will also be developed. These applications do everything from starting your car to controlling the temperature in your home (Las Vegas Review Journal, 2011). There is a huge opportunity in mobile applications because of this growth.

Ball (2011 B) predicts that the next two years are the golden age for mobile application development. He also predicts that by 2013, mobile applications for meetings will become standard operating procedure. Meeting planners will have a mobile application developed specifically for their meeting, conference, or trade show. If they don't have one available, attendees will ask why not.

### **Definition of Terms**

Broadband. "Of, relating to, or being a high-speed communications network and especially one in which a frequency range is divided into multiple independent channels for simultaneous transmissions of signals" (Merriam-Webster, 2011, para. 1).

Geo-positioning technology (GPS). "A system of satellites, computers, and receivers that is able to determine the latitude and longitude of a receiver on earth by calculating the time difference for signals from different satellites to reach the receiver" (Answers.com, 2011, para. 1).

Real-time. The actual time during which something takes place (Dictionary.com, 2011).

Near Field Communications (NFC). "Short-range wireless technology, that uses magnetic field induction to enable communication between devices when they're touched together, or brought within a few centimeters of each other" (SearchMobileComputing.com, 2011, para. 1).

## **PART TWO**

### **Introduction**

History teaches us that people have come together to share ideas and information for centuries. “Archaeologists have found primitive ruins from ancient cultures that were used as meeting areas where citizens would gather to discuss common interests such as government, war, hunting, or tribal celebrations” (Fenich, 2008, pp. 15-16).

As times have changed, technology has played an important role in how people meet and exchange information. This chapter will focus on the history and purpose of meetings and how technology has played a role in bringing people together. It will also take a look at how mobile technology is impacting the meetings industry. It will conclude with a brief discussion about how mobile applications are developed.

### **The Importance of Meetings and Conferences**

Philip Hayward (1997), managing editor of Lodging magazine, discussed the history and importance of trade shows and meetings.

Six hundred years ago in Europe, the emergence of commercial crossroads led to a tumultuous leap of progress in the resurgence of Western Civilization. Where different peoples gathered, commerce flourished, so did the wealth of knowledge. Today, on a similar level, trade shows from New York to Las Vegas to Chicago to Miami yield a wealth of news and information, products and services, and plain face-to-face contact with hundreds of people heretofore encountered only over the phone. (. . . .) It is a form of training in which the benefits are never far behind. (p. 4)

The Convention Industry Council and several meeting and trade show associations commissioned a study to prove the importance and economic benefits of the meeting and

convention industry to the U.S. economy (States, 2011). Their findings state that the meetings industry:

- directly supports 1.7 million jobs,
- contributes \$106 million in U.S. gross domestic product,
- generates \$60 billion in labor income,
- generates \$25.6 billion in state and federal taxes, and
- generates \$263 billion in direct spending to the U.S. economy.

In the report, Bruce MacMillan, President and CEO of Meeting Professionals International (MPI), reminds us “there is no more powerful or valuable force than the power of human connections and live interaction. (. . . .) When people come together, great ideas become reality” (States, 2011, para. 3). Roger Dow, President and CEO of the U.S. Travel Association tells us that meetings and conferences “will soon be recognized as the very definition of working together and creating dynamic environments for business results, consensus building and innovation” (States, 2011, para. 6).

### **Why People Attend Meetings and Conferences**

People attend meetings and conferences for various reasons. Whether it is for educational purposes, to receive a certification or continuing education credits, or to meet with a particular person or persons face-to-face. Business changes, and attending meetings or conferences allows people to learn and get advice from those who influence change within their industry. Garfield (1979) argues that conferences allow attendees to “exchange information, evaluate proposed ideas, cross-pollinate views and exchange knowledge” (para. 1).

In their article about getting the most out of professional meetings, Goldman and Schmalz (2010) listed some specific reasons people gather.

1. Present scholarly work,
2. take certification tests,
3. earn continuing education (CEU) credits,
4. identify new research ideas, information, trends, data, best practices,
5. re-energize,
6. network, renew connections,
7. mentor, be mentored,
8. job hunt,
9. meet colleagues,
10. recruit new clients/project partners,
11. catch up on the latest industry news, and
12. socialize.

## **Technology at Meetings and Conferences**

### **History of Technology**

When it comes to modern technology one thing remains constant; change. We have seen much advancement over the last 25 years. Technology has and continues to change the way we communicate and share information at work and in our personal lives. The meetings industry has not been immune to this change. Ball (2005) outlined some of the advancements that have impacted the hospitality industry, which includes meetings and conferences.

### **25 years of meeting technology.**

One hundred million computers were used in business in 1980. The first on-site registration system was introduced, along with computerized badge production and lead

retrieval. IBM released the first personal computer in 1981. In 1982, the first video conferencing system was introduced. The fee to use the system was \$1000 per hour (Ball, 2005).

The first cellular network was started in 1983. The Delphi Management System was also introduced that year. It was the first hospitality computer system designed to manage meetings, group sales, catering, and marketing. Apple released the first Macintosh computer in 1984. In 1985, Microsoft released its first version of Windows. CD's also hit the market at that time (Ball, 2005).

Between 1987 and 1999, the number of fax machines being used totaled more than 2.5 million. Tim Berners-Lee was one of the modern day pioneers that helped to bring about the World Wide Web in 1990. There were 130 web sites in 1993. That number grew to more than 8 billion by 2004 (Ball, 2005).

The first notebook computers were introduced in 1991. We also saw the first use of smart cards, plastic cards with computer chips inside, used for lead retrieval at a trade show that year. In 1994, that technology developed into cards with a magnetic stripe, similar to a credit card (Ball, 2005).

### **The Internet.**

In 1995, Hilton Hotels launched the first hotel reservation website, allowing people to book a hotel room online. Most major hotels followed suit by 1997. The first hotel online request for proposal (RFP) system was introduced in 1996. By 1998, the first integrated housing, registration, and air-booking system was launched online. In 2000, the first virtual trade show was held (Ball, 2005).

In 2003, Intel built wireless technology into its computer chips. That same year, wireless high speed Internet was made available in more than 6,000 hotels. By 2004, online hotel

bookings exceeded the number of reservations made through a call center (Ball, 2005). Today, more than 80% of Americans have a computer in their home, and almost 92% have access to the Internet (Nielsen Research, 2009, para. 1).

Mobile Internet access began to gain ground in 2000 (Canton, 2000). Once mobile phones were able to access the Internet, more and more people were able to get online. Real-time collaboration also became a reality because of the Internet. People are now able to communicate and send information quickly and simultaneously. Virtual events are also gaining ground and becoming more popular, although many predict that meeting face-to-face will continue to be the preferred way of coming together to share information and ideas (Arvey, 2009).

Our world is being remade by the computer programs that let us talk to each other. The numbers are massive. (. . .) 190 million tweeters, 500 million facebook users, probably a billion using instant messaging and around 1.5 billion humans with email addresses – all technologies relatively few knew or cared about before the past decade (Norton, 2011, para. 1).

### **Mobile Technology at Conferences**

Garfield (1979) wrote about the future use of computers and how they could help people make connections at conferences. “Professional conference organizers see great hope in the future use of computers to facilitate making contacts at conferences. This new technology can help both the young and the more established scientist find people with similar interests” (para. 15). Mobile technology is one of the newest and fastest growing technologies to impact meetings and conferences. According to Ball (2011 B), “there has never been a faster growing medium than mobile” (p. 1).

## **How Mobile Technology Can Help at a Conference**

### **Making connections at conferences.**

Mobile technology is even more powerful at helping people make connections. With the increased use of social media, people can easily connect with others that share similar interests. Many people download applications that allow them to access social media, such as facebook and MySpace, on a smart phone or tablet computer. Applications have also been developed to help people find other people in the same place. Foursquare and facebook both offer this feature. Developers are including social networking features in their mobile applications.

### **Managing time at conferences.**

Mobile technology can also help attendees manage their time while at a conference. Almost all conferences have several educational sessions being offered at the same time. Attendees must choose which one they would like to attend. Many organizers list this information on their website. Some will allow attendees to create a personal schedule in advance. Attendees with Internet enabled phones, smart phones, or tablets can access many of these websites directly on their device.

One challenge with session scheduling is that an attendee might want to attend two different sessions being offered at the same time (Thomson, 2002). Conference organizers can record sessions and post this information on their website, or make it available as a downloadable podcast or video. Again, attendees can then access this information from their phone or tablet.

### **Additional benefits of mobile technology.**

Pelletier and Shea (2010) provided some additional ways mobile technology can benefit both the planner and the attendee of a meeting or conference. Some of those additional benefits

include the ability to share articles or other information of interest quickly and instantly; to provide leads to vendors through the use of emerging technologies; to replace signage with GPS directions sent to a phone, and to allow attendees to sign-up for ancillary or after hour's events.

Sustainability and corporate responsibility is a hot topic in the meetings industry right now. Mobile technologies allow event organizers and attendees to reduce their environmental footprint (Ball, 2011 B). In their report on the economic significance of meetings, the CIC reported that 205 million people attended 1.8 million different meetings, conferences and trade shows held in the United States in 2009 (States, 2010).

Planners have the ability to distribute event programs, slides, or other handouts to attendees through current mobile technology, without expensive printing costs or paper distribution. Think of the reduced amount of waste if those 205 million people used a mobile application rather than printed materials to access the conference agenda. An attendee could sign-on to a website and download the information right to their phone or tablet, real-time. It also allows planners and speakers some flexibility to make changes up to the last minute, if needed.

Planners can get access to real-time feedback (Ball, 2011 A). Many of the applications being developed have features that allow attendees to complete surveys using a computer or their phone. That information is sent to the planner immediately. The planner can then forward that information on to the speaker or presenter, so that they have immediate access to evaluations of their presentation.

Conference organizers are always looking for new revenue streams to support their events. Developers can build in features that will allow planners to sell advertising space. This helps to generate additional revenue and open up additional marketing opportunities to vendors

(Shapiro, 2011). Planners can sell advertising opportunities to exhibitors in the form of banner ads or pop-up messages. An event organizer may also find a sponsor to cover the entire cost of application development.

### **Devices.**

These days more and more people are travelling lighter. Many airlines are now charging passengers for checking bags. Attendees may opt to pack light and not check a bag. They do, however, carry their phones (Singel, 2011). Smart phones are portable and allow for real-time communication. Smart phones also give people access to the Internet without the need of wireless connectivity (Wi-Fi) or a wired connection to a network, through their phone service provider.

Advances in technology, driven by sustained improvements in computing power, speed, and capacity will continue to be one of the most important drivers of change in the decade ahead. The meetings industry will be most affected by advances in communication technology (. . .) including the increased use of smart phones (Codrington, 2010, para. 3).

Many are also opting to bring a smaller, lighter tablet device that fits into a carry on bag, rather than bring a heavy laptop. Many technology companies are creating tablet devices. An example of one such device is the iPad, created by Apple. The iPad is a tablet computer with a touch-sensitive screen. It does not have a physical keyboard like a laptop would (Ball, 2011 A). The iPad weighs as little as 1.3 pounds and boasts a 9.7-inch display (Apple, 2011).

### **Operating platforms.**

Smartphones are essentially handheld computers. Like a computer, the phone needs software installed in order for it to work. Smartphone manufacturers typically partner with

software developers, and that partnership determines what operating software is installed on their device. The most popular platform is Apple's iOS. Two other major platforms currently available are Google's Android and Research In Motion's (RIM) Blackberry software.

Apple's iOS only works on the Apple iPod touch, the iPhone, or the iPad. Because of this, all of the applications that a person downloads for the iPod touch or iPhone will also work on their iPad. However, some developers are creating applications specifically for the iPad, to take advantage of the larger screen and other features specific to the device. These applications are called native apps. Like Apple's iOS, the Google Android platform only works on android devices, and the RIM platform operates exclusively on Blackberry devices.

### **Mobile Applications**

Many conference organizers are having custom mobile applications developed for attendees to download for use while on-site. Many of these applications can be used on either a smartphone or a tablet. MPI had a great response to the app developed for their World Education Congress (WEC) in held in Vancouver, Canada in 2010. They are now developing mobile applications for other uses, such as giving members access to the One + magazine, membership directories, and other content provided on their website (MPI, 2011).

There are many benefits to this for both the organizer and the attendee; from registration, session scheduling, and booking tours; attendees are able to manage their entire conference experience on their phone.

The key is to integrate technologies that free staff and attendees from conference drudgery (waiting in line, hunting for basic information, resolving simple customer service issues) and create more opportunities to interact in a meaningful way.

Conferences are about people meeting people in real-time – technology should support that (Singel, 2011, para. 10).

### **Native applications versus web-based applications.**

Many people debate about which type of application is better to offer, a native or a web-based app. Both have distinct features and benefits. Planners have to consider the pros and cons of each and determine which is the best route to go (Tokosch, 2011). It is also important for a planner to find out whether or not the venue they will be using offers free Wi-Fi and how strong cellular signals are in the area.

#### **Native applications.**

Native apps are programs designed to run on a specific device or operating platform, such as Apple's iOS or Google's Android (mobiThinking, 2010 A). The application must be downloaded from an app store and installed onto the device. The process for developing the application and the code written is different for each platform.

Native apps have several benefits over web-based applications. These include increased security, faster load-times, and the ability to use more functions of the phone, such as the camera or GPS (mobiThinking, 2010 A). Many of the applications can be used regardless if there is a wireless signal or phone service. A major drawback of the native app is cost. Native applications can take more time to develop and the code may have to be rewritten if the application is to be used on more than one operating platform (mobiThinking, 2010 A).

#### **Web-based applications.**

Web-based applications are designed to be accessed on an Internet browser (mobiThinking, 2010 B). The operating platform of the phone does not matter. Web-based apps also have several advantages and disadvantages. Because it is designed to be run on an Internet

browser the software only has to be developed once, and will typically work on all platforms.

Web-based applications are also easier to develop, because they are based on code written for the Internet, rather than a specific system (mobiThinking, 2010 B).

One of the major disadvantages to web-based applications is security. Anyone can access a website. Another disadvantage is load time (Berg, 2010). Web pages can take time to load, depending on the amount of data on the page and the strength of the wireless or data signal. Web-based applications require connection to Wi-Fi or cellular service in order to access the page (mobiThinking, 2010 B). This can make or break the app if the venue does not have good cellular reception or offer free Wi-Fi. Web-based apps currently cannot access some of the other features of the phone, such as the camera or GPS.

### **Application features.**

Many meeting professionals do not have the knowledge or experience to develop an application on their own. They hire companies that employ developers to create the application for them. The features of the application vary depending on the developer and the needs of the planner. Some applications are very simple and offer a few features, while others are more robust and offer a lot of features.

Some of the typical features found in a mobile conference app include:

- conference agenda,
- exhibition guide,
- venue maps,
- access to attendee lists,
- online registration and ticketing,
- social media (Twitter feeds, LinkedIn, facebook),

- lead retrieval or information exchange,
- alerts and messages sent via push notification or SMS,
- audience polling or surveys (Ball, 2010 B; Lukazewski, 2010).

There are several companies that have developed applications specifically for the meeting and convention industry. They sell the application as a bundle that includes certain features and levels of service. Table 1 lists current conference mobile application developers and the features that they include in their application.

Quickmobile (2011) offers many of the features listed above. In addition, they also offer a city guide, photo galleries, sponsorship and advertising, and access to podcasts or videos. According to the list of features on their website, their app does not include an exhibit guide, lead retrieval, or venue maps. EventKaddy (2010) includes a conference schedule, venue maps, alerts and messages via push notification, surveys and polling, and access to an exhibit guide. They do not have speaker and attendee lists, social media integration, and lead retrieval features offered at this time.

Event Pilot (2011) offers three packages to choose from. Their lite, or basic package includes schedules, interactive venue maps, social media, speaker information, and session information. It is available as a native app for Blackberry, iPhone, iPad, and web-enabled phones. Their Plus package includes many more features at a much higher cost to the planner. In addition to those listed above, the plus package also offers lead retrieval and information exchange, local city guides, surveys, polls, PowerPoint slide conversion, schedule alerts, random ads, note taking, and exhibitor and sponsor lists.

Follow-Me (2011) is created by core-apps. They develop native meeting apps for smartphone devices. They offer a schedule tool, maps and exhibitor information, event and

speaker information, and social media. Connect mobile (2010) event applications are developed by AllianceTech. They offer an event guide and personal scheduler, social media integration, session surveys and evaluations, and floor maps and exhibitor information.

## **Developing Mobile Applications**

### **Development Process**

Software developers use flow charts and wireframes to outline the features of their applications, how those features will function, and what the pages will look like, before they begin writing code (Jurmann, 2008).

#### **Flow charts.**

Merriam Webster (2011) defines a flow chart as a “diagram that shows the step-by-step progression through a procedure or system especially using connecting lines and a set of conventional symbols” (para. 1). Developers use flow charts to outline how the application will function as you move through the different pages or steps of a feature.

#### **Wireframes.**

Developers use wireframes as a visual guide to show what a web page will look like before it is created (Kyrnin, 2011). Since the development process is similar, many mobile developers also use wireframes to outline the layout of their applications. Wireframes can be simple or complex, and consist of a drawing with “boxes and lines to represent pictures and text” (Kyrnin, 2011, para. 2).

## **Conclusion**

Meetings and conferences impact our lives whether we realize it or not. They are important to our economy because of their fiscal impact, and because they are educating our

workforce. The reasons people attend conferences are many. Professional development, networking with peers, professional certification, and the list goes on and on.

Technology is an important component of meetings and conferences. Attendees use technology to learn about and register for conferences, they use it to manage their time while at the event, and they use it to make connections and share ideas and information. The next chapter will provide a summary description of the features of the mobile conference application to be developed, and will include the flow charts and wireframes that will be sent to the application developer.

## **PART THREE**

### **Introduction**

The purpose of this study is to develop specifications for a mobile application for meeting and conference attendees. Software developers use flow charts and wireframes to outline and detail the specifications of software before they begin writing the actual code that will eventually become the program.

Due to the confidentiality of the subject matter, the author has removed the flow charts, wireframes, and appendix B.

### **Conclusion**

For the last 25 years, technology has played an important role in how we communicate and conduct business (Ball, 2005). Technology has helped conference attendees meet and exchange ideas and information more effectively. Emerging technology, such as mobile applications, make the exchange of ideas and information even more efficient. As more and more people adopt this new technology, the use and number of mobile applications will continue to rise.

There are many benefits to be realized by the use of Mobile Technology. Mobile technology makes time management and navigating the conference easier for the attendee. It can also extend the life of the event. Attendees can access content on their device for as long as the organizer decides to leave the application active. It also helps to reduce impact on the environment by providing information to attendees electronically, rather than in printed form.

## **Limitations of the Study**

### **Limitations of the Study**

A major limitation is that technology changes so quickly. Just a few years ago we were using our phones to just talk and text. Now we are using them as hand-held computers. Not only does the technology change, the devices we use to access this technology changes quickly. Some people do not keep up with current technology. It also gets to be expensive to keep up with it. By the time a new product comes to market, it is already outdated.

The research for this paper came from secondary sources. The features to include had to be determined based on what other developers are currently offering in their applications. Surveying conference attendees to determine what features that they feel are most useful would have resulted in a much better list of features for the application. A developer may create a great application, but if it doesn't meet the needs of the end user, it won't be used by anyone.

## APPENDIX A

### Tables

Table 1

*Comparison of Mobile Application Features*

Company Name	Conference Agenda/Schedule	Venue Maps	Attendee/Speaker Lists	Social Media Integration	Lead Retrieval/Exchange	Alerts/Messages	Surveys/Polling	Exhibit Guide	Other
Quick Mobile <sup>a</sup>	x		x	x		x	x		x
EventKaddy <sup>b</sup>	x	x				x	x	x	x
Event Pilot <sup>c</sup>	x	x		x	x	x	x	x	x
Follow-Me <sup>d</sup>	x	x	x	x		x		x	x
Connect Mobile <sup>e</sup>	x	x		x			x	x	x

Note. Sources:

<sup>a</sup> Quickmobile solutions. (2011). Retrieved March 26, from [www.quickmobile.com/website/solutions](http://www.quickmobile.com/website/solutions)

<sup>b</sup> EventKaddy: Features and benefits. (2010). Retrieved March 26, 2011, from [www.eventkaddy.com/features.html](http://www.eventkaddy.com/features.html)

<sup>c</sup> EventPilot editions & features. (2011). Retrieved March 26, from <http://ativsoftware.com/products/eventpilot/eventpilot-features.html>

<sup>d</sup> Follow me - attendee. (2011). Retrieved March 26, from [www.core-apps.com/Follow\\_Me\\_-\\_Attendee.html](http://www.core-apps.com/Follow_Me_-_Attendee.html)

<sup>e</sup> Connect mobile. (2010). Retrieved March 26, 2011, from <http://alliancetechnology.com/products/intelligent-connect-mobile.html>

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