



VARIOUS APPLICATION OF ANDROID OPERATING SYSTEM IN SOFTWARE ENVIRONMENT

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Abstract:

We Know that our Environment is full software day to day the various version is update in the environment, so it is necessary to the system user to update the version to stay in the environment. As Internet communication technologies are growing up. Web Services are rising up as a popular middleware technology used to integrate heterogeneous building automation system on Internet. Android Technology with web services has gained This paper present the various application and benifts of android operating system in the global environment.

Keywords: History of Android operating system, Android Version, Benefits, Security

INTRODUCTION:

Android is a mobile operating system designed to counter the problem of handling networks and the wireless devices. Various versions of this operating system have come into the market since its inception in 2008. There were two Pre-commercial Android release between 2007 and 2008 called Android Alpha and Beta. Android beta was released on 5 November 2007, a date popularly celebrated as Android's "birthday."

History of Android Operating Sytem

One of the most widely used mobile OS these days is **ANDROID**. **Android** is a software bunch comprising not only operating system but also middleware and key applications. Android Inc was founded in Palo Alto of California, U.S. by Andy Rubin, Rich miner, Nick sears and Chris White in 2003. Later Android Inc. was acquired by Google in 2005. After original release there have been number of updates in the original version of Android. Android is a mobile operating system developed by Google, based on the Linux kernel and designed primarily for touchscreen mobile devices such as smartphones and tablets. Android's user interface is mainly based on direct manipulation, using touch gestures that loosely correspond to real-world actions, such as swiping, tapping and pinching, to manipulate on-screen objects, along with a virtual keyboard for text input.

Version of Android Operating System:

Android 1.0: This was where the dream began, this was the first commercial version of Android and it was released in September 2008. It opened up the Android market and people started recognizing this new operating system. Also, the first commercially available Android device was the HTC Dream. The features of the operating system included a camera support, access to web email servers, supporting POP3, IMAP4, and SMTP. Gmail synchronization with the Gmail applications, calendar sync, contacts sync, Google maps, SMS, MMS, IM support, media player, YouTube player, Wi-Fi and Bluetooth support. Notifications also appear in the Status bar, with options to set ringtone.

Android 1.1: The Android 1.1 system image delivers an updated version of the framework API. As with the Android 1.0 API, the Android 1.1 API is assigned an integer identifier — 2 — that is stored in the system itself. This identifier, called the "API Level", allows the system to correctly determine whether an application is compatible with the system, prior to installing the application.

Android 1.5 Cupcake: cupcake brought in widget support, animated transitions when skipping through your desktops, the ability to automatically rotate the screen when you turn your phone and a stock boot animation.

Android 1.6 Donut In 2009 we had Cupcake's successor, nicknamed Donut. As you may have noticed, Google chose to advance through the alphabet with every major Android release, selecting a different confectionary for each one. Donut gave us improved search functionality, a speedier all-round experience, and support for super-sharp (at the time) 480x800 pixel screens.

Android 2.0 Éclair Android Eclair brought a number of important changes, hence the boost to version number 2.0. Personalisation was a key component, with the likes of live wallpapers and support for multiple desktops introduced.

Android 2.2 Froyo Froyo allowed Android users to control their phones without touching them, using voice typing and search. You could also now install apps on a memory card, which was a massive relief as most phones packed a measly 4 to 8GB of storage space.

Android 2.3 Gingerbread Selfie camera support paved the way for endless Facebook glamour shots, while improved performance meant Android was slicker than ever. Gingerbread also added NFC, gyroscope and barometer support.

Android 3.0 Honeycomb

Honeycomb stands out in Android history as the only version developed specifically for tablets. Interface elements like the virtual keyboard were optimised for bigger screens and you had support for multi-core processors, which soon became the norm.

Android 4.0 Ice Cream Sandwich: Ice Cream Sandwich hit phones in 2011, bringing an all-new look and feel to Android. You could also now close apps with a quick swipe, shoot 1080p video and unlock your phone with your face, where supported.

Android 4.1 to 4.3 Jelly Bean: Android Jelly Bean made Google's OS more responsive than ever, improving search functionality and introducing the ability to share files with your friends using Android Beam.

Android 4.4 KitKat

Android KitKat introduced the 'OK Google' voice command for starting Google Now, as well as better message management, Emoji support and improved multi-tasking.

Android 5.0 Lollipop

Android 5.0 Lollipop hit our phones in 2014 and brought multiple profiles on one device, the 'no interruptions' feature to get some peace and an all-new notifications bar. You could also now unlock your phone with a trusted Bluetooth device.

Android 6.0 Marshmallow: was unveiled by Google in September 2015, improving battery life and adding cool new features like Now on Tap and fingerprint sensor support.

Android 7.0 Nougat features came first and the public helped pick the name, which was made official at the end of June, 2016. As well as improving general performance and battery management thanks to a feature called Doze, Nougat also brought handy features like native split-screen multitasking to the stock Android experience.

Android Security:

Android has security features built into the operating system that significantly reduce the frequency and impact of application security issues. The system is designed so you can typically build your apps with default system and file permissions and avoid difficult decisions about security.

Some of the core security features that help you build secure apps include:

1. The Android Application Sandbox, which isolates your app data and code execution from other apps.
2. An application framework with robust implementations of common security functionality such as cryptography, permissions, and secure IPC.
3. Technologies like ASLR, NX, ProPolice, safe_iop, OpenBSD dmalloc, OpenBSD calloc, and Linux mmap_min_addr to mitigate risks associated with common memory management errors.
4. An encrypted filesystem that can be enabled to protect data on lost or stolen devices.
5. User-granted permissions to restrict access to system features and user data.
6. Application-defined permissions to control application data on a per-app basis.

1.Low Investment

Android is an open source platform and the software development kit (SDK) is freely available to developers. Further, being a JavaScript based platform, it is easy to master and execute. There are three stages of development on Android –

1. Application development
2. App testing
3. Deployment to Android App Store

Further, with Material Design, [Android app developers](#) can add intricate details at a very low cost giving the best ROI.

2.BYOD Preference

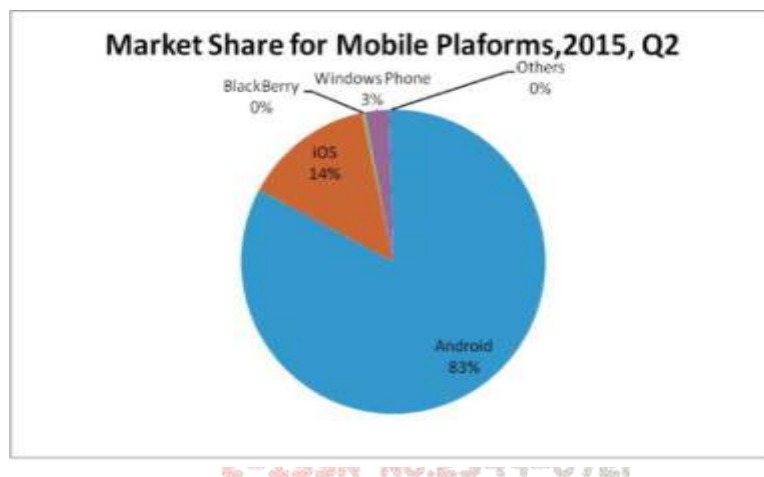


Figure 1 Source: IDC, Aug, 2015 (<http://www.idc.com/prodserv/smartphone-os-market-share.jsp>)

From the pie diagram above, the market share of Android becomes quite evident. For companies that are adopting bring your own device (BYOD) policy, it is feasible to opt for Android as the enterprise app development platform because Android is available on more variety of devices to users of all economic groups.

3.Easy customization

Android offers versatility with easy customization options, thus enabling developers to create applications with diverse functionalities. Whether it is complex technical customization or web application integration, Android provides ample space for executing customizations. The platform is designed to accommodate the varying requirements of business. It offers flexibility to integrate communication tools, data management functions, and multimedia tools with easy updates.

4. Security and Distribution

Google rolled out major security fixes in 2012 across the Android platform, making it a highly secure platform. It further pushed an address space layout customization making it extremely difficult for malware to locate data structure for executing codes. Further, an automated system pushes periodic notification to users to decrypt their devices. For distribution, Android apps can be marketed via various marketing channels and can be easily found in the marketplace

5. Wearable Devices

Wearable device is fast gaining traction amongst businesses for the quick communication that can be pushed via smartwatch notifications. As per statistics provided by bolston-technology.com 54% enterprises already have brought your own wearable (BYOW) policy and 40% are planning to adopt it soon. If your company is designing its mobile strategy and considering a single stable platform to start development with, Android app development is a feasible option. The platform gives width for the applications to grow and expand as per the needs of the company with easy feature integration. Industry average to develop and launch an application on Android platform is 8 to 18 weeks based on the study by fliplet.com). if you want to implement a mobile strategy in the shortest span, Android will be the most recommended platform for its market perpetuation and ease in development.

CONCLUSION:

From the above paper presentation we discuss the various version of android application and its benefits. Moving forward, we foresee ded and our analysis specifications as enabling technologies that will open new doors for application certification. However, the in-tegration of these technologies into an application certification process requires overcoming logistical and technical challenges. Our future work will consider these challenges, and broaden our analysis to new areas, including application installation, malicious JNI, and phishing

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