Smartphone: IOS Vs Android

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ABSTRACT — The growing popularity of the smartphone has caused intense competition between technologies such as Symbian, Google, Microsoft and Apple. This Page presents a brief review and comparison of the Android app from Google and the iPhone app from Apple. Comparisons are made on the basis of their platform, their performance and the growth of the mobile world. New Key Features introduced on Android and IOS are also explained.

KEYWORDS — Android; An apple; Applications; Google Android; iPhone; Java; Jelly Bean; Mobile Application; Objective C; Smartphone.

❖ INTRODUCTION

TODAY'S mobile devices are multifunctional devices capable of accommodating a wide variety of applications for both business and consumer use. like a computer

- **Smartphone Operating System**

There are many Operating Systems for smartphones. The main mobile operating systems (OS) used by modern smartphones include:

The operating system is the software platform that determines the functions and features available on your device, such as the mobile operating system, thumbwheel, keyboards, wireless security and synchronization, messaging and more.

Some of the more common and well-known Mobile operating systems are Google's Android and Apple's IOS due to their Popularity, we will talk about these two operating systems that are widely seen in the market and then compare with each other.

- **Smart Phones**

A Smartphone is a mobile phone built on a mobile operating system with more advanced computing capacity and connectivity than a phone. The first Smartphone combined the functions of Personal Digital

Assistant (PDA) with a mobile phone. Some other features

· Portable media players,

· Compact digital cameras,

· Pocket video cameras,

· GPS navigation,

· Web browsers,

· Touchscreen,

· Wi-Fi,

· Mobile Broadband.

· Google's Android,

· Apple's iOS,

· Nokia's Symbian,

· RIM's BlackBerry OS,

· Microsoft's Windows Phone.

Such operating systems can be installed on many different phone models, and typically each device may receive multiple operating system software updates during its lifetime.

Android from Google and IOS from Apple provide not only operating system but also a mobile development platform as both face tough competition against each other. Now we will talk about android and IOS, which are the main operating systems that are widely seen in the market.

Figure : Apple and Android

- **Android**

Android, Inc. was founded by Andy Rubin. In 2005, Google bought it, and then the team led by Rubin developed a mobile device platform powered by the Linux kernel. Finally, on November 5, 2007, the Open Handset Alliance, a collaboration of various companies including Google, HTC, Intel, LG and 76

other companies, introduced itself. On the same day, the Open Handset Alliance also introduced its first product, Android, a mobile device platform built on version 2.6 of the Linux kernel.

[http://developer.android.com/guide/developing/tools/emulat or.html].[1] And the first commercial phone to run the Android operating system was the HTC Dream, released on October 22, 2008 [http://developer.android.com/resources/dashboard/platformversions; http://developer.android.com/guide/basics/what isandroid.html].
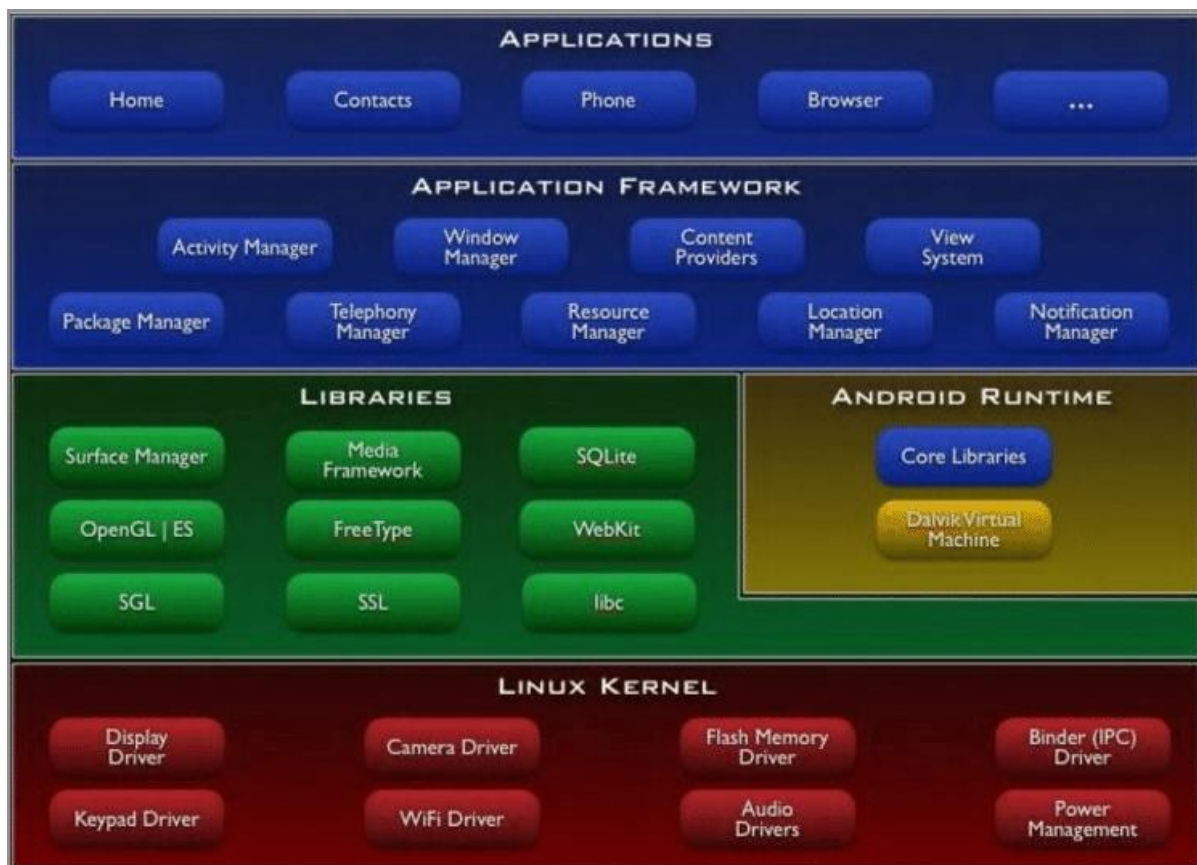

Figure 2: Interior Architecture and Operation

The diagram shows the components of the Android operating system. One of its most well-known features is applications (apps). Applications are usually developed in Java using the Android Software Development Kit, but other development tools are available for applications or extensions in C or C++, including the Native Development Kit. Moreover, by providing an open development platform, Android offers developers the ability to create extremely rich and innovative applications. Developers are free to leverage device hardware, access location information, run background services, set alarms, add notifications to the status bar, and much more. So, in April 2011, Google said it has about 100,000 Android apps installed. The Android operating system is used on smartphones, netbooks and tablets, including Dell Streak, Samsung Galaxy Tab, TV and other devices. And some research firms estimated that in the second quarter of 2009, Android accounted for 2.8% of worldwide smartphone shipments. By the 4th quarter of 2010, it reached 33% of the market and became the best selling smartphone platform.

[http://code.google.com/p/openintents/wiki/SensorSimulator].

- **iOS**

iOS is Apple's mobile operating system. Originally developed for the iphone, iOS can now also support other Apple devices such as itouch, ipad and Apple TV. Although it is derived from Mac OS X, iOS includes technologies that are only available on its own, such as Multi-Touch interface and accelerometer support, making it easy to use iPhone [http://en.wikipedia.org/wiki/History_of_Mac_OS_X].[6]

Another great feature of iOS is its numerous apps. According to the reference, iOS has more than 300,000 apps on Apple's App Store with over 10 billion downloads collectively. This can be attributed to the iOS software development kit (SDK), which contains the code, information, and tools people need to develop, test, run, debug, and tune apps for iOS. But installing apps on devices is only possible after paying iPhone Development fee [Buck, 2010]

❖ ANDROID VS IOS

Android is growing faster than iPhone. Its platform has seen rapid growth over the past two years, and the openness of the platform may explain this rapid growth. Android vs iPhone comparison can be made from different points of view, but the final result must be the same enemy from every point of view. Here we discuss some key features that make the difference between android and iPhone.

- **Language**

Google's android provides a customized java virtual machine and java bytecode interpreter that facilitates android to provide free services and makes android a java platform, thus providing a new development platform that encourages developers to build applications there using java programming, iPhone is a completely different approach to the development environment. The desktop Mac OS X offers a scaled-down version of Cocoa. iPhone only supports Objective-C language. Android's popularity is due to its open platform and availability of excellent developer tools. Java and Eclipse IDE are the main attractions that make Android the best choice for developers. iPhone is based on objective-C, which is difficult to use and the development platform is not properly defined. iPhone's development environment is more boring than android's. Almost all standard Java IO, network libraries are easily accessible.

- **Yield**

Performance is one of many factors that determine whether a platform will be successful. Performance comparisons depend on many factors, here I am discussing the performance of Android's JVM vs iPhone's Objective C. Android is a Java-based platform and uses a Java Virtual Machine (Dalvik) to run applications Java used to be a slow and cumbersome platform. Java has been optimized and now its performance is extremely fast. Dalvik has been

It has been further optimized for mobile devices, so now Android is one fast platform.

iPhone OS is written using Objective C, an object-oriented version of C that uses messages. There's a message passing system called objc_msgSend(), it's a critical piece of software for anything written for OS X on a Mac or iPhone.

- **Open vs. Close (Platform Approach)**

Apple offers unique marketing, a great user interface, and a closed, proprietary system with strong links between hardware and software; Google prefers open source approach to develop new applications.

iPhone does not offer background processing for third-party apps compared to Android. Much more open. You can create any type of application by taking advantage of any feature. This is one of the main features of the glowing android

[http://www.darkreading.com/privacy/google-android-vs apple-ios-the-mobile-a/240157894].

- **Synchronization**

iPhone users need to connect to computers to do any kind of syncing, but on android this can be done easily via Google account.

- **Application Publication Fees**

Because Apple provides a proprietary system, apps cannot be sold or multitasked without Apple's approval, and also the user has the freedom to copy the core apps' features. Both platforms take 30 percent of app revenue, but Android is free to sign up for, while Apple charges developers $99 per year. To publish their app in Apple Store, the developer has to pay $99 annually, on the other hand, android developer only needs to pay $25 for one-time registration and they can publish the same app in another app market. restriction for it.

- **Contents**

Content and information about iPhone on the Internet is not so much compared to Google's android. We can easily access all the content, source code and information about the Android platform whenever we want.

Android SDK is installed with all information, help guide and API references. It takes a few seconds to find information about our queries. The iPhone also provides many resources that help developers accomplish their tasks, but it takes a lot of time to do so.

- **Scanning**

Which platform is better for web browsing? The answer was given by researcher Neilsen. According to data collected by him and compiled by eMarketer, owners of Android phones are most likely to use the Internet functionality of their device.

[http://www.diffen.com/difference/Android_vs_iOS]. Ninety-two percent of Android users say they use their phone's Web connection, compared to 88 percent of iPhone owners. Both devices are well above the curve for smartphone owners overall, but the overall Net usage percentage is just 71.

- **Security**

There are some privileges on iPhone to restrict the addition of new software for users. Each application runs on a single UNIX kernel. If there is a problem caused by the running application, the entire system may be affected.

Whereas in android each application works independently. There are predefined permissions and permissions for each feature. So in terms of security, android is much better for users than iPhone.

- **Google's Advantage**

Another benefit of Android is that it takes advantage of Google maps, Google voice, Google documents and more.

❖ Table 4: Differences between Android and IOS

Attributes	Android	IOS
Developer	Google	Apple
OS Family	Linux	OS X, Unix
Widgets	Yes	No, except in NotificationCenter
Programmed in	C, C++, java	C, C++, objective-C
Messaging	Google Hangouts	iMessage
Internet browsing	Google Chrome (or Android Browser on older versions)	Mobile Safari
Source model	Open source	Closed, with open source components.
Video chat	Google Hangouts	Facetime

App store	Google Play – 1,000,000+ Apps. Other app stores like Amazon and Getjar also distribute Android apps.	Apple app store – 850,000+ Apps
Device manufacturer	Google, LG, Samsung, HTC, Sony, ASUS, and many more	Apple Inc

❖ SOLUTION

After a long introduction of the basic concept of Android and OIS, it is very difficult to predict what is ahead in the mobile market, they both look to the future and give us more progress in our mobile phones. Therefore, it is not to follow the trend when choosing a Smartphone, but to understand the differences between Android and IOS about their advantages and disadvantages, which should be important when buying a Smartphone.

We are not concerned with who the winner is, but which company's software products and services are in our favour.

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