Salzburg *Handy* Tour

Design, Development and Evaluation of a Salzburg Mobile Phone Tour Simulation

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Abstract

Interpretive information is a key component to positive visitor experiences for organizations in the tourism industry. One of the fastest growing devices for delivering interpretive information is the mobile phone, through the use of mobile phone audio tours. Mobile phone audio tours have become quite prevalent in the United States and are slowly entering into the European market. With the decrease in costs of mobile phones and its services it is now more feasible than ever for international travelers in Europe to experience mobile phone tours abroad. The purpose of this study was to design, develop, and evaluate a mobile phone tour simulation of selected sites in Salzburg, Austria, for English speakers whose primary residence was not in Europe and who were 18 years old or older. Participants took an online survey constituting of 14 questions and an online simulation of a mobile phone tour. In addition, a panel of businesspeople from the Salzburg area was asked to evaluate a sponsorship business model for mobile phone tours in Europe.

The results of this study showed that the participants liked the mobile phone tour simulation. However, they preferred tour guides and other similar methods of interpretive information to the mobile phone tour. Yet, participants considered it a good alternative if it cost less than the other methods. In addition, the panel of businesspeople thought that the businesses in Austria would be interested in supporting a sponsorship business model. In the end the study indicates that cost related issues for the visitor remains the main barrier to wider adoption.

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Introduction

One of the most important components for a museum, park, zoo, tourism office or other such organization in providing a meaningful experience to its visitors is interpretative information. Samis (2007) explained in his article "Visual Velcro: Hooking the Visitor" that the goal of interpretative information is to:

> … give cognitive hooks to the hookless, and assure that these hooks are sufficiently varied so that they can successfully land in the mental fabric of a broad array of visitors. Once visitors have a framework, all kinds of sensory impressions, emotions and reflections can weave themselves into the fabric of perception. In fact, the more you know about a subject, the more you can learn about it. (para. 11)

It is the interpretive information that brings understanding to the objects, architecture, culture, etc. around the visitor. It gives visitors a knowledge base from which they can then learn even more about objects surrounding them, thus enhancing their experience. Interpretative information can be provided to visitors through many different mediums: books, information sheet, labels, guided tours, audio tours, etc. The mobile phone (*handy* in German) is an emerging technology that holds promise as an interpretive tool.

One of the fastest growing mediums for providing interpretative information is the mobile phone tour. A mobile phone tour (also referred to as a mobile tour, cell phone guide, cell phone tour, or *handy* tour) is a tour where users are able to use their own mobile phone to listen to audio information. The technology required to experience a mobile phone tour is any working mobile phone. The user does not need to have a phone with special features such as GPS technology or Bluetooth in order to have this experience. A mobile phone tour hosting company provides the technological infrastructure for the tour. Depending on the hosting company, an organization will develop a tour on their own or work with the hosting company to develop the tour. Once the tour has been developed and uploaded onto the hosting company's system the organization is provided with a phone number and a series of prompt numbers. They can distribute these numbers to the visitor via brochures with maps or signs at the various locations. The visitor will use their phone to dial the number and listen to the opening statement. The user will then proceed by entering a prompt number followed by the pound key. This will prompt the system to play an audio clip. When the audio clip is complete, the user will then be asked to make another selection or hang up.

Mobile phone tours have become widely available in the U.S. and have been used for many different types of applications. According to Thomas Dunne, president of OnCell

Systems a mobile phone tour hosting company in the U.S., there are approximately 1,000 mobile phone tours in North America, and he expects that number to double in the next year (T. Dunne, personal communication, March 27, 2009). One example of where and how mobile phone tours are being used in the U.S. is The San Francisco Museum of Modern Art, which has used the mobile phone tour as part of many of their exhibitions (San Francisco, 2009) and for research purposes (Proctor, 2007). Mobile phone tours are also being used by The Beth Sholom Synagogue in Elkins Park, PA, to provide brief narratives to its visitors (Watkins, 2009). The U.S. National Park Service uses cell phone tours in places like the Grand Canyon where free mobile phone audio segments are available as visitors travel the rim ("Grand Canyon", 2009). Cornell University and Brigham Young University incorporate mobile phone tours as part of their art gallery experiences (OnCell Systems, 2009) and Penn State University offers a mobile phone tour about the campus to its visitors (iHear Penn State, 2009).

While there are some mobile phone tours offered in Europe, the practice is not as prevalent as in the United States. Some examples of where and how mobile phone tours have been used in Europe include an art interpretation tour at the Tate Modern museum in London for the Cy Twombly special exhibit (Tate Modern, 2008), heritage tours throughout the U.K. in locations such as The National Trust: Ashridge Estate (Mobitour, n.d.), and point of interest tours (single prompt tours) throughout Germany for locations such as the Augsburg town hall (Tomis, n.d.).

Just like the other mediums used to communicate interpretive information to visitors, such as book and labels, mobile phone tours have distinct advantages and disadvantages. Some of the main advantages of mobile phone audio tours are affordability for the organization, flexibility, and interactivity. These advantages provide opportunities for developing creative, unique, and specialized tours that are not always possible due to the constraints of other mediums. However, one of the main disadvantages of providing a mobile phone tour is visitors must have a working mobile phone with them. Visitors also have to cover the cost of the phone call (number of minutes or price per call). This has not been a significant problem in the United States as many people have an ample number of minutes in their mobile contract, including free nights and weekends, but this has proven to be a problem in Europe. Proctor (2007) relates four reasons that European museums have held back from developing this concept fully: the museum structures (often thick walled and cell phone unfriendly), high number of foreign visitors (thus high roaming fees), European "pay as you

go plans" (unlimited calling is less frequent in the Europe), and traditional bans on cell phones with cameras (para. 2). As phones become ever more pervasive with worldwide plans, affordable rental phones, and the loosening of traditional restrictions, this market is apt to grow. Most European countries' mobile phone systems use the Global System for Mobile communications (GSM) standard. This standard is just starting to be used in the U.S. mobile phone market. The introduction of the GSM standard in the U.S. allows a greater number of Americans to bring with them their phones and plans.

Salzburg, Austria, has been a prime tourist destination for Americans and other international tourists. The city has a thriving tourist industry with museums, a zoo, parks, hiking paths, city tours, and a fortress. In addition to the actual tourism industry in Salzburg, a significant amount of tourism research is being conducted at area institutions such as the Salzburg University of Applied Sciences. Being so centrally located, Austria is often the staging area for new mobile phone applications for the rest of Europe. Therefore the type of visitors, the richness of tourism opportunities, and the importance of Austria to the mobile phone industry make this an excellent environment for studying mobile phone tours.

Companies may well invest more heavily in European mobile audio tours in the future. Investors will need to have a good understanding of the audience in order to make these tours effective. Few studies have been done to understand the preferences of these visitors with regard to audio tours. The profile of the American and other international travelers wanting and able to use this technology is also not widely understood for the European market. The degree to which international travelers may be willing to pay for the tours would also be important to understand. Ideally, data could be collected from English-speaking international travelers experiencing an on-site European audio tour; however, this can be expensive. An alternative would be to gather data based on a simulated audio tour with visuals of a European site. Currently such a simulation has not been created nor have the users of a simulated audio tour been asked to reflect upon their experience.

Relevant Research

Article 1

"Enhancing Cultural Tourism e-Services Through Heritage Interpretation" by Mitshe, Reino, Knox, and Bauernfeind (2008).

This study is not directly related to phone tours but does examine e-tourism services and addresses differences between visitors versus residents. The location of this study is

England and focuses on how e-Services can enhance and engage users in heritage interpretations. The research investigated visitor satisfaction through the use of a 168-question questionnaire set at two museums. The survey results compared differences between residents and tourists. The data would suggest that tourists had stronger preferences in their motivations: to find inspiration, to experience stories, and to see links between the past and our lives today. Residents on the other hand seem to appreciate making comparisons between the museum content and what they knew and experienced. Also, younger visitors (under 40 years) showed a higher satisfaction with interactive exhibits and games. The second part of the research involved a website analysis of interpretive media. One of their conclusions was that e-services "can enhance users experience of their virtual visit by helping them to engage in an interpretative personalized navigation through the exhibit" (p. 427).

Article 2

"When In Roam: Visitor Response To Phone Tour Pilots In The US And Europe" by Proctor (2007).

This study compared two mobile phone tours, one in the United States at the San Francisco Museum of Modern Art (SFMoMA) and one in United Kingdom at the Tate Modern. Their purpose was to examine the key differences between the two continents. Both museums offered interpretive information via mobile phone tours as part of special exhibitions. These museums and exhibitions were selected as they attract similar audiences. Both museums offered 10 stops on the tours, and both museums worked with Antenna Audio to produce the content. The major difference between the two studies was that at SFMoMA there were other forms of interpretive information, including an audio guide and a downloadable mp3 tour. In the case of the SFMoMA survey, the response questions were about that of audio tours in general not just the mobile phone tour.

Some of the major findings included that Tate visitors on average listened to a fewer number of stops than those at SFMoMA. At the Tate, there was a steady drop-off of visitors listening to the tour as they went through the exhibit. They also found that many people at both museums simply did not listen to the tour, as they did not know it was available. A total of 3.6% of visitors to the Tate modern exhibit listened to the mobile phone tour, which was the same at the 3.6% that listened any of the audio tour at SFMoMA. Over 23% of Tate visitors explained that they did not take the mobile phone tour due to a fear of hidden costs and roaming charges. Of those having taken the tour at the Tate, 63.3% said they would take a mobile phone tour of the permanent collection if it were offered. Overall 22.8% of Tate

visitors stated that they would prefer a mobile phone tour to another device, which was much lower than the 52% at SFMoMA. In the end, they concluded that the mobile phone tour encouraged people who would not normally take a tour to do so and those visitors would be more likely to take another tour in the future. They also concluded that there were more concerns from the visitor when it comes to taking a mobile phone tour in Europe.

Problem Statement

The problem of the study was to design, develop, and evaluate a mobile phone tour simulation of selected sites in Salzburg, Austria, for English speakers whose primary residence is not in Europe and who are 18 years old or older.

Significance of the Study

The tourism industry in Europe is very significant to Europe's overall economy. According to the European Tourism Ministers' Conference, tourism is on its way to being one of the world's largest economic activities. In fact, in the year 2005, it was predicted that the travel and tourism industry would generate € 1,705.4 billion (Voithofer, Mandl, Dorr, & Dörflinger, 2006, p. 1). The number of international tourists has been increasing significantly as can be seen by a 4% increase of international travelers to Europe during the year between 2004 and 2005 (Voithofer et al., 2006, p. 6). In 2005, Europe held 54.9% of the market share for international tourists with 445.9 million international arrivals (Voithofer et al., 2006, p. 6). It is estimated that, even long-term, Europe will continue to have the largest number of international travelers, amounting to 717 million international travelers in the year 2020 (Voithofer et al., 2006, p. 7).

In addition to holding the market share for international tourists, Europe also had the highest percentage of mobile phone subscriptions in 2008. According to a Europa Press Release in the year 2008, there was a 119% mobile phone service subscription to population ratio, thus indicating that there are more mobile phone subscriptions than there are people. The United States came in at 87% and Japan at 84% ("Mobile use up", 2009, para. 1). This implies that almost all of the adults in Europe, the United States, and Japan have at least one mobile phone. Just like tourism is a significant industry to the European economy, so is the telecom industry. The same article stated that in the year 2008 revenues from European Union's telecom sector increased 1.3% where the rest of the economy averaged 1% ("Mobile use up", 2009, para. 1).

Since Europe holds the market share of both international tourism and has a strong

telecommunications industry, researching mobile phone tours in Europe is a logical study. While a survey of user acceptance of mobile phone tours has been done in Salzburg by Tomis Mobile Information Services, a German mobile phone tour hosting company, they focused primarily on surveying local German speakers (T. Götz, personal communication, April 24, 2009). Researching the mobile phone tours developed specifically for international visitors has yet to be studied.

Researching the mobile phone market, users, and organizations in Europe is important to the success of mobile phone tours in Europe. Dunne acknowledged that the understanding of all of these components is significant. From his point of view, this information can be used by the hosting company to develop an infrastructure, which would best meet the needs of the European market for both the visitor and organization, thus increasing the overall success (T. Dunne, personal communication, March 27, 2009).

Research Questions

This study will attempt to answer the following questions regarding mobile phone tours in Europe. (Users are people who experienced the simulation and responded to questions.)

1. How likely are users to have a mobile phone for non-emergency use that could be used for a mobile phone tour?
2. What were the users' reactions to the simulated mobile phone tour?
3. Do users have a preference as to the sequencing of tour prompts?
4. What types of venues and themes would users prefer for their tours?
5. What are the users' cost preferences regarding mobile phone tours?
6. How does a group of selected Salzburg area business people react to sponsoring mobile phone tours?

Assumptions

The following assumptions were inherent in the study.

- The audio tour simulation provided an experience that is reasonably close to a true audio tour for purposes of the survey.
- The facts presented in the audio tour were accurate based on the references provided.
- Respondents provided factual information and correctly filled out the survey.

Limitations

The following limitations were inherent in the study.

- The simulation did not use professional voice talent.
- The study used a convenient sample based on requests from Facebook, emails, and twitter. It was therefore limited to people who had Internet access.
- Respondents listened to a minimum of one audio tour prompt but may not have seen all of the prompts.

Methodology

This study used a research and development model (Gall, Borg, & Gall, 2003). In this basic model, an education product is systematically planned, designed, developed, piloted, evaluated, refined, and disseminated. In commercial applications there is an iterative process of improvement and a larger emphasis on product dissemination.

Planning Phase

In the planning phase of developing the tour, the researcher used knowledge based on previous experience from writing a mobile phone tour and researching interpretive information. The researcher also interviewed hosting companies to get information on what factors help make a successful mobile phone tour; as well as, the researcher interviewed a certified Salzburg tour guide.

With all of this information in mind, the researcher came up with criteria for the simulation tour.

- All prompts, audio segments, should have a unifying theme.
- All prompts should be around 1-3 minutes in length.
- The content should be different than what would be on a normal Salzburg tour or found in a typical tour book.
- The users should be able to listen to the prompts in any order desired.
- The prompt locations should be at different locations around the city but not too spread out.

Design Phase

The design phase, of the simulation, had two distinct parts: the audio tour and the survey design.

Audio tour design.

In the design phase of the simulation, an opening prompt, four main prompts, and two supplemental prompts were developed for locations around Salzburg. The prompt menu can be seen in Appendix A. A list of the prompts are as follows with the supplemental prompts indented:

Opening Prompt
Mozart's Residence
    Grave of Mozart's Family
Doppler's House
The Grave of Paracelsus
    Reading of the Inscription
Mohr's House

The four main prompts represented included two well known Salzburg landmarks (the homes of Mozart and Doppler) and two less frequented landmarks (the grave of Paracelsus a famous Physician and the home of Mohr who wrote lyrics to Silent Night). All were within close proximity to each other. In addition, historical information was available in English for these sites. Each prompt was 2-3 minutes in length, and the supplemental prompts were approximately 30 seconds.

Survey design.

The survey is in Appendix B and each of the 14 questions are designated as SQx (for instance Question 1 is labeled SQ1). The survey was designed to first ask the users if they were qualified. Users were asked if they were 18 years old or older (SQ1) and had a primary residence outside Europe (SQ2). If the user did not qualify for the survey, they were directed out of the survey. The survey went on to ask a few descriptive questions (age SQ3, gender SQ4, source of travel resources SQ5) and also about previous experience with phone tours (SQ7). The questions on the survey were designed to provide answers to the research questions below. The questions numbers from the survey are nested next to each of the research questions.

1. How likely are users to have a mobile phone for non-emergency use that could be used for a mobile phone tour? SQ6, SQ12
2. What were the users' reactions to the simulated mobile phone tour? SQ8, SQ9, SQ10
3. Do users have a preference as to the sequencing of tour prompts? SQ11

4. What types of venues and themes would users prefer for their tours? SQ14
5. How does a group of selected Salzburg area business people react to sponsoring mobile phone tours? SQ13

Development Phase

In the development phase, a script was written for each site. The script was then recorded by Justin Hatch and post-processed in Garage Band. The original intent was to have the audio files loaded onto a working mobile audio tour system. This was complicated by three factors. First, hosting was a factor since none of the host-basis-only companies were ready at the moment to provide service with an Austrian number. Second, there was a lack of mobile phones available for testing. Third, recruiting English-speaking tourists in Austria for this study was also problematic.

Therefore, the researcher concluded that a web-based simulation and survey would provide for a better overall study. This solved the issue of not having to have a local phone number or phones available for the users. It was also significantly easier to recruit international English speakers to participate in the study. The researcher developed the simulated tour using Adobe Flash software, which is commonly used to create interactive media environments for the web. This software was chosen as it was able to incorporate audio, photos, animation, and user input, all necessary components for providing the users with a realistic simulation. This online Flash file was used in combination with the survey website, Survey Monkey.

The final process involved sending the script, survey, and directions for participants along with a cover letter to Bowling Green State University's Human Subject Review Board (HSRB). This approval letter is included in Appendix C and was approved on 16 July 2009.

Pilot Phase

Before the tour simulation and survey was launched for the study, a group of 10 users were selected to pilot test the tour and survey. These testers were asked to give comments on issues or problems they experienced with the simulation. They were also asked to provide feedback on the survey itself regarding mistakes or incoherency in the questions. Several changes were made to both the simulation and the survey based on the testers' feedback.

Evaluation Phase

In the evaluation phase a survey was administered with questions related to the users'

experiences of the simulation.

The invitation to be involved in the study was primarily sent via the researcher's Facebook page. The researcher's Facebook page had approximately 600 contacts, and the Facebook pages of two other colleagues' Facebook accounts (with roughly 800 and 400 contacts) also posted the invitation. With some overlap, it is estimated that approximately 1,000 contacts had access to participate in the study. Invitations were also sent out through Twitter and email.

The study asked participants to complete preliminary questions 1-7, then listen to at least one full prompt in the simulation. The survey questions 8-14 were completed after the simulation. Screenshots of the simulation are located in Appendix D (figures D1-D10), and the audio script is located in Appendix A.

Post Evaluation Phase

The study also made use of an expert panel to help respond to the last research question [How do a group of selected Salzburg area business people (expert panel) react to sponsoring mobile tours?]. The panel consisted of four businesspeople. The first businessperson had a catering business whose primary customers are locals. The second businessperson had a restaurant whose primary customers are tourists. The third businessperson provided tours whose primary customers were a combination of locals and tourists. The fourth businessperson provided tours for traveling choirs and music groups whose primary customers were tourists. The results of this post evaluation are in the findings section.

Dissemination Phase

This document represents the primary way of disseminating this research. Also publication of the result and a presentation of the study at a conference are anticipated.

Findings

This section is organized around the six research questions. The simulation ran for fifteen days from the 15th of September 2009 to the 29th of September 2009.

The survey collected a total of 51 participants; however, 4 did not qualify due to being primary residents of Europe and 7 participants started but did not complete the survey by answering all of the required questions (1 quit the survey during the qualifying questions and 6 more did not return to answer the second set of questions after having gone on the tour

simulation). In the end, there were 40 participants who fully completed all required questions on the survey.

Out of the 40 participants who completed the survey fully, 9 were males and 31 were females. The youngest participant was 19 years old and the oldest participant was 67, thus having an age range of 48 years. The mean age of the 40 participants was 38.05 years old, with a median of 29.5 years old, and mode of 23 years old. Two of the participants had taken a mobile phone tour before participating in the survey, while the other 38 had not.

Research Question 1

How likely are users to have a mobile phone for non-emergency use that could be used for a mobile phone tour? SQ6, SQ12

Survey question 6 asked the users prior to having taken the simulation what was the likelihood that they would have a mobile phone available for non-emergency use. Just over 30% of the 46 respondents said that they would absolutely or probably have a mobile phone. An additional 26.1% reported that they might have one. Another 39.1% stated that there was only had a slight chance they would have a mobile phone available. Leaving just under 5% of users stating that they absolutely would not have a mobile phone. N = 46. Results are displayed in Figure E1.

Insert Figure E1 Here

Figure E1: Likely hood of participants to travel with a mobile phone in Europe, prior to taking the mobile phone simulation.

Survey question 12 was taken after participating in the simulation. Over 67% of the respondents said that the availability of the mobile phone tours in Europe would be at least somewhat likely to very likely to influence their decision to rent or own a mobile phone for European travels. N = 40. Results are displayed in Figure E2.

Insert Figure E2 Here

Figure E2: The influence of mobile phone tours on the participants' decisions to travel with a mobile phone in Europe.

Research Question 2

What were the users' reactions to the simulated mobile phone tour? SQ8, SQ9, SQ10

Survey questions 8 showed that 80% of the respondents reported that they had a good or excellent impression of the sample tour. N = 40. Results are displayed in Figure E3.

Insert Figure E3 Here

Figure E3: Participants' impressions of the mobile phone tour simulation.

Survey question 9 showed that over 87% of respondents stated that this simulation had piqued their interest. N = 40. Results are displayed in Figure E4.

Insert Figure E4 Here

Figure E4: Participants' piqued interest in mobile phone tours due to simulation.

Survey question 10 was not a direct reflection on the simulated tour but indirectly influenced the users' answers by taking their reaction of the tour into account when thinking of concerns they would have if this were a real tour and not a simulation. A total of 55% of the respondents did not have concerns about taking a mobile phone tour. However 45% did have concerns. N = 40. Results are displayed in Figure E5.

Insert Figure E5 Here

Figure E5: Percentage of participants with concerns related to mobile phone tours.

This question allowed for comments regarding concerns about taking a mobile phone tour. Eighteen users had concerns and reported reasons. The most frequently occurring concern, mentioned by thirteen users, related to the costs associated with per minute usage, roaming fees, and tour charges. Three people had concerns about the sound quality, and two people had concerns about the battery life of the phone. The other concerns which were mentioned included: that it was hard to do with groups, worried about accuracy of information, the feasibility of having a phone abroad, the cumbersomeness of holding the phone, not having the ability to rewind, and the lack of interaction with a person such as a tour guide.

Research Question 3

Do users have a preference as to the sequencing of tour prompts? SQ11

Survey question 11 showed that 50% of users preferred mobile phone tours where they were able to select and listen to the tour prompts in any order they wish. The other 50% was divided evenly with 25% responding that they preferred tours that guided them through a specified sequence of prompts and 25% reporting that they did not have strong feelings in either direction. N = 40. Results are displayed in Figure E6.

Insert Figure E6 Here

Figure E6: Participants' preferences for sequencing of mobile phone tours.

Research Question 4

What types of venues and themes would users prefer for their tours? SQ14

Survey question 14 showed that the respondents' top results for tour venues and themes listed in order included city walking tours at 87.2%, indoor museum tours and architectural tours at 74.4%, historical yours at 69.2%, and outdoor museum tours at 64.1%. N = 39. Results are displayed in Figure E7.

Insert Figure E7 Here

Figure E7: Participants' preferences for types and venues of mobile phone tours.

Research Question 5

What are the users' cost preferences regarding mobile phone tours? SQ13

Survey question 13 showed that 82.5% of users would take a mobile phone tour in Europe if it was offered for free without advertisements. This was followed by 77.5% who would take the tour if it were under $5 U.S. and 60% who would take the tour if it were free with advertisements. Slightly over 52% stated that they would take a mobile phone tour if it were less expensive than other tour options. Fifteen percent of participants said that they would take a mobile phone tour if it were the same price as other options and 2.5% said they would be willing to take a mobile phone tour even if it were more expensive that other tour options. N = 40. Results are displayed in Figure E8.

Insert Figure E8 Here

Figure E8: Participants' cost preferences for European mobile phone tours.

Research Question 6

How does a group of selected Salzburg area business people react to sponsoring mobile phone tours?

When the panel was asked if advertising on a mobile phone tour would benefit their

business, three reported that it would not and the one businessperson who had a restaurant and primarily served tourists reported that it would. All four members of the panel thought that other local businesses would be interested in the concept of advertising on a mobile phone tour.

When asked the question, "What is the largest amount that you would be willing to pay to advertise on the tour?", one panel member, who thought that this would benefit the business, said 20 € per month. Another panel member noted that, while his business would not be interested, 20 € per month was a competitive price compared to other advertising mediums. The last two respondents said that they would not be interested.

When asked, "Would you prefer your advertisement to be at the beginning of an audio tour prompt that is listened to by more visitors or an audio tour prompt located near your business?", two of the panel members selected the tour stop that is listened to by more visitors and two of the panel members selected the tour stop that is located near their businesses.

When the panel was asked if they would prefer to pay a flat rate per month or an adjustable rate based on the number of listeners listening to the stops that they sponsor, two of the panel members selected that it be based on the number of listeners. The other two selected a combination of both. One panel member said that for the first year he would want it to be based on the number of listeners and then a flat rate for the second year. The other panel member said that he would want it to be based on the number of listeners but then have a price cap of how much he could be charged.

When asked, "How long would you be willing to commit to sponsoring a tour prompt at 25 € per month?", the panel member who said he would personally sponsor the tour said that he would commit for 1-2 years. Another panel member said, while he would not commit to sponsoring a tour, he thinks most businesses that would be interested would select 6 months to a year. The other two panel members said that they would not commit to sponsoring a stop.

Conclusions

Audio tours are becoming more numerous wherever tourists are found. In the past, most of the interpretive audio tours have had to rely on audio-guide devices owned or rented by museums or centers. Today, cell phones are approaching a saturation level where the majority of people carry a phone. In the U.S., this has allowed organizations to shift away from audio-guide devices and shift towards using a visitor-owned mobile phone as the

delivery platform. This is offering tourists new venues and even new ways of using audio tours.

Studies of European audio tours have been conducted. Yet, developing audio tours for English-speaking foreign tourists in Europe requires additional study. This study found that users of the simulation tour liked the concept of an audio tour and most users thought that it would be an attractive alternative to other interpretive experiences if made affordable.

Cost remains the most critical barrier to full acceptance. Cost emerged as a significant theme across the entire study. Therefore, in addition to drawing conclusions regarding the six research questions at hand, cost is examined in more depth separately with a discussion addressing the following three issues: cost per minute, roaming fees, and profit concerns.

Research Question 1

How likely are users to have a mobile phone for non-emergency use that could be used for a mobile phone tour? SQ6, SQ12

The results of the study showed that very few of the users stated directly that they would (10.9%) or would not (4.3 %) travel with a mobile phone in Europe. Almost 40% stated there was only a slight chance that they may travel with a mobile phone compared to the nearly 20% which stated they probably would have one. These numbers could indicate that the users perceive having a mobile phone in Europe as costing too much, difficult to obtain, or unnecessary. When the users were given opportunities to make comments, numerous users indicated that high roaming fees remain an issue and one participant mentioned specifically that the feasibility of having a phone in Europe was an issue. When given the opportunity later in the survey to say if the availability of mobile phone tours would encourage their decision to have a phone, approximately 67% said that it would at least somewhat likely encourage them to have a mobile phone, with just over 7% saying that it would greatly encourage them. Thus, this could indicate that previously some of the users did not see mobile phones as a necessity but when given the option of mobile phone tours they had greater reason to travel with mobile phones.

More mobile phones in the U.S. are adapting the European GSM standard that may make it easier in the future for Americans and others to visit Europe and use their personal phone. In addition, the phenomenon of tourists renting or purchasing inexpensive GSM phones for their travel is becoming more common. In a rapidly changing communications environment, the users of the survey may not have been aware of these changes.

Research Question 2

What were the users' reactions to the simulated mobile phone tour? SQ8, SQ9, SQ10

Overall, the users were pleased with the mobile phone tour simulation. A total of 80% of the users said that the tour was good or excellent and over 87% stated that the experience piqued their interest in using a mobile phone throughout Europe. From this it could be assumed that not only did the majority of users enjoy their experience, it did influence their thinking about using mobile phones and taking mobile phone tours throughout Europe.

When users were asked if they had concerns regarding mobile phone tours, 55% reported that they did not; however, a significant 44% of users did have concerns. The majority of the concerns involved the cost, including the cost per minute and the cost of the tour, both of which are covered in-depth later in the report. Other concerns that were mentioned included sound quality problems, particularly in busy areas, and phone battery issues. While these are important issues, the same issues have not shown to be a hindrance to the success of mobile phone tours in the U.S., but perhaps more consideration should be given to these issues in regards to travelers to Europe as the cost of these tours will most likely be greater for the user.

Research Question 3

Do users have a preference as to the sequencing of tour prompts? SQ11

The results of the survey showed that 50% of users preferred a non-linear tour where the prompts do not have a specified sequence and can be taken in any order the user chooses. An additional 25% did not have a preference and 25% wanted a linear tour where prompts went in a specific sequence with information building upon previous prompts. In the end, the majority of users would be most satisfied if the tour was non-linear.

Research Question 4

What types of venues and themes would users prefer for their tours? SQ14

In the end, the survey showed that users were interested in a wide variety of mobile phone tours for their European travels; however, there were some locations which appealed to a greater number of people including: city walking tours, indoor museum tours, architectural tours, historical tours, and outdoor museum tours. Organizations, which can provide these types of tours, may find the most amount of success in regards to reaching the greatest number of tourists. As initial European mobile phone tours for international tourists are developed, these may be the ideal types of tours to pilot.

Research Question 5

What are the users' cost preferences regarding mobile phone tours? SQ13

The cost of charging visitors for the phone tour is something to strongly consider. This study indicated that most of the people willing to take the tour would be willing to pay a small fee of less than $5 U.S., which was a slightly smaller percentage than those who would take the tour if it were free. Around half said that they would be willing to pay for the tour if it were less expensive than other tour options. However, the numbers significantly drop if the price of the mobile phone tour is the same as other tour options and only one respondent said that he would take the tour if it were more expensive than other tour options. This survey indicates that a mobile phone tour would be considered inferior to other tour options but a good economic alternative if the price were right. For a mobile phone tour to be successful, the organization needs to be aware of how much they are charging for the mobile phone tour compared to the cost of alternatives.

An additional consideration when it comes to the price of the tour is how the user is charged for the tour. This could be done by several different methods: using a credit card transaction over the phone, using a premium number which places the charge on your phone bill, or purchasing a scratch off card from the organization containing an access number. There is a chance that international travelers would have to pay a currency exchange fee for the credit card or premium number transactions, which add to the cost of the tour. The sale of scratch off cards with an access number may be an option attractive to the traveler that wants to avoid a fee for that single transaction (T. Dunne, personal communication, March 27, 2009). The payment method is something that should be studied further if organizations choose to charge a fee for their mobile phone tours.

Research Question 6

How does a group of selected Salzburg area business people react to sponsoring mobile phone tours?

All of the business people on panel of experts agreed that local business owners in Austria would be interested in advertising on mobile phone tours. They thought that a rate of around 20 € per month would be a competitive price compared to other advertising methods and would either prefer the rate per month to be based on the number of users calling into the prompt, or a combination of that with a flat rate. The panel agreed that the primary reason for sponsoring a tour stop would be to increase their business. While it was thought that businesses would be willing to commit to sponsoring a tour for 6 months – 2 years, it is

indicated that most businesses would want to see an increase in business due to the tour advertisements if they were to continue their sponsorships beyond their initial commitments. This could prove to be a problem as it can take up to 2 or 3 years of a tour being available to see significant number of users actually dialing in (T. Dunne, personal communication, March 27, 2009) (T. Götz, personal communication, April 24, 2009). One should also take into consideration that a larger number of users responded that they would rather pay for the tour than to listen to advertisements on the tour. So while this business model might be feasible for the Austrian market, it may not be the best model to use.

Cost Related Issues

Cost per minute.

The cost per minute charge of using mobile phones abroad was a concern of the users in the study. Oftentimes American mobile phone companies offer unlimited calling during nights and weekends, thus limiting the visitors' concern for the cost of minutes used in the U.S.; however, this is a barrier that will still have to be addressed in Europe. In the survey 17.5% of the users mentioned that they would rather pay $5 U.S. or less for the mobile phone tour than to listen to advertisements at the beginning of each prompt. One reason for this response could be that users assume the extra minutes that the advertisements would take up could cost more than $5 U.S.

Roaming fees.

Roaming fees can also be a complex issue. One concern raised by a significant number of users who participated in the study was the high cost of roaming fees. While it is possible for users to have international roaming plans, where the service is provided by the users' primary provider from their home countries, this can be quite expensive at the present time. However, mobile phone service costs are decreasing, and therefore this will likely make audio tours more attractive in the future.

One alternative to using one's own mobile phone service provider would be to use a local SIM card with an unlocked GSM phone, which can be rented, bought, or borrowed rather inexpensively compared to the current international roaming plans. This will be the least expensive per minute option for tourists, even though it could be a larger upfront cost. Yet, with this method, users will either have to purchase a new SIM card for each country they visit in Europe or pay European roaming charges. The option of paying roaming fees if you have a European SIM card is becoming more affordable as the European Union is

continuing to regulate these costs ("Europa", 2008).

Regardless, the cost of roaming fees will be a barrier for international travelers choosing to use mobile phone tours in Europe. However, while it is a barrier, it did not appear to stop most of the users in the study from considering taking a mobile phone tour in Europe.

Profit issues.

How to pay for tours is also directly related to cost. For museums, device rentals can be either an expense or a source of revenue. However, from this study it could be assumed that mobile phone tours also have the possibility of being either an expense or a source of revenue. From the information given by the panel of experts, it is a possibility that, in Austria, businesses would be willing to advertise on the mobile phone tours to bring in a profit for the organization. In addition, the survey indicated that people would be willing to pay a small fee, up to $5 U.S., to take a mobile phone tour. Both of these could end up serving as a source of revenue for the organization.

To some extent, mobile phone tours may displace tour guides who currently earn their living by giving tours. Not surprisingly, a high number of users prefer human guides to mobile phone audio tours if both cost the same. Still, half would pick mobile phone tours over a guided tour if the mobile phone tours cost less. Referring back to the Visual Velcro article on interpretive information, it stated that the more someone knows about a subject the more they can learn about it (Samis, 2007). This could mean that by experiencing a mobile phone tour first with just basic information, the visitor may then turn to a tour guide to learn more and will have an even better experience because they will have had previous knowledge. Whether or not mobile phone tours become a potential conflict for tour guides is uncertain. It may be that applications of phone tours will actually enhance tourists' understanding of culture and create a new demand for jobs for career tour guides.

Summary

Mobile phone tours are certainly a growing phenomenon, and with lowering costs and the potential for profits, this medium is being embraced by the tourist and organizations alike. Almost all of the users (n=38, over 95%) had never experienced an audio tour. After viewing the simulation they had a very clear, positive response. Users clearly enjoyed the simulation and indicated they would now consider mobile audio tours. While the users had positive reactions towards mobile phone audio tours, the cost issues related to using mobile phones

abroad raised questions for many of them.

Recommendations for Further Study

This study found that users were quite receptive to the overall concept of using mobile phone tours, but there were several barriers to overcome, particularly those involving cost. As further research is done it would be wise to study a larger sample. As part of this larger study, various demographic groups could be studied in regards to their preferences of mobile phone tours. One major key to success of mobile phone tours is the marketing aspect. Therefore, an in-depth study of how users, who are typically interested in mobile phone tours, receive travel information both prior to traveling to Europe and once in Europe is recommended.

In addition to studying a larger sample, it would also be important to develop a deeper understanding of actual mobile phone usage by international visitors traveling throughout Europe. It would be good to know the actual percentage of visitors that are traveling with mobile phones, how much they are paying, and what methods of obtaining mobile service they are choosing.

The simulation tour developed for this study could easily be transferred into an actual working phone tour in Salzburg. To expand on the tour, it would make sense to partner with an existing local organization, which has a need to deliver interpretive information to its visitors. For example one could collaborate with a tourism board, which offers city passes, such as the Salzburg Card, as a way to give travelers an idea of what they will experience when they visit the locations. One important aspect to consider would be how this tour would positively or negatively affect the local economy.

The possibility of using a virtual environment to create a high-fidelity simulation test bed for mobile audio tours is now feasible. Emerging technologies such as Second Life or Google Earth could allow the users to see streets and buildings but still use a cell phone to make the audio calls. It certainly would lower barriers to getting participants, as they would not need to travel. The curiosity and novelty of using virtual worlds would undoubtedly change the ability to recruit participants and open new ways for the research to visually track how users are experiencing the tour.

Research could also be developed to determine if simulation tours could actually inform the visitor as a pre-tour educational experience. Flight simulators allow pilots to practice landings throughout the world. It does not keep them from flying to these places; in fact, it often prepares them for what to expect. A high impact simulator of a historic area may

make participants much more determined to see the actual site and local artifacts. They might come prepared for a rich experience that might not have been possible without the study. For instance, people visiting Salzburg may only have one or two days to visit. By completing a pre-visit, via a simulated mobile phone tour, they will have an opportunity to inform themselves of the city and its offerings allowing them to best use their time in Salzburg leading to a greater overall satisfaction.

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Appendix A: Tour Script

Explanation of Content

This document contains the tour script along with the references used. The following is the menu for the script:

0 # Opening

10 # Mozart's Residence

    11 # Grave of Mozart's family

20 # Doppler's House

30 # The Grave of Paracelsus

    31 # Reading of the Inscription

40 # Mohr's House

The *n* # is used to represent the number that the user would have to press, after having called in to the system, in order to select a prompt. The prompt "0 # Opening" will automatically play when a user dials into the system but is not repeated between prompts.

References for each tour prompt will be found on the page after each of the prompts. In regards to the in text citations the [n] following a sentence or a statement will denote the reference that was used to obtain the information. For example:

> "Mozart was born on the 27th of January 1756 at Getreidegasse number nine to Anna Maria and Leopold Mozart.[**2**]"

In this example the [2] indicates that the work used to obtain this information was the 2nd work listed on the reference on the list:

> **2**. Mozart's Birthplace. (2009). *salzburg.info*. Retrieved October 10, 2009, from http://www.salzburg.info/en/sights/museums/mozarts_birthplace.htm.

If a book was used for multiple citations with different page numbers, [*n.x*] is used. The *n* refers to the work in the references as it did before. However, directly after the work *n* in the references, is a list with *n.x* and the corresponding page numbers. For example:

> "He was buried somewhere in Vienna in a common grave, which is unknown.[**6.2**],,

This example correlates to the 6th work listed in the references and the information was found on page 495 of the book as can be seen below:

6. Solomon, M. (1995). *Mozart: A Life*. New York: HarperCollins Publishers.

6.1 p. 432 – 491

6.2 p. 495

6.3 p. 501

This system was used so that the script could be read fluidly and not broken up by the citations.

0 # Opening

Hello and welcome to a sample mobile phone audio tour for Salzburg. This is Katie Hatch and I want to thank you for participating in my research. I hope that you enjoy listening to the prompts and find the information interesting. Feel free to listen to as many prompts as you would like and listen to them in any order you wish. To navigate between prompts simply select the prompt from the menu, which you will soon see.

When you are finished listening to the tour prompts please make sure to go the next page of the survey to answer and submit some follow-up questions. Thank you again for your participation. Please make your first selection now.

10 # Mozart's Residence

Wolfgang Amadeus Mozart is Salzburg's pride and joy. You can see evidence of this wherever you go in the city. You will find a statue of him in the middle of the Mozart Plotz; a music school bearing his name; a playground dedicated his opera "The Magic Flute"; and yummy confectioneries adorned with his face. The house you are currently looking at is where Mozart resided for approximately nine years from 1773 to 1781.[8] You will hear more about the house later, but first let me tell you a bit more about Mozart.

Mozart was born on the 27th of January 1756 at Getreidegasse number nine to Anna Maria and Leopold Mozart.[2] Mozart's father Leopold was a Salzburg's Royal Chamber musician. Wolfgang was the seventh child of Maria and Leopold but he and his older sister Nannerl were the only ones to survive past birth.[8] It was when Nannerl was seven that Leopold started to give her lessons on the harpsichord. Wanting to be like his sister, Wolfgang started lessons at the same time, being a mere thee years old.[7]

Wolfgang went on to create his own compositions by the age of 5.[5] With 2 children extremely talented in music, Leopold neglected his own career in order to dedicate his time to teaching Wolfgang and Nannerl and to tour them around Europe.[8]

When they arrived back in Salzburg after several tours, they moved into the house you are currently looking at.[8] The house was bombed in WWII which destroyed approximately half of the residence. It was eventually rebuilt and restored to its former glory and reopened in 1996.[3] It was while living at this house that Mozart took the job as the court musician in Salzburg under Salzburg's Price-Archbishop Heronymus Colloredo. Mozart and the Prince-Archbishop began to dispute, which lasted until Mozart could not take it anymore.[4.1] He decided to move to Vienna where he got married to Constanze Webber.[4.2]

Life in Vienna was anything but easy. While many of his best compositions were written during this time due to unfortunate circumstances including illness and the fact that Austria was at war, Mozart's life and carrier significantly suffered.[6.1]

Mozart then passed away on the fifth of December 1791.[8] He was buried somewhere in Vienna in a common grave, which is unknown.[6.2] While you cannot visit Mozart's grave, you can visit the grave of his father and wife in the St. Sebastian Cemetery, the same cemetery as the Paracelsus Stop. To learn more about Mozart you are able to visit the museums in both the residence you are looking at and his birth place on the Getreidegasse.

11 # Grave of Mozart's family

Here you will find the graves of Mozart's father Leopold Mozart; Mozart's wife Constanze Nissen; Mozart's grandmother Eva Rosina Pertl; and Mozart's niece Johanna Maria Anna Elisabeth von Berchtold zu Sonnenburg.[1] You will also see the grave of Genoveva Weber, the aunt of Constanze and Georg Nikolaus Nissen, Constanze's second husband.[1] While the grave of Mozart's sister is located in Salzburg, it is not located here with her family but rather at the famous St. Peter's Cemetery in the Old City.[6.3]

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20 # Doppler's House

Welcome to the home of Christian Doppler. You might be most familiar with the works of Christian Doppler from the morning weather report or a radar gun used by the police to see how fast you are driving. These technologies are based off of the theory Doppler developed, which you may know as the "Doppler Effect". Christian Doppler was born in Salzburg to a stonemason in 1803.[1] In fact, the house you are standing in front of was built by Doppler's father.[2] Doppler himself was rather sick as a child and was unable to carry on the family profession so he went on to pursue higher education.[2]

He entered the Polytechnic School in Vienna at age nineteen to study anatomy and mathematics. Doppler graduated at the age of twenty-one and returned to back here to Salzburg to teach mathematics and physics.[1] When that teaching job ended he had a lot of trouble finding new employment. He was about to move to the United States in hope of finding a job there, but at the last moment received an offer to teach basic mathematics at a university in Prague.[1] The demands of this new teaching position were long and strenuous, and later believed to have caused Doppler to contract tuberculosis. He found himself ill for years at a time throughout his life.[1] Yet, his illness did not hold him back from making large contributions to society. In 1842 Doppler presented his most famous work entitled "On the colored light of doubled stars and certain other stars of the heaven". This work contained the theory, which is the basis for the Doppler Effect.[1] In the work, Doppler stated that this theory would have a great impact on Science in the not-too- distant future. However, it took nearly 100 years for this theory to be brought into practice and used for cosmology, meteorology, and medicine.[2]

Doppler became rather ill again and upon his recovery he took a position in Slovakia, however; due to political unrest, Doppler moved back to Vienna. There he worked for the Royal Imperial University of Vienna. On the 17th of March 1853 Johann Doppler died of Tuberculosis in Venice, Italy just shy of turning fifty years old. He was buried in Venice as he was given a "grave of honour" by the city.[1]

If you are interested in learning more about Doppler and his scientific discoveries you should visit the Doppler exhibit at the Natural History Museum located in the old city of Salzburg.

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30 # The Grave of Paracelsus

Congratulations, you were able to find the St. Sebastian Cemetery. As you may know, this can be a bit difficult as it is tucked away in the streets of Salzburg. The tomb you are standing in front of is that of Philippus Aureolus Theophrastus Bombastus von Hohenheim also known as Paracelsus. You may have learned about him in your history books or know him from the popular book series Harry Potter. Paracelsus is known for great contributions to science and medicine. He was a man ahead of his time, as he did not accept many of the medical practices of his day such as bloodletting.[6] Paracelsus was known for thinking highly of himself, which can be seen by the fact he gave himself the nickname Paracelsus. This name means equal to or grater than Celsus.[4] Aulus Cornelius Celsus was a first century Roman and was well known for his contributions for medicine.[1] Paracelsus was born approximately 1500 years after Celsus, in Switzerland in 1493.[3.1]

Paracelsus grew up as a son of a physician.[4] He was a bright child who studied medicine at the age of 16 eventually earning a PhD in medicine.[5] Due to unfortunate circumstances he was forced to wander around much of Europe.[3] He eventually landed in Italy where he served as an army surgeon and began to develop many of his cures. At age 32 he was given a prestigious position at the University of Basal in Germany where he first studied. Here he performed many lectures, which granted him the title “the Luther of Physicians”.[2] His fellow colleagues became frustrated with his teachings as they undermined their teachings and the common practices of the day. Paracelsus lost his job and was once again forced to wander.[3.2] It was during this time Paracelsus published the book Die grosse Wundartznei meaning “Greater Surgery”.[8.1]

Eventually he was invited by the Prince Palatine to come and live in Salzburg. Paracelsus accepted the invitation and move here to Salzburg.[2] However, only one year later he fell ill and passed away.[8.2] Paracelsus’s motto in life was “alterius non sit qui suus esse potest”, which means: “let no man be a slave of another who can be his own master”.[7] While Paracelsus’s life was not without troubles nor his discoveries perfect, he continued to think for himself and search for answers which eventually had extraordinary impact on modern medicine and scientific practice.

31 # Reading of the Inscription

Here are the effigy and the bones of Philippus Theophrastus Paracelsus, who has won such fame in all the world through his alchemy; until they are again clad in flesh.

When this Church was repaired in 1752 they were lifted from their mouldering grave and interred at this spot.

Here lies Philippus Theophrastus, Doctor of Medicine of great renown, whose are most wonderfully healed even the most terrible wounds, leprosy, podagra, dropsy, and other seemingly incurable diseases; and who honored himself by having all his possessions distributed among the poor. He passed from life to death on September 24 in the year 1541.

[The translation for the inscription was provided by the St. Sebastian cemetery, on a sign next to the grave.]

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    8.2 p. 59-60

40 # Mohr's House

You are presently standing in front of Steingasse number 31, the childhood home of Joseph Mohr.[1] There is a chance that you do not know who Joseph Mohr is; however, it is quite likely you are very familiar with his song lyrics. There is even a chance you have them memorized. Joseph Mohr wrote the lyrics to the beloved Christmas Carol "Silent Night".[2] The song "Silent Night" has had a huge impact all over the world as it has been translated into approximately 300 languages,[4.1] yet most people don't know anything about it, who wrote it, or where is came from.

Joseph Mohr was born on the 11th of December 1792. Mohr was an illegitimate child as his parents were never married and his father abandoned him and his mother.[1] Being an illegitimate child during this time typically meant a life with fewer opportunities and more restrictions. As an act of charity Mohr became the Godson of the city executioner. While the executioner did not play an active role in Mohr's life beyond supporting him financially, this did allow Mohr to be able to pursue an education, which otherwise he would have been prevented from doing.[4.2]

Mohr was ordained as a priest in 1815 and in 1816 he wrote the lyrics to Silent Night in the form of a poem.[1] This was a hard time for people living in Salzburg. The Napoleonic Wars had just ended and Salzburg was not longer an autonomous state. Salzburg was split in two, divided by the Salzach, one part given to Bavaria and the other to Austria. The economy was struggling as the war decreased the salt trade, Salzburg's primary industry at the time. You can hear the impact of these hard times in Mohr's poem with the longing for the peace and restoration Christ has to offer.[2] Mohr writes:

> Silent night! Holy night!
> Where today all the might
> Of His fatherly love us graced
> And then Jesus, as brother embraced.
> All the peoples on earth!
> All the peoples on earth! [2] [3]

On Christmas Eve Day, 1818 Mohr approached the choirmaster of the church, Franz Gruber, requesting that he compose a melody for the poem, which could be performed that night. In just a few short hours Gruber wrote the melody that people cherish today. The song was performed that evening by Gruber and the church choir, accompanied by Mohr on his guitar.[4.3] Mohr died in December 1848.[4.4] While few people know about Joseph Mohr and his life, people all around the world have been impacted by his words.

If you wish learn more about Joseph Mohr, Franz Gruber, and the story of Silent Night, a visit to the Silent Night Museum in Hallein is a good place to start.

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Appendix B: Survey Content

The following is the content and questions, which were posted on Survey Monkey.

Introduction Page

Hello my name is Katie M Hatch (khatch@bgsu.edu) and I am a BGSU undergrad Visual Communication Technology student. You are invited to take part in a research study on Mobile Phone Audio Tours in Europe as part of my study abroad research project. The purpose of this research is to find out the interest of users in European mobile phone tours as well as the practicality and sustainability of developing European mobile phone tours for visitors outside Europe. Your help in this study may lead to the development of audio tours throughout Europe, making your vacations more informative and enjoyable.

Your participation in this survey will take approximately 10-15 minutes to complete; your participation will involve answering 12 questions and listening to one tour prompt on a simulated mobile phone tour. You voluntarily consent to participate in this research investigation. You must be 18 years of age or older to participate in this study and your primary residence must be outside Europe. You may refuse to participate in this investigation or withdraw your consent and discontinue participation in this study without penalty and without affecting your relationship to Bowling Green State University in any way.

All gathered material will be kept anonymous. The Primary investigator, Katie M Hatch, and the adviser, Dr. Larry O. Hatch will be the only individuals with access to the raw data. All presented information will be in aggregate form to protect any personal information gathered through your participation in this study. At the end of the survey please clear all browser cache and page history to ensure no information from the completed survey is left on the system.

There is no anticipated risk involved in your participation of this study, which includes the completion of the survey.

If you have any questions or comments about this study, you can contact Katie M. Hatch at khatch@bgsu.edu or Dr. Larry O. Hatch, my project adviser, at lhatch@bgsu.edu.

If you have any questions regarding participant rights, you may contact the Chair of HSRB at 419-372-7716, or contact them through email at hsrb@bgsu.edu.

By completing this survey and submitting it you are indicating your consent to participate in the study, verifying that you are 18 years of age or older and your primary residence is not a European country.

Thank you for your time and consideration, your participation is greatly appreciated if you opt to complete the survey.

Qualifying Questions

SQ 1. Are you 18 years old or older?

( ) Yes
( ) No

SQ 2. Is your primary residence outside of Europe?

( ) Yes
( ) No

Pre-simulation Survey Questions

SQ 3. What is your age?

( ) age [Fill in the blank]

SQ 4. What is your gender?

( ) Male
( ) Female

SQ 5. Where do you find most of your travel information (transportation, attractions, restaurants, etc.)?
[Select all that apply]

[ ] tour books
[ ] tv shows or specials
[ ] internet
[ ] travel agents
[ ] information point (in the city)
[ ] word of mouth

SQ 6. If you were to travel to Europe, what is the likelihood that you would have a mobile phone that works in Europe for non-emergency use?

( ) I absolutely would not have one
( ) I there is a slight chance I would have one
( ) I may have one
( ) I probably would have one
( ) I absolutely would have one

SQ 7. Have you taken a mobile phone tour before?

( ) Yes
( ) No

Information About Taking The Simulation

Now it is time to test the tour. Please copy and paste the following link into a new window in order to listen to a tour prompt of the simulated phone tour before continuing on to the next set of question. The link may take a minute or two to load.

When you have completed listening to at least one tour prompt, please close out that window and return here to answer the next set of questions.

Tour Link: http://personal.bgsu.edu/~khatch/handyTour2.html

Post-simulation Survey Questions

SQ 8. What was your overall impression of this mobile phone audio tour example?

( ) 1 - Poor
( ) 2 - Weak
( ) 3 - Neutral
( ) 4 - Good
( ) 5 – Excellent

SQ 9. Does this experience pique your interest in using a mobile phone for travels throughout Europe?

( ) No
( ) Yes

SQ 10. Do you have any concerns about taking a mobile phone audio tour? If so please explain?

( ) No
( ) Yes
reasons for answering yes [fill in the blank]

SQ 11. Which of the following tours would you most like to go on?

( ) a tour where the prompts go in a specified sequence and build on each other (you are guided through)
( ) a tour where the prompts do not have a specified sequence and can be taken in any order you choose (you are free to go in any order you choose)
( ) it does not matter

SQ 12. To what degree would the availability of mobile phone tours in Europe encourage you to rent or own a cell phone for non-emergency use during European travels?

( ) 1 - Not at all
( ) 2 - Slightly
( ) 3 - Somewhat likely
( ) 4 - Very likely
( ) 5 – Greatly

SQ 13. If you were to travel to Europe check all of the following situations in which you would take a mobile phone tour during your travels.
[Select all that apply]

[ ] If it was free without advertisements
[ ] If it was free with advertisements
[ ] If it was under $5
[ ] If it was less than other tour options such as a guided tour
[ ] If it was the same price as other tour options
[ ] If it was more expensive than other tour options

SQ 14. Please select from the following situations, locations and themes which would you be most interested in taking in the form of a mobile phone tours in Europe.
[Select all that apply]

[ ] City walking tour
[ ] Country wide tour
[ ] Gardens
[ ] Museums (indoor)
[ ] Museums (outdoor)
[ ] Nature Preserves
[ ] Zoos
[ ] Architectural Tour
[ ] Art Tour
[ ] Cultural Tour
[ ] Ecological Tour
[ ] Historical Tour
[ ] Language Tour
[ ] Political Tour
[ ] Religious Tour
[ ] Sciences Tour
[ ] Other (please specify) [Fill in the blank]

Appendix C: Human Subject Review Board Approval Letter

BGSU
Bowling Green State University

Office of Research Compliance
309A University Hall
Bowling Green, OH 43403-0183
Phone: (419) 372-7716
Fax: (419) 372-6916
E-mail: hsrb@bgsu.edu

July 16, 2009

TO: Katie Hatch
VC&TE

FROM: Hillary Harms, Ph.D.
HSRB Administrator

RE: HSRB Project No.: H10O009UX2

TITLE: *Salzburg Handy Tour: An Exploration of Mobile Phone Audio Tours in Europe*

You have met the conditions for approval for your project involving human subjects. **As of July 16, 2009, your project has been granted final approval by the Human Subjects Review Board (HSRB).** This approval expires on July 13, 2010. You may proceed with subject recruitment and data collection.

The final approved version of the consent document(s) is attached. Consistent with federal OHRP guidance to IRBs, **the consent document(s) bearing the HSRB approval/expiration date stamp is the only valid version and you must use copies of the date-stamped document(s) in obtaining consent from research subjects.**

You are responsible to conduct the study as approved by the HSRB and to use only approved forms. If you seek to make any changes in your project activities or procedures (including increases in the number of participants), please send a request for modifications immediately to the HSRB via this office. Please notify me, in writing (fax: 372-6916 or email: hsrb@bgsu.edu) upon completion of your project.

Good luck with your work. Let me know if this office or the HSRB can be of assistance as your project proceeds.

Comments/ Modifications:
1. Please put the text equivalent of the HSRB approval stamp in the "footer" area of the online consent page.
2. Please provide the Board with the survey URL when available.

c: Dr. Larry Hatch

Research Category: EXEMPT #2

Appendix D: Tour Simulation Images

Figure Captions

Figure D1. Opening screen of tour simulation.

Figure D2. Animation of dialing into the system part 1.

Figure D3. Animation of dialing into the system part 2. In the animation the numbers on the keypad of the phone turn red, indicating that the user would normally be dialing the buttons on the phone.

Figure D4. The prompt menu. The user will click on the prompt listed in the menu. This is followed by a short animation demonstrating that the user would normally dial the prompt number into the phone.

Figure D5. Screen for the prompt: Mozart's Residence.

Figure D6. Screen for the prompt: Grave of Mozart's Family.

Figure D7. Screen for the prompt: Doppler's House.

Figure D8. Screen for the prompt: The Grave of Paracelsus.

Figure D9. Screen for the prompt: The Grave of Paracelsus - Reading of the Inscription.

Figure D10. Screen for the prompt: Mohr's House.

Figure D1

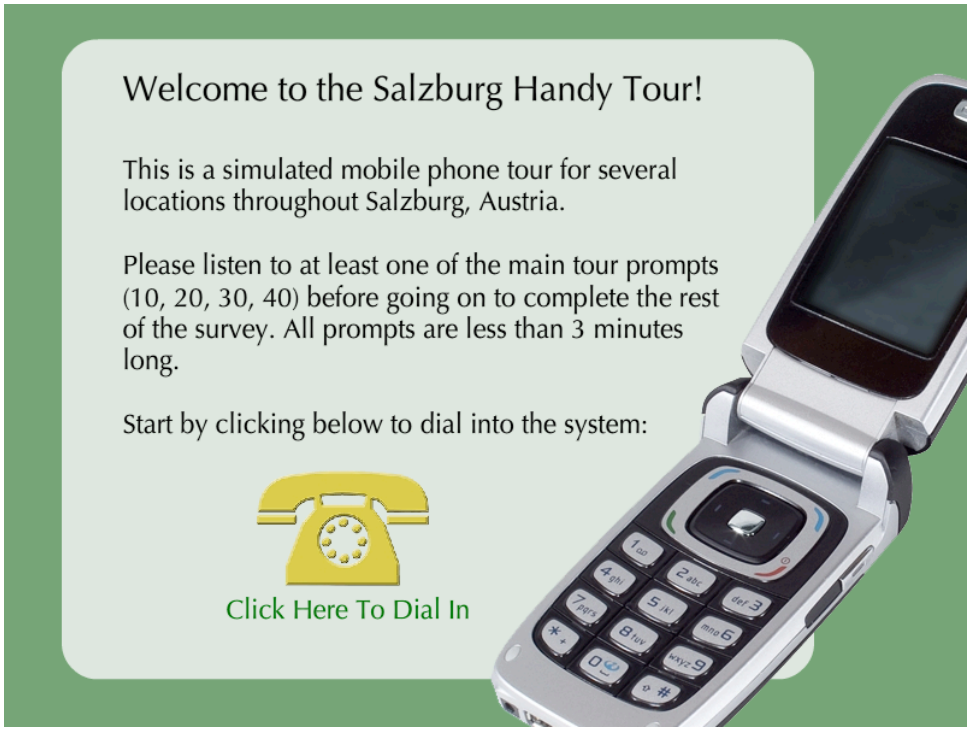


Figure D2

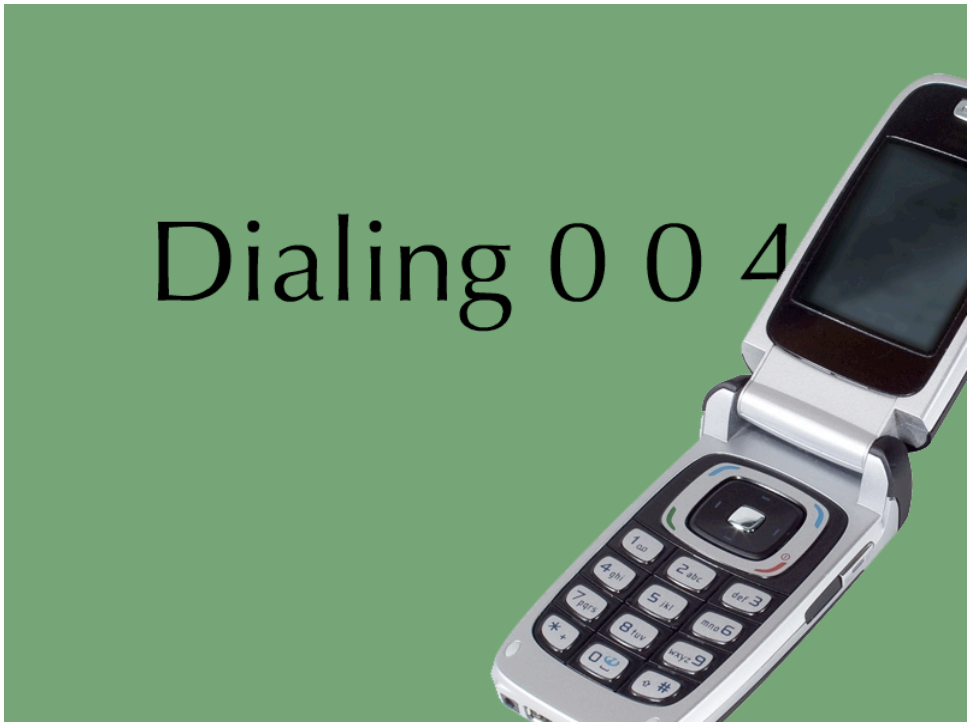


Figure D3

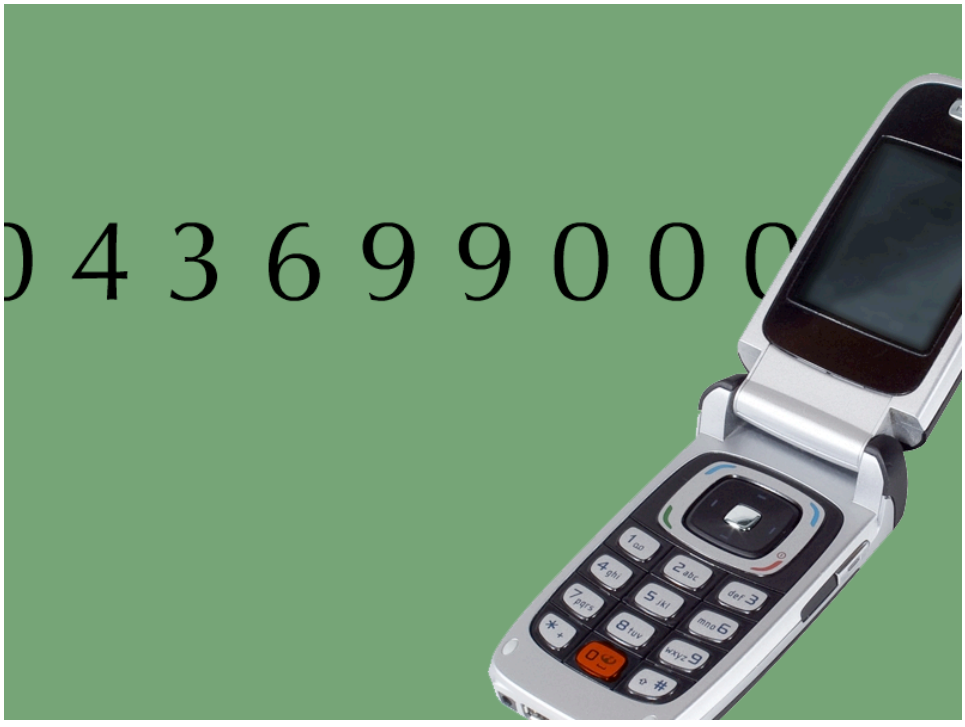


Figure D4

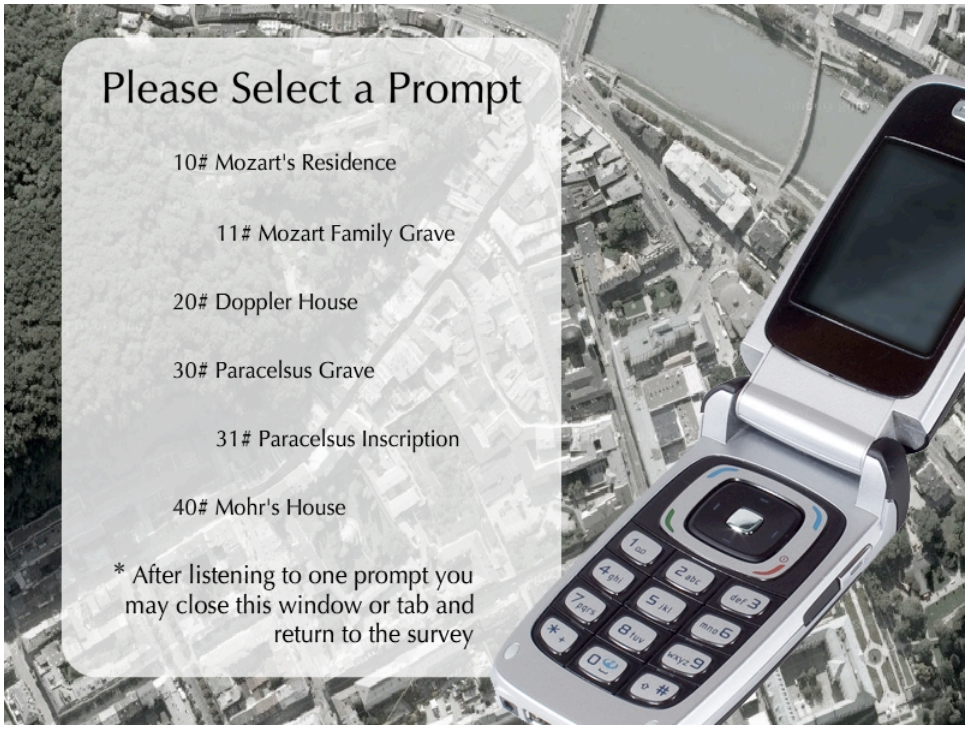


Figure D5

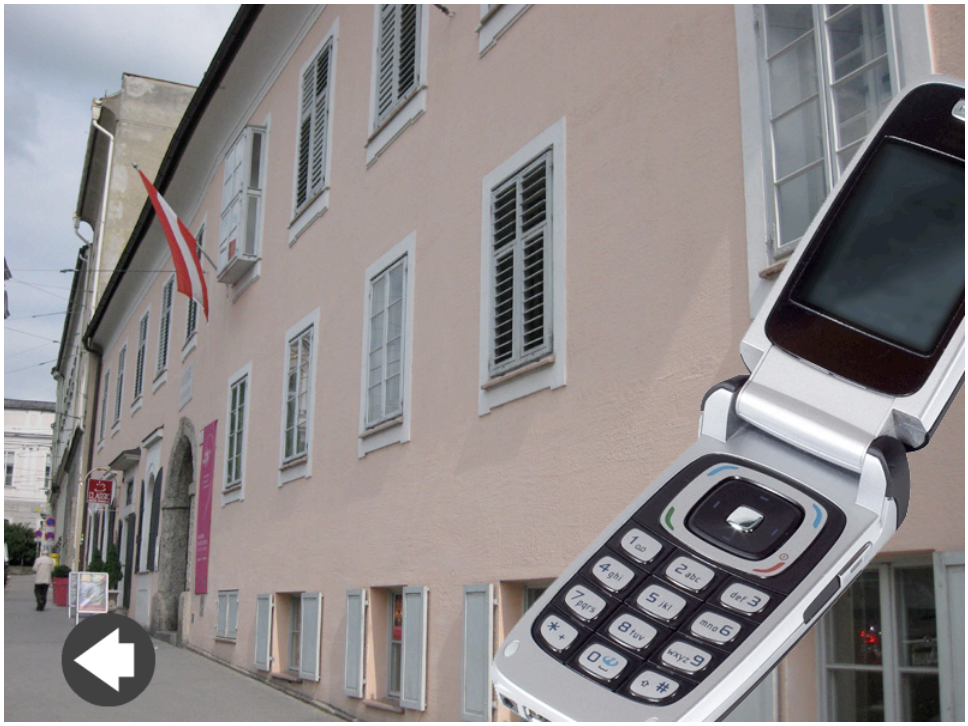


Figure D6

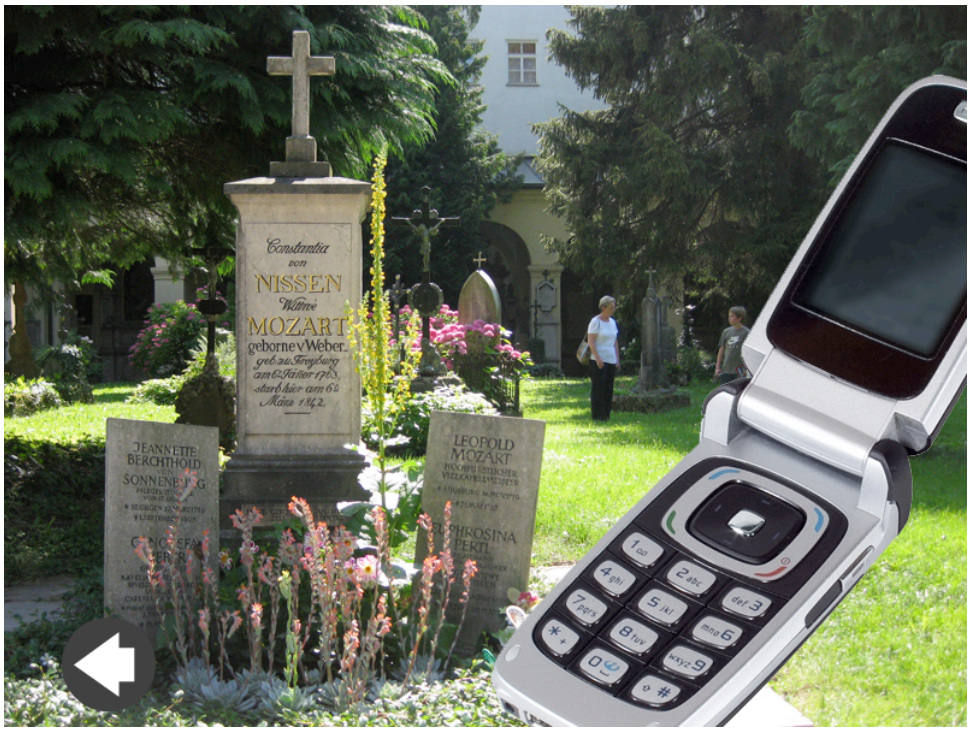


Figure D7

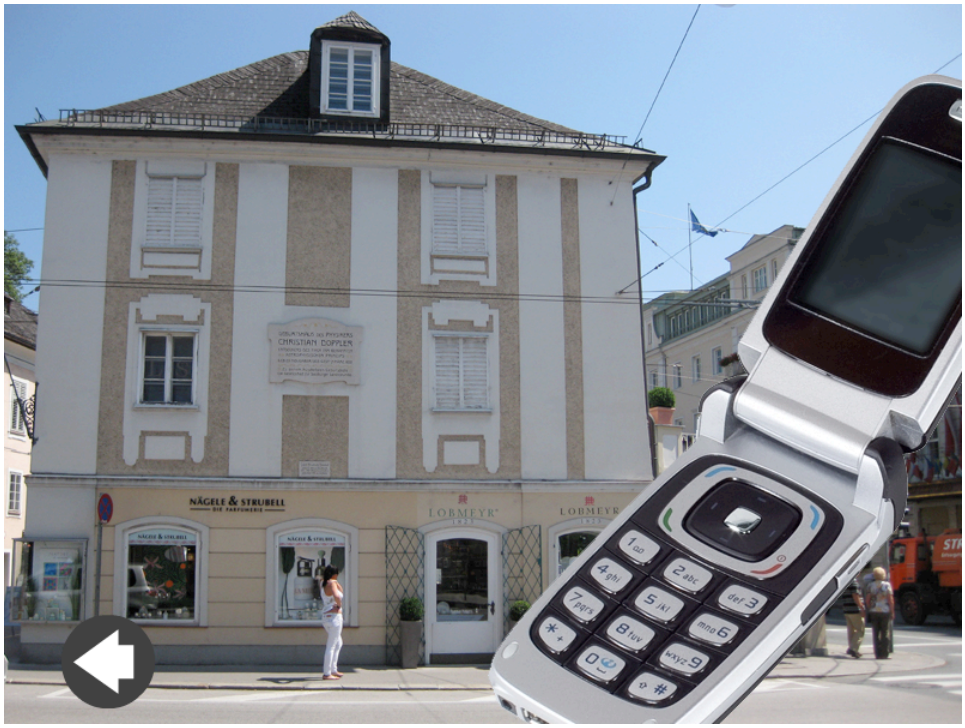


Figure D8

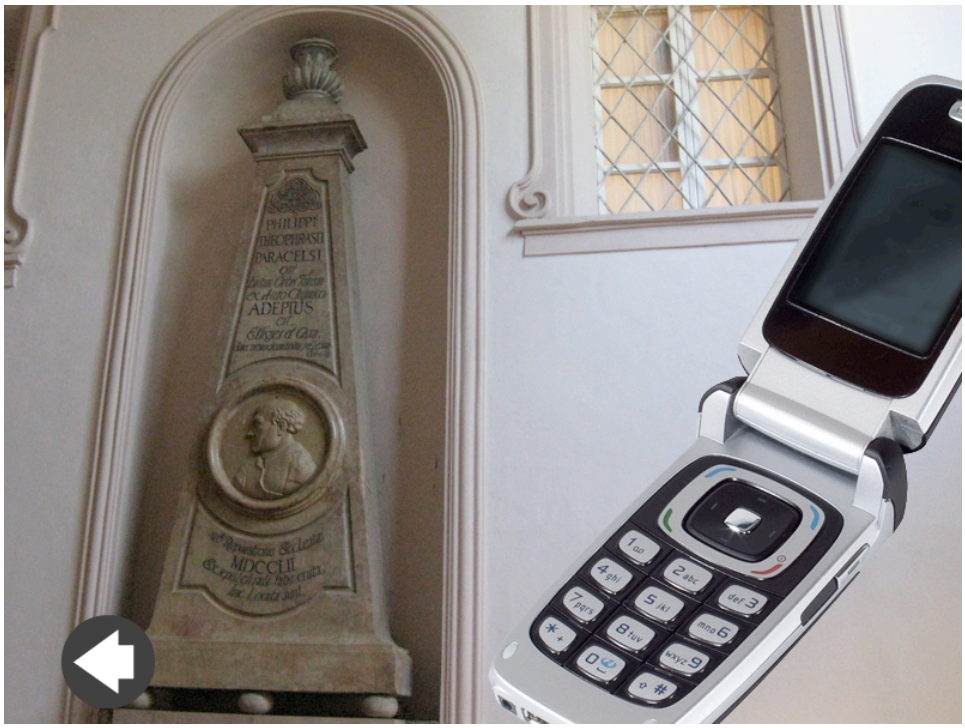


Figure D9

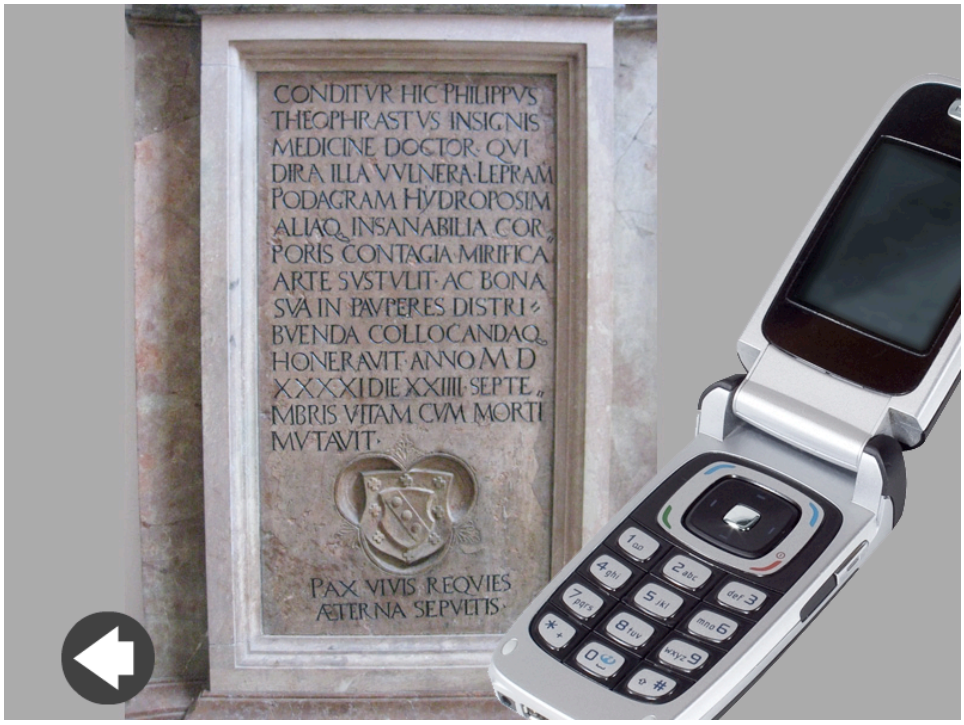
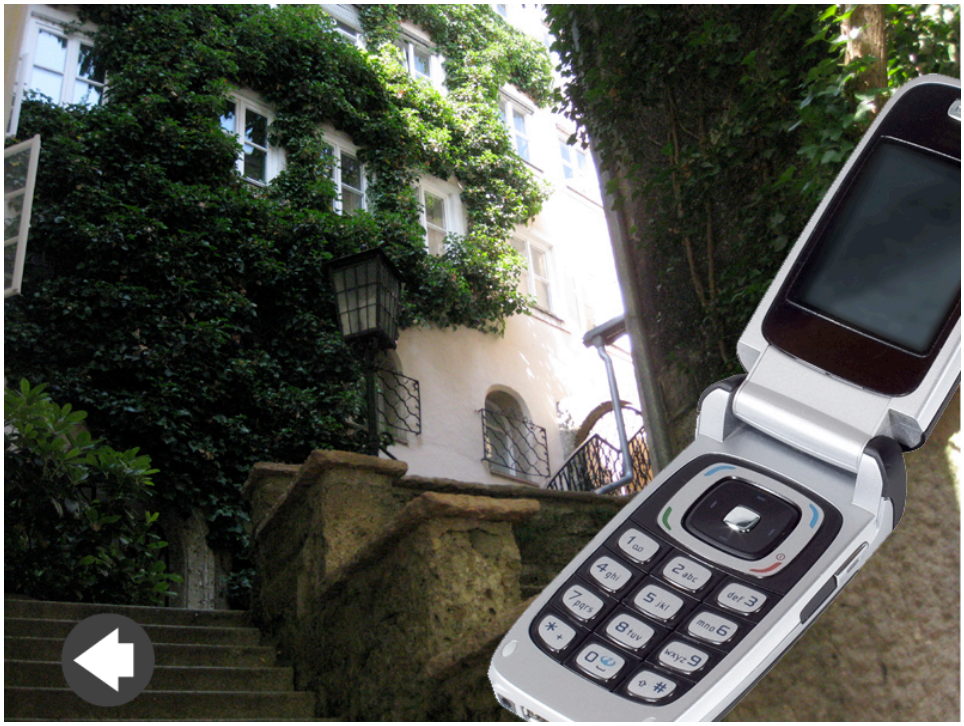


Figure D10



Appendix E: Graphs of Results

Figure Captions

Figure E1. Likely hood of participants to travel with a mobile phone in Europe, prior to taking the mobile phone simulation.

Figure E2. The influence of mobile phone tours on the participants' decisions to travel with a mobile phone in Europe.

Figure E3. Participants' impressions of the mobile phone tour simulation.

Figure E4. Participants' piqued interest in mobile phone tours due to simulation.

Figure E5. Percentage of participants with concerns related to mobile phone tours.

Figure E6. Participants' preferences for sequencing of mobile phone tours.

Figure E7. Participants' preferences for types and venues of mobile phone tours.

Figure E8. Participants' cost preferences for European mobile phone tours.

Figure E1

6. If you were to travel to Europe, what is the likelihood that you would have a mobile phone that works in Europe for non-emergency use?

	Response Percent	Response Count
I absolutely would not have one	4.3%	2
I there is a slight chance I would have one	**39.1%**	**18**
I may have one	26.1%	12
I probably would have one	19.6%	9
I absolutely would have one	10.9%	5
answered question		**46**
skipped question		**5**

Figure E2

12. To what degree would the availability of mobile phone tours in Europe encourage you to rent or own a cell phone for non-emergency use during European travels?		Response Percent	Response Count
1 - Not at all		7.5%	3
2 - Slightly		25.0%	10
3 - Somewhat likely		**35.0%**	**14**
4 - Very likely		25.0%	10
5 - Greatly		7.5%	3
	answered question		**40**
	skipped question		**11**

Figure E3

8. What was your overall impression of this mobile phone audio tour example?		Response Percent	Response Count
1 - Poor		0.0%	0
2 - Weak		5.0%	2
3 - Neutral		15.0%	6
4 - Good		**52.5%**	**21**
5 - Excellent		27.5%	11
	answered question		**40**
	skipped question		**11**

Figure E4

9. Does this experience pique your interest in using a mobile phone for travels throughout Europe?			
		Response Percent	Response Count
Yes		87.5%	35
No		12.5%	5
	answered question		40
	skipped question		11

Figure E5

10. Do you have any concerns about taking a mobile phone audio tour? If so please explain?			
		Response Percent	Response Count
No		55.0%	22
Yes		45.0%	18
	reasons for answering yes		18
	answered question		40
	skipped question		11

Figure E6

11. Which of the following tours would you most like to go on?			
		Response Percent	Response Count
a tour where the prompts go in a specified sequence and build on each other (you are guided through)		25.0%	10
a tour where the prompts do not have a specified sequence and can be taken in any order you choose (you are free to go in any order you choose)		**50.0%**	**20**
it does not matter		25.0%	10
	answered question		40
	skipped question		11

Figure E7

14. Please select from the following situations, locations and themes which would you be most interested in taking in the form of a mobile phone tours in Europe. [Select all that apply]

	Response Percent	Response Count
City walking tour	**87.2%**	**34**
Country wide tour	30.8%	12
Gardens	56.4%	22
Museums (indoor)	74.4%	29
Museums (outdoor)	64.1%	25
Nature Preserves	30.8%	12
Zoos	25.6%	10
Architectural Tour	74.4%	29
Art Tour	56.4%	22
Cultural Tour	51.3%	20
Ecological Tour	25.6%	10
Historical Tour	69.2%	27
Language Tour	33.3%	13
Political Tour	33.3%	13
Religious Tour	41.0%	16
Sciences Tour	35.9%	14
Other (please specify)	20.5%	8
	answered question	**39**
	skipped question	**12**

Figure E8

13. If you were to travel to Europe check all of the following situations in which you would take a mobile phone tour during your travels. [Select all that apply]

	Response Percent	Response Count
If it was free without advertisements	**82.5%**	**33**
If it was free with advertisements	60.0%	24
If it was under $5	77.5%	31
If it was less than other tour options such as a guided tour	52.5%	21
If it was the same price as other tour options	15.0%	6
If it was more expensive than other tour options	2.5%	1
	answered question	**40**
	skipped question	**11**