iPod as a Visitor's Personal Guide

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INTRODUCTION

Over the past few years, use of mobile devices for various purposes has increased. Apple released its first iPod on October 23, 2001, a breakthrough MP3 player. Today, Apple's fifth-generation iPod is available which can be considered as a portable media player that focuses on the playback of digital video, as well as storing and displaying pictures and video (see apple.com*)*. Since then the iPod has been successfully and effectively used for various purposes including as a media player, bootable drive, external data storage device, PDA replacement, and for podcasting.

Academia and tourism are two areas where the use of mobile devices are encouraged to gain benefits from the technology. For academic use, the iPod's recording and storage capabilities have been explored by some educational institutes across the United States. According to the Duke University iPod First-Year Experience Final Evaluation Report, the iPod supports individual learning preferences and needs, and easy-to-use tools for recording interviews, field notes, and small-group discussions. The tourism industry is also identified as a potential area to use mobile technologies. Recently, Dublin Tourism, Ireland discovered the use of the iPod as a portable tourist guide; Ireland's neighbor Scotland followed (see Physorg, 2006).

Sales of interactive portable MP3 players have increased explosively in the last few years. Information Media Group predicts that sales will continue to increase at the rate of 45% for next six years (Macworld UK, 2005). The iPod is currently the world's best-selling digital audio player and increased its popularity in Australia sevenfold in 2004 (see apple.com). Greg Joswiak, the worldwide vice president of iPod marketing, said: "As of August 2005, market share in Australia is 68% of [the] digital player market."

With the increasing use of digital media together with the handheld devices, this iPod application will eliminate the need for human guides and will provide an entertaining experience to visitors. It will be very useful for landmark tourist destinations such as aquariums and museums, and there will be a huge demand with the increasing flow of tourists in Australia, which according to Tourism Australia (2005) was an increase of 5.4% from 2004 to 2005, with tourists numbering 5.5 million in the latter year.

BACKGROUND

Tourism is an important activity for human life as a source of pleasure and during the holidays. We visit various places every now and then, including tourist destinations such as a museum, commercial destinations such as a stock market, educational institutes such as a university, or public places such as a shopping mall.

Every new visitor suffers from preconceptions and anxiety from their lack of knowledge about the visiting site. This acts as a barrier and must be overcome before an effective visit can take place. As for visitors' preconceptions, the authors of this article encourage visitors to address their anxiety and introduce excitement before they start the tour. The tourism industry so far has promoted the various communication mediums such as maps on the board, written information about specific locations, and now display video screens. Tourism has been a popular area for mobile information systems (Cheverst, Davies, Mitchell, Friday, & Efstratiou, 2000) and other PDA-based systems.

Audio and video has been neglected or underused as a leaning medium in recent years (Scottish Council for Educational Technology, 1994.). The general view is that video is a better tool for leaning than audio. Animation and interactive media like simulations can attract attention, but they proved to be expensive. Hearing is an astoundingly efficient skill according to Clark and Walsh (2004).

Portable media players such as PDAs and iPods can provide information anytime and anywhere. These devices come with their own hard drives and eliminate transportation of storage devices, which is a requirement for video communication. The iPod, with built-in speakers and microphone, makes it easier to record and playback information stored into its hard drive. Clark and Walsh (2004) stated that besides its popularity and ease of use, listening to an iPod and similar devices at public places is socially accepted.

At Box Hill Institute of TAFE, we realized the use of an iPod as a part of our "Innovation Walk" project. The "Innovation Walk" is developed with the aim of showcasing the institute's prized innovations. Career teachers, overseas visitors, students, industry and government dignitaries, and member of the community can undertake the walk independently or as a guided tour.

Figure 1. Designed main menu of a prototype device

A prototype device is being developed using an Apple iPod (see Figure 1).

PERSONAL GUIDE DESIGN

The visitor's personal guide itself will be in the form of an iPod, which can be programmed to give details of a defined list of locations, as well as playing an audible narration of each featured location. This will allow visitors to navigate the visitor's site on their own with the use of the iPod. The following technologies were considered initially to program the iPod as per the requirements:

- creating an application in J2ME on the Java platform porting it to the iPod;
- installing a variant of Linux (more on this later), and modifying its operation to create the system from this platform; and
- creating a text-based guide on the iPod.

The text-based option is the easiest way, with some limitations and given preference on the basis of the estimated time and skills available. To get multiple text pages to run is a fairly simple concept. It requires a specifically named file located under the "Notes" folder that acts as an index page, from which the menu would be created and all other notes will be created. As discussed earlier, iPods as storage devices can easily be connected to a computer via the USB port, and the drive that is mounted for the iPod can be navigated easily from "My Computer."

Creating a Content Page

Open up the "Notes" folder and create a new file called "Main.linx." This file name is required for two reasons. The first reason is that by naming the file "Main," the iPod will

automatically display the page as an index, rather than providing a list of available files to open. Secondly, the extension ".linx" of the filename defines the method used to display on the iPod screen a link to another text file.

The iPod has two methods of displaying a link. The default is to have a link created within a text file appear as a hyperlink, similar to that of an html Web page with the word or sentence underlined. The second method is to display the link as an actual menu item on the iPod. This method would be ideal for the contents of our visitor's guide.

Once the "Main.linx" file has been created and located correctly, the next step will be the contents of the main page. This will create the major links to each of the locations that will contain information. This is achieved by opening up the "Main.linx" file in the Notepad and entering the following:

<title>

Alternative Operating Systems for Apple's iPod

Currently there are two main alternatives to Apples' iPod Operating System: iPodLinux (an open source venture into porting Linux onto the iPod) and Rockbox (an open source replacement firmware for mp3 players).

iPodlinux (www.ipodlinux.org) and Rockbox Operating System (www.rockbox.org) are able to replace Apple's Operating System and still maintain the same functionality. The alternative operating systems are capable of playing mp3s and other audio formats, videos, and reading notes. The main difference between Apple's Operating System is that with iPodlinux and Rockbox you can:

- play video games,
- run applications,
- simply develop your own applications without requiring commercial development tools, and
- programmers can develop their own applications or modify/customize existing iPodlinux GPL (General Public Licenxe) applications.

Certain Linux applications are recompiled to run on the iPod without modification. Both alternatives to Apple's iPod Operating System have a following of enthusiastic programmers and developers who have figured out the workings of the five generations of the iPod. Developers and programmers of the iPodlinux have contributed a lot to an open source operating system by setting up Internet relay chat rooms, news groups, forums, wikis, and Web sites. Sourceforge hosts the source code and development comma separated value (CSV) tree, which is maintained by the iPodlinux core developers. Documentation of the iPod hardware components such as the microcontroller, display, memory, battery, and

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