

## Broadcasting mobile cross-platform Hadas-Eritrea and Eritrean profile using phone gap

S.K. Manju Bargavi<sup>1</sup> and G.P.Rajamani<sup>2</sup>

<sup>1</sup>Department of Computer Science Eritrea Institute of Technology Asmara, Eritrea.

<sup>2</sup>Suguna College of Engineering Coimbatore, Tamilnadu.

### ARTICLE INFO

#### Article history:

Received: 15 February 2017;

Received in revised form:  
25 March 2017;

Accepted: 6 April 2017;

#### Keywords

Apache Cordova,  
Android, iOS,  
Multi-platform,  
PhoneGap.

### ABSTRACT

In this age of technology, smartphones play a vital role in almost all fields of social life to make it easy going a convenience. Day by day, the users of smartphones are increasing. There is no conditional boundation for using the smart phone. People, who own these devices tend to use them at their maximum as these devices such as mobile phones, are very convenient to use anytime, anywhere. Single application can use multi-platform means convenient for everyone. This paper tries to convey information about the current and earlier news events for the frequent users of Hadas-Eritrea and Eritrean profile, the end-users can be able to interact with more graphical features of this multi-platform mobile application. In this paper, we have proved Broadcasting Mobile Multi-Platform Hadas – Eritrea and Eritrean profile (BHMMP) with different platforms such as Windows7 OS, Android, iOS, and Windows Phone using PhoneGap/Apache Cordova framework.

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## 1. Introduction

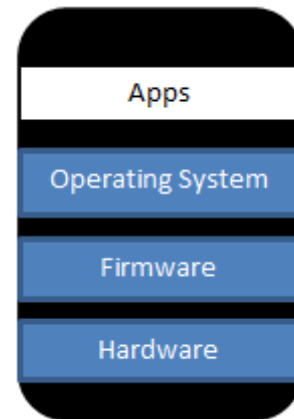
### 1.1 Overview of Mobile application

Mobile, handhelds and easy-to-carry devices have started a new revolution in software engineering. These small but efficient devices are capable to run applications created with high-end programming languages. While many have at least some prior experience working with mobile applications, a large number of people are more familiar with non-mobile platforms (like web platforms).



**Fig 1.1. Mobile applications are not equal to web application.**

There are number of difference between these, such as, screen size, menus, toolbars etc. But the architecture of a mobile device is similar to that of a computer system represented in Figure 1.2. It has custom built hardware, firmware, and operating systems. These three items are mostly proprietary and are engineered, developed, and assembled under one flagship organization



**Fig 1.2 Architecture of Mobile device [8]**

Application software is developed both by flagship organization and developers from outside of the organization. A number of well-recognized mobile operating systems are available in the market in both proprietary and open-source categories. Most widely used mobile operating systems are

- Android
- iOS
- Blackberry
- Windows

Every mobile operating system provides its own set of tools and environments to develop apps that run on them. Applications made for one operating system cannot run on any other platform as they are entirely different. But, PhoneGap is made possible due to a commonality between all of the mobile platforms.

### 1.2 Framework

PhoneGap is a framework that makes the developers develop their apps using standard web APIs for all major mobile operating systems. It is open-source and free.

Developers only need to know web development using HTML5, CSS3 and JavaScript. It takes care of rest of the work, such as look and feel of the app and portability among various mobile operating systems. By using PhoneGap, one can create apps for all major mobile operating systems like Apple iOS, Android, BlackBerry, Windows etc. This does not require the developer to have an expertise over any of the above mentioned platforms; the developer is not required to know programming to code the app from scratch. It allows its users to upload the data contents on website and it automatically converts it to various App files.



Fig 1.3. Understanding PhoneGap[8].



Fig 1.4. PhoneGap Architecture [6].

The PhoneGap framework also has a native component which works behind the scene and does the actual work on the device (phone or tablet). The Figure 1.3 represents overall PhoneGap architecture. An application builds using the same primarily it has the JavaScript Business Logic Part, which drives the UI and its functionality and the JavaScript Part, which access and control the device. A mobile developer interested in mixing native application components with a Web View (browser window) can access device-level APIs with the help of Cordova.

Table 1. Requirements for development environments (for various mobile platforms) [4].

Mobile OS	Operating System	Software/IDEs	Programming Language
iOS	Mac only	Xcode	Objective C
Android	Windows/Mac/Linux	Eclipse/Java/ADT	Java
BlackBerry	Windows mainly	Eclipse/JDE, Java	Java
Symbian	Windows/Mac/Linux	Carbide.e ++	C++
WebOS	Windows/Mac/Linux	Eclipse/WebOS plugin	HTML/JavaScript/C++
Windows 7 phone	Windows mainly	Visual Studio 2010	C#,NET, Silverlight or WPF

2. Literature Review

There are many cross-platform frameworks now such as Titanium, Rhods, DragonRad, MoSync and so on, and PhoneGap is considered the best one. In 2009, the PhoneGap won the People’s choice award at the Web 2.0 Expo Launch-Pad competition. The web browser is able to support more and more API functions (Charland and Leroux 2011). PhoneGap allows plugins. Plugins are written for a specific platform in that platform’s native language. For example a plugin for iOS would be written in Objective C and a plugin for Android would be written in Java described in Wiki website [5]. PhoneGap needs JavaScript component which exposes the plugin to the application. Each platform needs a separate JavaScript component as well. HTML5 is a new generation of Internet technology standard. It is a cross-platform. Because it supports the personal computer as well as smart phone, iPad and even smart TV. The HTML5 based mobile applications are becoming the mainstream trend of the next generation of mobile internet application (Lu et. al. 2013). Heitkotter et. al.(2013) described as main share in mobile device market belongs to Google Android, Apple iOS, Blackberry and Microsoft Windows Phone. Existing website doesn’t provide the multiplatform mobile application to access the newspapers, magazines and advertisement [7]. This paper provides all accessing facility in multiplatform application.

3. System Design

In this paper we have introduced the Hadas –Eritrea and Eritrean profile with multi-platform application, like Windows 7 OS, Android, iOS.

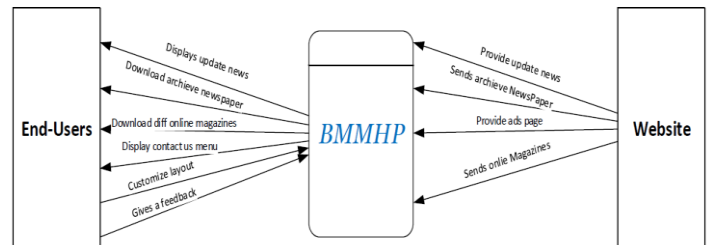


Fig 3.1. Flow Diagram

In figure 3.1 signifies the website gives the number of processes to the end-users. Each process is helpful to the users. Broadcasting mobile multi-platform website gives the news, advertisement and international magazine and local magazine information. Users can easily to download the news magazine from the website with the help of internet. Downloading the past and present newspapers, national and international magazines are easy to download from the website as well as smartphones like Android and iOS.

4. Results And Discussion

Hadas- Eritrea and Eritrea profile website displays the local language (Tigrinya) as well as English language. In this website, it provides current and archive news, Eritrea profile, magazines, advertisement and blog.



Fig 4.1. Home page in local language.



**Fig 4.2. Login Page in Windows 7 OS**

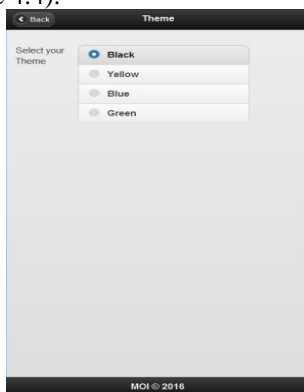
In figure 4.2 shows the blog page with creating the user login. In this blog one can give the existing user details also new user creates new account in this website. Moreover, all kinds of information about Eritrea in Windows 7 Operating System have been handled.



**Fig 4.3. Update Hadas-Eritrea web page in Window 7 OS.**

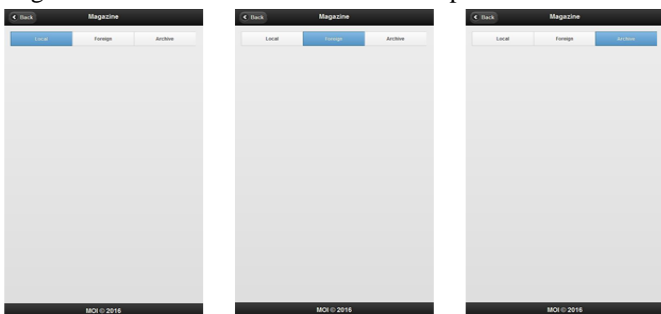
In figure 4.3 shows the administrator can update the news; upload the national and international magazines through the website.

The same information has been implemented in Android and iOS. The Android smart phone has additional features than the website, like changing the themes as a user wishes to represent (Figure 4.4).

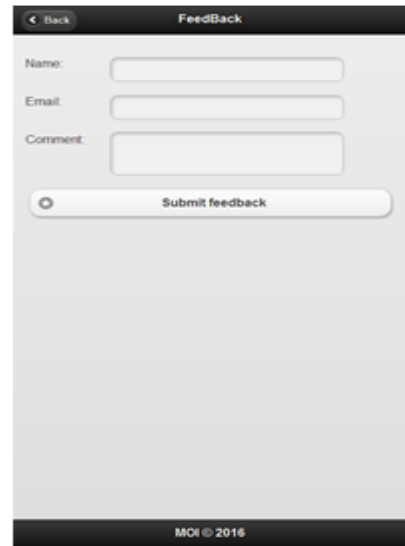


**Fig 4.4. Theme Changes in Android.**

In figure 4.5 shows the foreign, international and archive magazines can access from Android smartphones.



**Fig. 4.5. Selection of Magazines in Android smartphones.**



**Fig 4.6. Feedback about Hadas-Eritrea in Android Smartphones**

In figure 4.6 shows the comments page and upload by submitting feed back to the local server viewed by the web administrator using jquery and ajax call back system.

## 5. Conclusion

We have provided the Hadas –Eritrea and Eritrean profile in cross-platform to be distributed where application is very useful for the local and foreign users. They can download the magazines and give the feedback through the website. Those who handle with smartphones can also handle these features. The excellent API support allows a rapid development and implementation. In future, we will add the discussion blog and radio streaming in smart phones.

## Acknowledgements

This work has been supported by the Ministry of Information, Eritrea and the Department of Computer Science in Eritrea Institute of Technology, Asmara, Eritrea. Also, thanks to our team members are Yonatan Girmay, Mussie Mekonen, Robel Redie and Samuel Berhane.

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