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# Android apps

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*The development of “apps” for the iPod/iPad/iPhone family, and subsequently for Android and Microsoft Windows 8 devices, represents the most recent step in the commodification of software. Apps are low-priced items in a market where no one brand dominates. Most of them are under constant development, and update automatically on the owner’s device. Marketing is based largely on reputation. This in turn depends largely on ratings and reviews by existing users. Apps exemplify the modern trend towards provision of software as a service rather than a product.*

## STEPS TO COMMODIFICATION

In 1981 IBM, anxious to enter the lucrative personal computer market, made the decision to build and sell a PC constructed from commercially available parts.<sup>1</sup> A small software company called Microsoft, seeing the potential in this, struck a deal: it would supply an operating system for the IBM PC, provided it was allowed to sell that system to other manufacturers producing similar devices. The effect of this was phenomenal: within a year IBM “clones” were selling for half the price of the originals, branded manufacturers of other PCs were going out of business, and Microsoft was on its way to dominance of the world software market. Personal computers had become commodities in a free market; it no longer mattered who made them or where.

Having been instrumental in commoditising hardware, and seen the price drop that resulted, it is not surprising that Microsoft -- and other software companies -- have since done their best to prevent the same thing happening to them. The Microsoft and Adobe brands, for instance, are widely recognised and highly valuable; if it becomes widely known that there are cheap and free alternatives, most of that value will disappear. Microsoft in particular has gone to desperate lengths, making radical changes to each new version of Windows that allow it to be described as “new and improved”, like washing powder. But customers are waking up to these tactics, and there is a growing interest in free and cheap software from small independent developers for whom quality is more important than branding.

The most recent movements in this direction have been in the field of software for portable devices – mobile phones, tablet computers, iPods and the like. These comprise a new market, which the major software companies have been slow to enter. They are used in a much wider range of situations than PCs, and require a much wider range of customised applications -- “apps”. Since these devices are intended to be used online, they usually have immediate access to updates and cloud-stored information. And they are supported in their efforts by well-funded sponsors – Apple and Google in particular – who have little interest in producing and selling branded software of their own. Apple wants iPhone customers, Google wants advertising targets; and they both feel the way to achieve this is by providing a marketplace where customers can buy the software they want at a price they can afford. This article focuses on Google and its Android operating system, but similar observations can be made about Apple and iTunes.

## ANDROID: GOOGLE’S OPERATING SYSTEM

Android Inc was a company devoted to developing operating systems for hand-held computing devices. In 2005 it was bought by Google, and “Android” became the name for that software.<sup>2</sup> Android is a variant of Linux (as is the Macintosh system OSX, released in 2002), and Google has

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All websites viewed in April 2013.

<sup>1</sup> Wikipedia, “IBM Personal Computer”, [http://en.wikipedia.org/wiki/IBM\\_Personal\\_Computer](http://en.wikipedia.org/wiki/IBM_Personal_Computer).

<sup>2</sup> Wikipedia, “Android (operating system)”, [http://en.wikipedia.org/wiki/Android\\_\(operating\\_system\)](http://en.wikipedia.org/wiki/Android_(operating_system)).

developed it as an open system, with full technical details available to the public. This means that anyone can develop and market Android programs. The first Android devices became available in 2008. Android devices are currently divided more or less evenly into tablets and “smart” phones, including the hybrid devices sometimes referred to as “phablets”.

Android itself has undergone steady and sometimes radical development. The latest version at the time of writing is 4.2, nicknamed Jelly Bean, though most devices currently on sale are running 4.0, Ice Cream Sandwich, or earlier versions. Older devices can be upgraded to new versions of Android in theory, though comments on user forums indicate this does not always work in practice. Android, as sold, comes with a very limited number of applications – “apps” – and the intention is that users should – buy and – install their own apps as required.

## SETTING UP AN ANDROID DEVICE

Android devices are battery-powered and will require charging before they can be used. Most are touchscreen-driven. They normally contain a slot for a micro SD memory card, and those with phone capabilities will also take a standard phone SIM card. Earlier devices require an SD card for storing apps, but newer devices have sufficient memory to do this on-board, making the use of the card optional. Nearly all devices now include speakers, a microphone, a headphone socket, and one or more digital cameras. By default, Android devices open with a “lock” screen which the user needs to press or slide to proceed. Personalised security systems can be set up to prevent unauthorised use.

To use a device online the user must set up a network connection – usually via WiFi – and log into, or create, a Google account to register it with. Multiple devices can be registered to the same account. Once connected the device will be able to access the internet, browse web pages and handle emails. Text is normally entered via an on-screen keyboard, but a standard USB keyboard can be attached if required.

A few basic apps will be pre-installed; these will vary according to the supplier, but at least one should be the Google Play app (called “Android Market” in earlier versions), which links users to their main source of apps, Google itself. Once a device has been registered, users can access the Google Play site from the device, or use a PC with a web browser to log on to the Google Play website, and “push” apps to the device from there. The second option is quicker when there are many apps to transfer.

## GOOGLE PLAY AND OTHER APP STORES

The Google Play Store<sup>3</sup> provides a distribution hub for Android compatible software. This includes free and commercial apps, along with ebooks, emagazines and videos. Apps are divided into categories, for instance “Library and Demo”, “Education” and “Transport”, but since these are usually assigned by the app developers, they may not be consistent or even accurate. Google Play keeps track of each user’s downloads, so that if your system crashes and you lose the apps, you can easily locate and re-install them. A purchased app can be re-installed, or installed on multiple devices, for no additional cost. Not all apps are compatible with all devices; for instance, an app that uses GPS data to provide a different product may only be installable on a GPS-equipped device.

Free apps can be downloaded and installed by anyone; purchasing apps requires the user to set up a Google account with access to credit card details (PayPal cannot be used). There is normally a refund “window” of 15 minutes after purchase, during which an app can be uninstalled for a full refund. Paid app prices are normally in the low single figures (in \$A), although they can go higher. Surveys looking for the most expensive apps have found some listed at over \$200, but several of these exist for the sole purpose of demonstrating that you can afford to pay for them. Many free apps are funded by selling pop-up advertising space on the screen. A high proportion of them also offer paid versions with extra features and no advertising.

The number of apps is astronomical, and growing rapidly, so it is rare to have a software requirement for which there are not two or more apps available. The main criteria for selecting

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<sup>3</sup> Google Play, <https://play.google.com/store?hl=en>.

between them are the developer's blurb, the popularity of the app as shown on a time chart, and the ratings and reviews provided by users. Competition is fierce, so developers do their best to get users to submit reviews, often displaying hints or reminders on screen while the app is running. Ratings from the reviewers (zero to five stars) are averaged to give an overall score for the app. Where there are more reviews than will fit on the page, Google displays a representative sample of recent reviews, including the best and the worst; users can expand the display to see more if desired.

Google Play is not the only game in town. Amazon has an app store of its own,<sup>4</sup> where purchases can be made through the user's Amazon account, and the browser Opera also runs its own app store.<sup>5</sup> Prices tend to be similar unless a store is offering discounts or other special deals. For a comprehensive list of distributors, search the web for "Android app stores".

Other websites act as intermediaries, grouping apps and providing recommendations. For example, the Go Development Team (GDT), which produces popular utility apps for Android devices, provides details of its software and download links on its own website.<sup>6</sup>

## WRITING AND SELLING APPS

Every generation has its gold rush. There was a brief period when writing and selling Android apps looked like a sure money-spinner; but the obvious niches have all been taken by now, and many would-be developers have discovered that it is hard work after all. But there is still scope for creating new apps that do a useful job, and we should be grateful that so many people are prepared to give it a try.

"Native" Android apps are written in the Java language, using special code libraries related to the hardware functions of an Android device – swivelling screen view, vibrate, touchscreen etc. They can be created and debugged on a PC. Most developers also use an integrated development environment (IDE) program like Eclipse or Oxygen, which includes a Java compiler. They may also use an Android Software Development Kit (SDK) for debugging, including an Android emulator – this can be downloaded from the Android Developers site.<sup>7</sup>

Java is not user-friendly, so some companies have developed "translators" that create Java files from programs in more popular languages like Python and Visual Basic. However, Android developers still need fairly advanced programming skills. Introductory material for app programmers can be found on the web, including a one-page overview from SitePoint<sup>8</sup> called "Writing Your First Android App".

Users who want to make an app without programming can use a join-the-dots method like that on the Andromo website.<sup>9</sup> Andromo allows users to assemble various functions – visiting websites, playing music or videos, showing images, sending email etc – into a simple button-operated app, the code for which is then downloaded to the user's computer. As with hand-coded apps, this takes the form of a compiled Java binary file with an APK extension. Andromo is free to try, but compiling apps for distribution requires a paid account.

Once created, an app can be uploaded to Google Play or any other app store. In order to reduce the amount of junk submitted, Google requires a one-off registration payment of US\$25 from developers. Apps that are offensive or deceptive can be removed from the store if users complain.

<sup>4</sup> Amazon.com, Appstore for Android, <http://www.amazon.com/mobile-apps/b?ie=UTF8&node=2350149011>.

<sup>5</sup> New & the Best Android Applications | Great Android Games | Buy Android Apps or Download It, [http://apps.opera.com/en\\_au](http://apps.opera.com/en_au).

<sup>6</sup> GO Apps Official website—Free download GO Launcher, GO SMS, GO Weather, GO Contacts, <http://goforandroid.com/GDTEn/index.aspx>.

<sup>7</sup> Android Emulator | Android Developers, <http://developer.android.com/tools/help/emulator.html>.

<sup>8</sup> SitePoint, Writing Your First Android App, <http://www.sitepoint.com/writing-your-first-android-app-2>.

<sup>9</sup> Andromo, Make an Android App. No Coding Required, <http://andromo.com>.

## INSTALLING, GROUPING AND RUNNING APPS

Apps downloaded from Google Play or other app stores will install automatically. Apps from other sources arrive on the Android device as APK files, and have to be activated with an installer app. One installer is provided with the device, and others are available from Google Play. Installation will normally create an icon, which will appear on the current screen. Tapping the icon will cause the app to run.

All open apps are “stacked” in a graphic list which can be displayed on the home screen. The user can return to any open app by tapping the list item showing that app.

The interface through which the user runs apps is known as a “launcher”. Android comes with its own default launcher, but there are many others available. Most of these work on a “sliding panel” metaphor, where related icons appear together on one of several panels which slide across the screen in sequence. The user can also access a complete set of icons on a single screen. Icons can be moved between panels or removed altogether. Unwanted apps can be uninstalled via the Settings control panel.

## BACKING UP AND UPDATING APPS

Apps are software, and as such they require backing up. There are many backup apps available, which generally work by copying apps on to the SD card, or into cloud storage, as they are installed or updated. Personally, I use and recommend App Backup and Restore from InfoLife.<sup>10</sup>

Apps are often updated on the fly, and it is not unusual to open an app you have not used for a few days and find that it changed its layout or gained some new features. Automatic updating normally occurs whenever the device is switched on and connected to the internet, but this feature can be switched off, allowing users to update manually at a time of their choosing.

## FAVOURITE APPS

I have listed some of my favourite apps here. All these can be found in the Google Play Store. As ever, you should evaluate your own requirements and your current situation before making any decision. Android is all about customisation.

- Launcher – GO Launcher
- E-books – Mantano Reader Premium, Calibre Companion, Kindle for Android
- File management – WiFi File Transfer, ES File Explorer
- Internet – CMarksLite, Chrome (browser), Gmail
- Utilities – GO Keyboard, App Backup and Restore, AVG Antivirus
- Media – Pattern Wallpaper, Gradient Wallpaper
- Navigation – MapDroyd, Google Earth.

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<sup>10</sup> Google, App Backup & Restore – Android Apps on Google Play, [https://play.google.com/store/apps/details?id=mobi.infolife.appbackup&feature=search\\_result#?t=W251bGwsMSwxLDI3s1m1vYmkuaW5mb2xpZmUuYXh3YmFja3Vw!10](https://play.google.com/store/apps/details?id=mobi.infolife.appbackup&feature=search_result#?t=W251bGwsMSwxLDI3s1m1vYmkuaW5mb2xpZmUuYXh3YmFja3Vw!10).