Android in the Classroom

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In 2017 99% of new smartphones and tablets ran either Android or iOS[1] nudging out big name perennials such as Blackberry, Microsoft, Nokia. Mobile internet has become a two horse race.

In my never ending and expensive gadget quest to aid my teaching, one of the latest Android tablet devices happened to fall into my hands - an event preceded by me casually walking into Bic Camera. Such antics may seem contrary to my iPad fan boy image but Apple, in my opinion has lost important points in one key area.

This is a brief summary of my efforts of using an Android tablet in a classroom environment.

Apple vs Android Recap

	Android	iOS
Owner	Google	Apple
First device	September 2008	June 2007
US market share (devices)*	63%	35%
Percentage of devices updated to the latest OS	0.3% [3]	52% [4]
App Store profits (2016) [5]	$17 Billion	$34 Billion

Market share figures can be deceptive. The iPhone 7 single handedly captured 79% of the global smartphone market in 2016[2] and yet Android has a world user base of around 90% mainly due to the proliferation of cheap devices - clearly demonstrating the ultimate strategic difference between Apple and Google.

File System

At the heart of Android is Linux. Depending on the distro (variation) the linux code has varying degrees of transparency (secrecy). In reality, there are only a handful of distros that are 100% open-source-anyone-can-see. The code for Android, on the other hand, is 100% open and can be downloaded by anyone. As long as you steer clear of Google apps and services (such as Chrome) you're free to use the code without paying Google a penny[6].

Which in turn leads us to the biggest benefit over Apple: free access to the file system. Even if a device doesn't have an SD memory card slot, you are free to copy files using a standard USB cable in mass storage mode. As a teacher, I have folders and folders of files that I just want to copy to my device without Apple's 'walled garden' getting in the way.

App Store

As a developer for the iOS App Store since it's opening in July, 2008[7] I've been on the receiving end of Apple's various course changes as the market they defined slowly began showing them the way. But, what hasn't changed is that this is a closed wall ecosystem by invitation only. Even as a paid member, I have no access to iOS core code and if I want to release anything other than a simple app I

should be prepared to lose countless hours preparing provisioning profiles, certificates, removing private API calls and obeying the copious 'guidelines'.

While many have complained about this totalitarian approach it has allowed Apple to keep the standards high. After spending time with Google Play (Android's app store) it's clear that Apple's apps (excluding the big names) are superior, more stable, contain less ads and are updated more frequently.

One of the reasons that professional programmers are less enticed by the Google store may be due to the fact that users spend roughly twice as much in the Apple App Store[8].

Security

If you're using an Android device that is running an OS less than version 6 ('Marshmallow') then you need to stop. Seriously. Apps can potentially have a worrying amount of access to your hardware above and beyond the permissions you give when first installing an app. Such devices should be prohibited from schools.

If you're using OS version 6 or above, you're as safe as you need to be but as someone once said, the biggest problem with computers is what's in-between the seat and the screen. Users setting passwords to 123456 (which was the most popular password of 2017[9]) is the more terrifying reality.

Fragmentation

Android is free which allows large scale manufactures of cheap low spec phones and tablets to proliferate the market. Due to cheap, low powered hardware, OS upgrade possibilities are limited which when paired with the fact that users want to save money by not upgrading to newer devices, leaves millions of devices running old software with possible security holes that will never ever be fixed. This in turn gives Android a weak image on security. Apple's closed garden with only a small amount of devices avoids this issue.

As long you have a recent mid/high end device from a reputable manufacturer, you can be assured of a reasonable lifespan of updates.

Conclusion

One of the reasons Microsoft's various forays into hardware and compatible app stores failed to take root is that they failed to realise that a device is only as good as it's eco-system, more accurately, apps. Developers simply failed to migrate. The standout point that has made the iPad a success for me in the classroom is the availability of high quality apps. This, to me, is what everything depends on.

While I like my Samsung S2 Android tablet, Android's Google Play app flush with advertisement laden, low quality software was overwhelming. Which leads me to the sad conclusion that although current Android hardware is now often superior to Apple's offerings, the open source spring board that helped bring Android to the masses is the very thing that prevents them from attaining higher quality.

Google needs to do the very thing they promised they would never do: lay down the law and assert their authority over how Android is used by manufacturers and what app programmers can and cannot do.