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Russell Holly

# Taking Your Android Tablets to the Max



Russell Holly

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## **Taking Your Android Tablets to the Max**

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# About the Author



**Russell Holly** has worked across the IT industry for the last 10 years, gaining experience in server administration, networking, and mobile products. This experience has propelled him into journalism, where he is now considered one of the most knowledgeable in his field on the topic of Android. Russell uses this knowledge to educate and inform in as many places as he can find.

When he's not out looking for the next gadget, Russell works from home with his three children and his wife, Cassandra.

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# About the Technical Reviewer

**Aaron Kasten** served as a small and medium business IT consultant for the past 10 years in Texas. In 2008, after a year of planning, Aaron launched AndroidSWAG, an online merchandise company for Android enthusiasts. He also organizes the largest gathering of Android fans and developers, the Big Android BBQ, every October in Texas. He is currently using an HTC Sensation and Samsung Galaxy Tab 10.1.

When not providing IT support or playing with the latest gadgets and phones, Aaron enjoys spending time with family and friends and traveling. He lives in North Texas with his wife and five-pound Chihuahua, Ali.

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# Introduction

Silently, and without warning, the Android operating system has quickly dominated the mobile ecosystem. This operating system exists in many forms, across many devices, and offers a rich selection of powerful features that could completely change how you accomplish tasks throughout your day. If you're looking for a tablet or have already purchased a tablet, this book will help you navigate through the new world of Android.

## Who This Book Is For

If you are reading this book, the chances are good that either you've just gotten an Android tablet or you are hoping to pick the right one for you. You may not be absolutely sure of what the potential of this tablet is or exactly how useful it can be. This book is for users of every skill level to be able to get the most out of any Android tablet.

## How This Book Is Structured

This book covers the basics of using an Android tablet, more advanced tricks, and how to modify the look and feel of your tablet.

You'll start off by mastering the basics of navigating your tablet and learning about the benefits of a Google account. Once you've gotten the tablet set up, the book takes you through the different kinds of tasks you are likely to want to accomplish on your tablet, such as sending an e-mail or starting a video chat. Next, you will travel across the Google and Amazon apps that allow you to watch movies, listen to music, and install applications written by developers all around the world.

By the end of the book, you will have the tools necessary to make your tablet a mobile office, a portable home theater system, or the biggest library of books in the world. You'll be able to customize the experience to your personal tastes, and if you're brave enough, you'll be able to try your hand at more serious modifications.

## Contacting the Author

Should you have any questions or comments—or even spot a mistake you think we should know about—you can contact the author at [thatrussellholly@gmail.com](mailto:thatrussellholly@gmail.com).

# Why Android? Which Android?

If you are picking up this book, there stands a good chance you have heard of Android before, and well you should. To see the explosive growth of the Android operating system since it was released, despite never really becoming a household name, is significant. To know that in such a short time Android has surpassed Apple's iOS, on devices like the iPhone and iPad, is more than remarkable. So, yes, you have likely heard of Android. Maybe you've heard of it as a "Droid" or as a Samsung, Motorola, or HTC. You are probably looking for a way to incorporate Android into your daily life. Maybe you are tired of lugging your big laptop everywhere you go. Maybe your smartphone screen is just too small to do everything you need it to do. Reading e-mail, browsing the Web, whatever you may be doing—you've decided it might be time for a tablet.

Android tablets do not fit a specific form factor, personality type, or general purpose. There is an Android tablet out there for every kind of person. When you are given an Android tablet, you are given a blank slate with nearly unlimited potential. Your Android tablet can be as complicated or as simple as you choose it to be. An Android tablet can be little more than a storage device for your library of books, or it can be your mobile command center for holding web conferences, playing video games, or even gazing at the stars. When choosing to buy a tablet, you choose an Android tablet because it's the device for you.

This book will offer you a top-to-bottom guide to choosing one of the many Android tablets. You will get some help in choosing which device would be best for you, take a look at the best apps for your needs, and even spend some time optimizing your tablet to get the most out of it. *Taking Your Android Tablet to the Max!* is written for every kind of person interested in an Android tablet. It doesn't matter if you are a tech god, a college student, a soccer mom, or a business professional, this book will help you make an educated decision and get the most out of your next device.

*Taking Your Android Tablet to the Max!* covers everything from selecting the device that is best for you to offering maintenance tricks, preserving the battery life, and making sure your tablet lasts. We'll go into the depths of "rooting" your Android tablet and how

to not only enable new and exciting features but get the tools you need to make sure your Android tablet is always on the bleeding edge of the latest and greatest from Google. We'll include brief tutorials on utilizing Google's developer tools and show you everything you will need to make sure all your friends, co-workers, and neighbors will be ready to go get one for themselves. Add *Taking Your Android Tablet to the Max!* to your bookshelf, and get ready to get the most out of your tablet.

## Android: A Brief History

Everyone knows Android as “the Google OS,” but that's not entirely true. Android, Inc., was once its own company, and Android was its brainchild. In 2003, the startup had a plan to create a smarter phone that was aware of a user's location and preferences. At the time, it was something that technology simply wasn't doing, though today location-based services are a global trend.

Android is a perfect example of what happens when innovators put their heads together. As a small startup, however, Android realized it would be much slower in getting its change to the world. The company needed a powerful catalyst. We can think of no company that is better at taking unique ideas and putting them into daily use than Google. In 2005, when Android, Inc., was only 22 months old, it was bought by Google. Google was not quite ready to launch something to the masses. There was a bigger plan in the works, something that would require the resources of many companies in order to solve some of the more fundamental problems in the phone world.

## The Open Handset Alliance

The cell phone world was kind of a mess in 2005. Every cell phone manufacturer had a different plug to charge their phones, and most of them would change with the release of a new device from that manufacturer. The must-have feature on a phone was a camera, and e-mail was a feature that most did not have. If there was extra content to be had on your device, it was controlled by the carrier. Ringtones, wallpapers, and maybe a couple of games that worked only on your model phone—that was basically it. 3G was still relatively new in most of the United States, and our phones were really just that, phones.

When Google bought Android, Inc., it was with the intent to make it easy for you to have the Internet at your fingertips at all time. Google being primarily a search engine, the company stood to earn a lot of money making it so you could always search for something you were looking for. Still, there were problems. To be successful, Google couldn't just offer these features on a single device, and it certainly couldn't offer them on a single carrier. Android needed to be available to as many people as possible, and so Google reached out to companies of all types to form the Open Handset Alliance (OHA). The OHA was formed in late 2007 with 34 companies from around the world. These were companies of all types, ranging from carriers like T-Mobile and Sprint, software companies like PacketVideo and eBay, device manufacturers like Motorola and HTC, and chipset manufacturers such as Intel and nVidia. The goal was for each of

these companies to come together and collaborate on solutions that everyone in the OHA would directly benefit from.

Huge companies from all over the world putting their combined knowledge and skill into a single project could only result in both direct and indirect benefits across the world. For example, look at most feature phone and smartphones today. You will see that 90 percent of them use the same charging socket to power their devices, and many of those also double as the method to connect the device to your computer. It's only through collaborations on this scale that we could see such a change.

Google wasn't satisfied with a mere 34 companies, either. The Open Handset Alliance grows bigger still even today, with more than 70 companies involved. Collaboration on this scale needed to be more than just companies communicating. The collaboration needed to be unfettered by red tape and proprietary ownership. In the spirit of this collaboration, everything that comes from the Open Handset Alliance is designed to be open source.

## WHAT IS OPEN SOURCE?

There are many ways to describe open source. The concept was originally designed so that communities of programmers could collaborate quickly and efficiently. Anything that was generated could simply be shared with anyone involved with the project, and when the project is published for use, the code that was used to create the project becomes publicly available for anyone else to use and help.

Basically, anything that is open source is published so that someone with the skills needed is able to improve on that code, allowing an open source project to continually grow outside of the community that originally created the idea.

## THE ANDROID OPEN SOURCE PROJECT

In the true spirit of open source, Google maintains a massive web site specifically for anyone who wants to download and build their own Android; it also offers a submission system for developers. When a developer comes up with a new feature for Android, the developer has the ability to submit their change to Google. This huge collection of change submissions is moderated full-time by Google employees, and features that meet their standards are added into the next version of Android.

This method of growth, combined with Google's own team of programmers, allows for new features to be thought up, written, and implemented in an incredibly short amount of time. As if this download and submission system weren't enough, the Community section of the web site offers a combination of ways to communicate with other developers, be it via forum, Google Group, mailing list, or IRC. This collaborative effort ensures that even half-baked ideas are brought to fruition and guarantees that Android is always on the bleeding edge, ready for that "next big thing." If you are interested in joining the Android developer community, head to <http://source.android.com>.

## ANDY, THE ANDROID “MASCOT”

Since the Android operating system can be manipulated by anyone, it’s not always going to look quite the same on every device. One of the quick, whimsical things that was done to fix this was to give Android an icon that would help it stand out. Amid many of the devices now running Android, you will see Andy, the little green robot (as shown in Figure 1–1). It’s been given several names, referenced on the Google campus as the “bugdroid” and “Andy.” The icon has been used in several places within the operating system, even riding a skateboard in the bootloader.

**NOTE:** The bootloader is an internal part of the operating system that is responsible for loading Android in the Dalvik Virtual Machine. This is covered in greater detail in Chapter 12.



**Figure 1–1.** *Android icon: the bugdroid*

Andy has been seen on many devices and has developed a following that rivals the operating system itself. There are countless web sites with memorabilia like stickers and decals with the character, while more in-depth web sites offer everything from T-shirts and plushies of the character. In 2009 a large group of Android fans gathered in Austin, Texas, for an Android-focused get-together, a celebration that is now carried out every year, with an audience in the thousands. While Google does sell its own licensed shirts and accessories with the little green robot on them, the fan-made items from beanies to lanyards and even action figures are in much greater demand.

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## The T-Mobile G1

In October 2008, five whole years after Android's conception but only a year after the formation of the Open Handset Alliance, the first Android device was born. In a massive collaboration, the T-Mobile G1 (shown in Figure 1-2) was released first in the United States, and then around the world by early 2009. The device was widely seen as Google's response to Apple's iPhone, which was first released in 2007. The G1 offered a physical keyboard that was hidden under the screen until slid out for use. The hinge mechanism that slid the screen away to reveal the keyboard was innovative and was the first of a long list of future devices that began to use similar technology. The G1 was the original Android device and brought with it the desire for companies all around the world to incorporate Android into their device offerings.



**Figure 1-2.** *The T-Mobile G1*

## The Motorola Droid

True to Google's original goal, each of the U.S. carriers and many more around the world soon had plans to offer Android in their line-up. T-Mobile, which already had plans to release four more Android phones in 2009, was ahead of Sprint and AT&T, which had quickly adopted their own strategies for Android deployment. Verizon was the last to the table but had planned a much bigger dive into Android once they decided to join in.

Enter Motorola, a founding member of the Open Handset Alliance, which had already released the Motorola Cliq to T-Mobile. Motorola entered into a partnership with Verizon to help shape Android's explosively popular future. Motorola, which had not had a truly successful phone since the RAZR in 2005, was rapidly approaching bankruptcy and



needed a hit. In what seemed like a last-ditch effort to keep the company afloat, Verizon and Motorola released the Motorola Droid in November 2009. The Droid was released exclusively with the latest version of the Android operating system, and its name utilized a trademark by LucasFilm, the owners of the *Star Wars* series.

The Droid was greeted with explosive sales and was one of the driving forces behind the more than 900 percent growth Android saw in 2009 over 2008. Today, Motorola remains the manufacturer of one of the most popular line of Android devices, going so far as to release multiple sequels to the Droid line. Today, the Droid line is home to seven different phones, all exclusive to Verizon.

## The Google Nexus One

To encourage the development of apps in Android, Google has taken several steps along the way to encourage developers to make bigger, better, and more feature-rich apps. Arguably the most significant step taken by Google was the release of the Nexus One (shown in Figure 1–3) and the start of its Nexus line of devices. The original intent of the Nexus One was twofold. Google wanted to offer a device that was free from the carrier. It wanted a device you could purchase from Google and add to your network of choice, without being stuck in a contract or having to follow the carrier's terms of service regarding device policies. The device was also very easy for developers to test applications on, offering a powerful device to ensure that it would run on all Android phones. Additionally, when an update was available to the Android operating system, it would be released to the Nexus line first to ensure developers had time to make any adjustments or to add new features to their apps.



**Figure 1–3.** *The Nexus One and Nexus S*

**NOTE:** The Nexus line of phones all run Android as though it was compiled via the Android Open Source Project. It's commonly known as "Stock Android" or "the Google Experience." The second part of this chapter will cover more on the "flavors of Android."

To date, there has not yet been a "Nexus" tablet. Google has collaborated with many different companies to bring its devices to the market but nothing with the Nexus branding like its phones. If Google does ever decide to release a Nexus tablet, it will be like its phones in that it will come to market with the latest version of Android, available only to that device before updates are released to the other tablets.

## The iPad

By 2010, it was clear that the cell phone market was dominated by the choice between the iPhone on AT&T or any of the now dozens of Android-powered devices in all shapes and sizes across every U.S. network and dozens of other networks around the world. The availability and options alone made it easy to see why Android was so quickly gaining on the bar Apple had set. The battle for market share was getting closer and closer, when in early 2010 Apple changed things up a bit and moved the iPhone onto the big screen.

The iPad (shown in Figure 1-4) has been hailed as a revolutionary device, accomplishing what no one before had been able to do. It combined the functionality of its already immensely popular smartphone onto a 10-inch screen, giving its audience the ability to not only enjoy their favorite apps but also be extremely productive. The concept of a tablet was not new. Tablet computers had been tried several times in the past, running Windows, Linux, or even much earlier the Apple Newton tablet. The problem in the past was that the software really did not support the design. There was no touch-specific design to the desktop operating systems we had all been used to using. So, now the Apple tablet was born; it would only make sense for Android to respond in the same fashion as it had in the smartphone world.



**Figure 1–4.** *The Apple iPad*

Android tablets offer the same functionality that an Android phone offers, just like an iPad’s relationship to an iPhone. The critical difference between the two tablets’ operating systems is the way apps interact between devices. With every Android device, logging into the Play Store with your account grants you access to any app you have paid for. When you install that app, it will function the same way on your tablet as it did on your phone. This is not the case on the iPad. You must purchase an “iPad-specific” app that supports the larger screen. If you install an app that was meant for an iPhone, it will only take up as much space on your screen as it would on an iPhone.

## Which Android Tablet Is for Me?

Just like Android phones, Android tablets come in all shapes and sizes, designed for all kinds of different kinds of users. What’s important when considering your Android tablet is to first understand what you want to do with it. Are you interested in doing a lot of reading? Will you be typing a lot, say for schoolwork or at the office? Are you the kind of person who plays a lot of video games? Will your tablet live in your living room and control your home theater? Would you take your tablet with you everywhere you go? Your tablet should be customized for your life and your needs, you shouldn’t have to teach yourself how to be comfortable with something else.

## Screen Type

Arguably the most important part of your Android tablet is the screen. It doesn't really matter what kind of processor you have or how much memory it has if you are not comfortable using your screen. If you can't read the text, if you can't easily control your apps because the screen isn't what you need, what good is it? It's all about how you use the device.

- *Capacitive touchscreen*: This is currently the most common kind of screen found in devices like smartphones and tablets. These screens require the touch of a finger in order to control the device and are made of either glass or special plastics. A capacitive screen will increase the price of a device.
- *Resistive touchscreen*: These types of screens are commonly found on “budget tablets” or screens used in fast-food restaurants. They are much cheaper to make than capacitive screens and are much less accurate. Screens like this will not be good to play games on but are great if you have fingernails or if you wear gloves a lot because they do not require the touch of a finger. Devices like these are commonly sold with a small plastic stylus to make them easier to use.
- *OLED display*: This type of display will show you rich, vibrant colors that are perfect for games, movies, and pictures. Because of the construction of the display, however, things like text do not display as well as other screen types, making it harder to use as an e-book.
- *LCD display*: This is the same kind of display that is most commonly seen in computer monitors. These colors on this screen are not as good as an AMOLED screen, but text looks better. These screens are great all-around screens.
- *Pixel Qi Display*: This is a relatively new kind of screen; these displays are capable of both brilliant and rich colors as well as transfer to an E-Ink display. This technology allows for the best kind of display for enjoying media as well as operating as a low-power, Kindle-like display for viewing text. These displays are generally more expensive but offer the best experience to date.

Each of these technologies fits a use case. The most common combination of technologies you will see is a capacitive touchscreen on an OLED display. These are typical of higher-end devices, like the Samsung Galaxy Tab.

## Screen Size

There stands a pretty good chance that your hand is not the same size as everyone else. Because of this harsh reality, you may not be comfortable with the same size device as everyone else. Fortunately, Android allows manufacturers to release devices of all sizes for us to use. There are currently four typical sizes for an Android tablet.

- *Less than 7-inch*: These devices bridge the gap between smartphone and computer, since the largest smartphone/tablet hybrids to date are the Samsung Galaxy Note and the 5-inch Dell Streak. These devices are just about as pocketable as a cell phone. If GPS is included these devices, they make great in-vehicle devices that can provide entertainment and navigation.
- *7-inch tablets*: This form factor is ideal for users interested in an e-book reader, web browser, or media player that is extremely portable. Seven-inch devices fit great in a back pocket, a purse, or a suit coat pocket. These devices can often come ready to work in a business environment with a physical keyboard that can be attached or with a suction cup mount to enjoy media or navigation in your car. Some also come equipped with the ability to add more memory or to connect to your television to enjoy your media in a home theater.
- *8- to 10-inch tablets*: These larger devices are typically used for enjoying media, browsing, and playing games on a larger screen. They are much less portable but typically come with features that more nearly match those of a traditional laptop, such as USB ports, dedicated video output slots and so on. The cost for these devices is typically the highest of the group because of the added cost involved in their creation.

**NOTE:** There are currently no tablets on the market that are larger than 10 inches, but the sky is the limit, so it is assumed it is only a matter of time before larger devices are seen.

## Internet Access

One of the really great things that any tablet will be able to do in some form or another is connect to the Internet. Google is first and foremost a web search company, so it makes good sense that Android would be driven by the Web. It's not a requirement that you be connected to the Internet, but when you are, you have a much more powerful device in your hands. By connecting your tablet to the Internet, you unite Android with all of Google's Internet-based services immediately, and your tablet becomes in sync with what Google calls the *cloud*.