A WEB-BASED TOURIST GUIDE MOBILE APPLICATION

Andreas Kamilaris
Networks Research Laboratory, University of Cyprus
Department of Computer Science, Nicosia, Cyprus

Andreas Pitsillides
Networks Research Laboratory, University of Cyprus
Department of Computer Science, Nicosia, Cyprus

ABSTRACT

Tourism is an important source of income for many countries, including Cyprus, a small island in Mediterranean that largely depends on tourism for its financial growth. In order to offer better services to tourists, in regard to informing them about the various attractions of the island, we have developed a tourism guide mobile application, which can assist tourists during their stay at the country. By using modern Web techniques, we managed to develop a tourist guide application that is able to be installed on various mobile platforms, such as Android and iOS, looking very similar to native applications. This practice constitutes a novel technique in mobile development.

KEYWORDS

1. INTRODUCTION

Tourism is an important source of income for many countries, especially those which combine culture and relaxation. Cyprus, a small island in the Mediterranean is one such example, counting on tourism for its financial growth. Cyprus blends archaeological wealth with beautiful beaches and warm temperatures and it is a popular destination for tourists from across the globe. In order to offer better services to tourists, in regard to informing them about the archaeological and religious attractions of the island, as well as about nice beaches and general places of interest, we decided to develop a tourism guide as a mobile application. This constitutes a sustainable action, since no paper would be needed for printing books and magazines that serve as guides. Moreover, this service would help promote tourism in the country, contributing in a small degree on the further financial development of Cyprus.

2. FEATURES AND IMPLEMENTATION DETAILS

We decided to implement the mobile application by means of Web technologies, namely HTML5 and AJAX, to achieve interoperability across multiple phone platforms, with a small penalty in performance. The pros and cons of hybrid vs native mobile development are discussed in (Icenium, 2013). Mobile development based on common and well-understood, open source Web technologies, has the potential to increase the sustainability of software in general (Kamilaris, 2013).

By means of Adobe PhoneGap (Adobe PhoneGap, 2013), which is a free and open source framework that allows to create mobile applications targeting multiple phone platforms, we managed to create a tourist guide application that is able to operate on Android (NetRL, 2013), iOS (for iPhone, iPad), Windows, Nokia
phones (Symbian-based), Blackberry and WebOS. PhoneGap helped to acquire the current location of the user, using Wi-Fi, GSM or GPS localization.

After developing the core functionality, we employed the Kendo UI framework (Kendo UI, 2013), which is a comprehensive HTML5/JavaScript framework for modern Web and mobile application development. Through Kendo, we managed to select from various designs, themes and layouts which look like a native application on the targeted platform. Figure 1 shows three different versions of the tourist guide mobile application, one for the Android operating system, one for Windows phones and one for the iOS platform. The reader can observe how similar both versions look to a native application on these platforms.

Therefore, with little effort, and by using well-known and understood technologies, we managed to perform this task with minimal effort. We list below the main features of the tourism guide mobile application, all enabled by means of modern Web techniques and tools:

• View nearby attractions from current location, either on a list or on the map of Cyprus.
• See detailed descriptions of particular attractions by clicking on them, as well as relevant information such as opening hours, contact details, entrance fees etc.
• Filter attractions according to the user's preferences, to view only places of interest.
• Adjust distance from nearby attractions. It can range from hundreds of meters to tens of kilometers.
• Search for attractions on a lexicographical basis.
• View the most popular attractions in every city or around the island, as they are rated by other tourists.
• Create a tour plan, by adding attractions to a list. This list can be edited even before entering Cyprus, to better organize vacations. This plan can then be viewed on the map of Cyprus with directions of how to visit these places in the most convenient way.
• Mark attractions as visited, to keep a list of visited places as a reference.
• Rate a visited attraction, so that other tourists would be assisted to select only the best places.
• View directions to an attraction, either on the map of Cyprus or in the form of text directions.

We note that the tourist's profile (sex, age, nationality, preferences), as well as his visited attractions, are saved anonymously on a Web server. Thus, our mobile application has the ability to offer more personalized suggestions to tourists, such as places visited by people of similar age or same nationality, which satisfy the user's preferences. After numerous requests from some tourists, we added a feature for selecting their place of stay manually. In this way, people without a sensor for localization on their mobile phones could still use the application and be informed about nearby and general tourist attractions.

Of course, the performance is not as that of a native application, but it is very satisfactory. Comparing the performance of our mobile application with a native one (Quinto Stdio Inc., 2013), offering very similar services, our application is slightly slower, but only in a small degree (10-16%). All actions and features are performed in a few seconds, while the menus are loaded in milliseconds.

By going native, we would have been obliged to learn specific programming languages and methods, such as Java for the Android case and Objective-C for iOS. Thus, the tradeoff of interoperability for a small performance degradation is worth it.

Concerning some figures of use, in less than three months when the Android version of our mobile application is on Google Play (NetRL, 2013), it has been used by more than 1,600 tourists. This indicates a success of the application, especially since most tourists being happy about it, have rated it positively (rating 4.0/5.0).

ACKNOWLEDGEMENT

The Tourist Guide mobile application is supported and funded by the Research Promotion Foundation of Cyprus, under Grant No. BUSINESS/PRODUCT/0609/73, “Development and Application of a Digital-Historical-Cultural Tourist Guide”.
Figure 1. Snapshots of the tourist guide mobile application. The Android version appears on top, the iOS version in the middle and the Windows version at the bottom. From the left to the right, the application shows the main menu, a list of nearby attractions and a filtering of attractions according to personal preferences.

REFERENCES