

# 1

## Choose an Android Phone

### HOW TO...

- Find a phone that has the features you need
- Identify popular Android phones
- Understand the advantages of Android vs. competitors
- Use a features checklist to help pick the right phone for you
- Make the most of a trip to the cell phone store, even if you then buy online

If you've recently purchased a Google Nexus One smartphone, or another phone that, like the Nexus One, runs Google's Android operating system, congratulations! You've just purchased a device that runs perhaps the most advanced operating software available. The phones running Android are among the most exciting consumer electronics devices available today.

In this book, I'll discuss Android and its exciting capabilities, as well as how to use them on your phone. Because there is such a wide variety of phones running Android, I'll use one phone, the Nexus One sold exclusively by Google, as my example. The Nexus One has just about any feature that any Android phone has, with the exception of a physical keyboard. (The Droid, introduced by Motorola shortly before the Nexus One, is an up-to-date Android phone with a keyboard.) So this book serves as a complete and specific user's guide for a Nexus One phone, and a slightly more general guide to other Android phones as well. The book also includes detailed coverage of Google services and Android apps, nearly all of which run on every Android phone.

This chapter describes some things you might want or need to know before buying a Nexus One or other Android phone, to get the most out of your phone, and to help advise friends, business colleagues, or family members on a purchase. If you want to get right into using your Nexus One or other Android phone, you can start with Chapter 2.

### Note

If you already have your Nexus One and you're ready to get started using its amazing capabilities, you can get right down to it in Chapter 2. Use this chapter to help advise others who might be considering buying a Nexus One or other Android phone.

# Cool Features of Nexus One and Android Phones

Any Android phone can make calls—not only using the cell phone network, but also via seamless integration with Google Voice, where it's supported. In case you haven't heard of it, Google Voice is Google's exciting service for managing your phones and saving money on calls; it's distinct from Google Voice Search, which allows you to start a search from your cell phone by speaking your search terms. Other types of smartphones vary in their support, or lack of support, for Google Voice. However, none have the same seamless integration as Android phones. RIM's BlackBerry phones come closest; at this writing, Apple bans Google Voice from the iPhone entirely. (See Chapter 9 for details on Google Voice.)

Android phones also have outstanding support for Gmail (Google's webmail offering), Google Contacts, Google Calendar, and other Google services. Other smartphones vary in their support for Gmail, but several are just about as strong here as Android phones. They usually lack the integration Android has with Google Calendar and Contacts. (Gmail and its social networking partner service, Google Buzz, are covered in Chapter 8 and other Google services are covered in later chapters.)

Android includes leading-edge support for other Google services such as Google Maps, covered in Chapter 11, and Google Goggles, shown in Figure 1-1. You're probably already familiar with Google Maps; Google Goggles is a service that allows

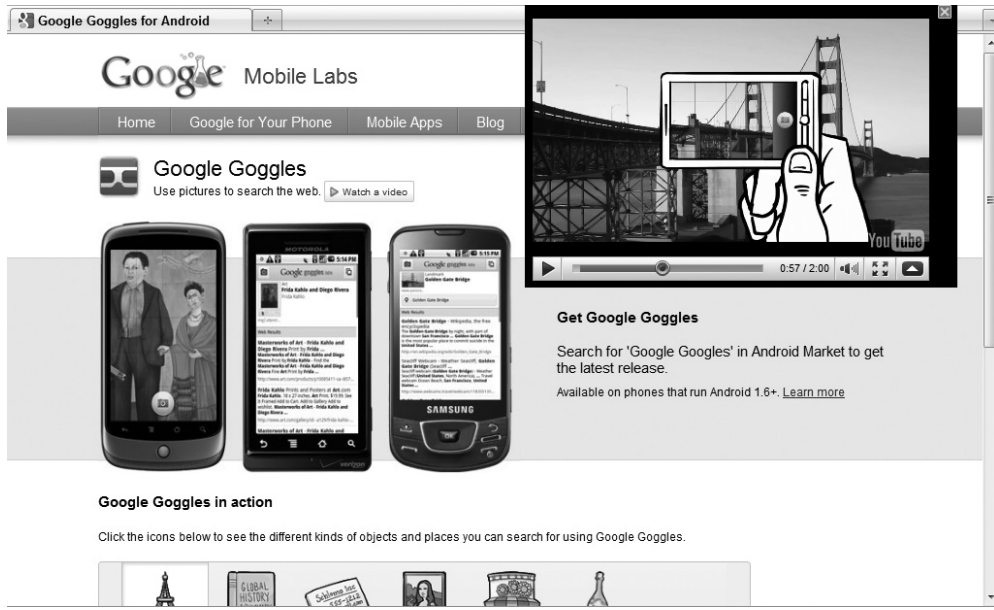


FIGURE 1-1 Goggles is another Google breakthrough.

you to take a photograph of different objects—from the Eiffel Tower, to a book, to a bottle of wine—and get back a description of the object, including, if it's available for sale, how to buy it. These services are not Android exclusive—Google tries to make them available on as many smartphones as possible—but they're often available first or better integrated on Android. If you're a Google fan, or if you just like new toys, you almost have to have an Android phone—as your only phone, or alongside one or two others.

In addition to making phone calls and supporting Google services via Android, Android smartphones also include some or all of the following features:

- **Web access** Every Android phone has web access, usually with Wi-Fi support as well as support from the cell network used by phones.
- **Still camera** Every Android phone has a still camera, although they differ in their features. The Nexus One's is a sterling example of the type, with 5MPx of resolution, flash, and additional features, well supported by Google Goggles. (See Chapter 12 for information on the camera) Android software includes built-in support for uploading photos to Google's Picasa web service, shown in Figure 1-2.
- **Video support** Android phones commonly include at least some video support for the built-in camera, since Android has built-in support for video uploads to YouTube. Video recording, storing video on the camera, and playback of on-camera and streamed video all stress various aspects of a phone, its software, and connections—a task only made harder by higher-resolution screens.
- **High-resolution screen** Android phones tend to have screens with higher-than-usual resolution, without much impact on the overall size of the phone. Again, the Nexus One is a leading example, with a 3.7" screen and a near-record-setting 480×800 pixel resolution. (The record holder, as of this writing, is the

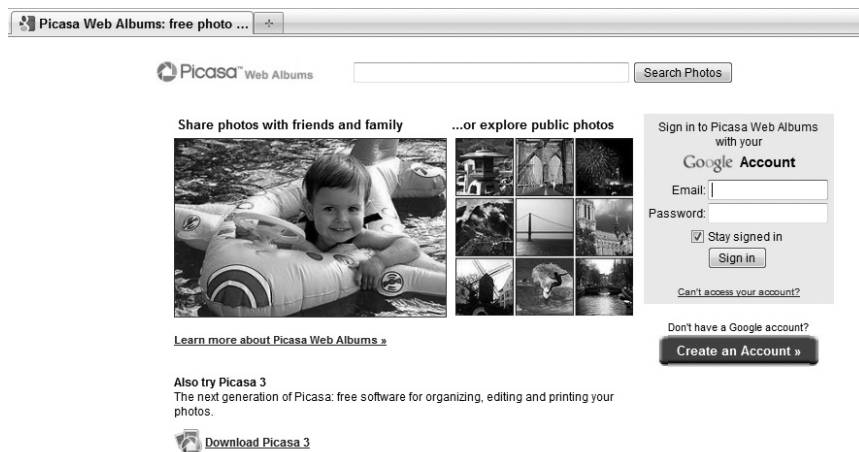
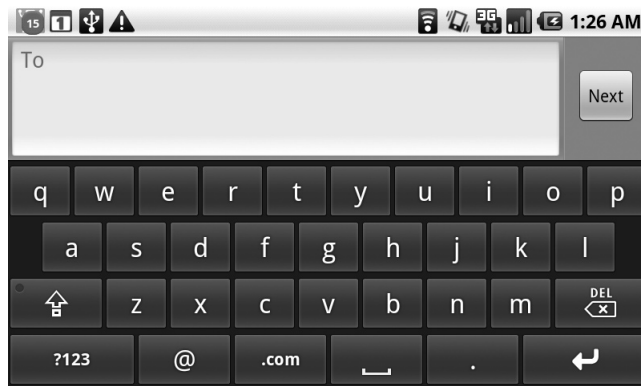


FIGURE 1-2 Picasa is Google's online photo service.

Motorola Droid, with its 480×854 resolution.) Touchscreen support is becoming a requirement for all kinds of mobile phones, even for phones with physical keyboards or keypads. Google is rolling out native multitouch support for all Android phones.

- **Keyboard** A phone's keyboard is used for text messaging, e-mail, entering URLs, text entry for other web services, and taking notes, among other uses. There are three types of keyboards for smartphones: physical keyboards (either slide-out or integrated into the handset, as with many BlackBerry phones); onscreen keyboards, as on the Apple iPhone, the Google Nexus One (as shown in Figure 1-3), and some others; and letter keys on a number pad, similar to a landline phone and found on most non-smartphones. Among recent Android phones, the Motorola Droid has a useful slide-out physical keyboard.
- **Internal microphone** A phone needs a microphone, of course, but Google's Voice Search service makes it particularly important to have a good one. Voice Search is available on all sorts of smartphones, but voice input can be used to control all of the phone's features on the Nexus One, and perhaps soon on other Android phones as well. Voice input is much more limited on most non-Android phones. When the Nexus One was introduced, it was the first phone to allow voice input to just about any text field, system function, or app.
- **Second microphone and noise cancellation** We all notice if we can hear the person we're talking to, but can they hear us? You never know until the other person complains—or cuts the call short in frustration. Android phones tend to have top-of-the-line microphones and noise cancellation software, but the Nexus One is unique, as of this writing, in having an identical microphone on the back as well, to pick up ambient noise. The Nexus One cleverly subtracts the noise from the back mic from your voice, plus noise coming in the front mic; hopefully, this leaves only an unusually clear voice for your caller to hear. Hardware-supported noise cancellation also cleans up voice input for Voice Search. (See Chapter 4 for details.)



**FIGURE 1-3** The Nexus One onscreen keyboard just works.

# The Story of Android

If you own, or are considering buying, an Android phone, it's good to have some idea of where Android is going. And in order to understand where Android is going, it's also good to know a little bit about where it has been.

One of the too-little-told stories of technology today is the rampant growth of various versions of the Unix operating system—and in particular the small, tight Linux kernel—in all sorts of devices. The iPhone's operating software is based on Unix; Android is based on Linux.

Android is also open-source software, meaning it can be modified by anyone who adopts it, and it is free to use. The iPhone's operating system, by contrast, is neither open nor free. The iPhone's core code is tightly protected; not only can it not be used by others for free, it can't be used by others at all.

## Origins of Android

Android was originally developed by Android, Inc., a Silicon Valley startup founded to make software for mobile phones. Google purchased Android, Inc., in mid-2005. In acquiring the company, they hired Andy Rubin, a famous smartphone innovator, who developed the Sidekick, shown in Figure 1-4. Google also hired other Android employees, many of whom had deep experience in mobile telephony and related technologies.

Google pushed forward the development of Android, then helped found the Open Handset Alliance to support further Android development. The Open Handset Alliance has more than 20 members, including not only Google but other well-known companies such as Intel, Motorola, Samsung, Sony Ericsson, Sprint, T-Mobile, Texas Instruments, Toshiba, and Vodafone.



FIGURE 1-4 The Sidekick was ahead of its time.

However, Google continues to carry the main burden of Android development and to manage public events for Android. The Nexus One is widely assumed to have been developed as an Android showpiece as much as for its role as an actual, money-making product. The Open Handset Alliance owns Android and has ongoing input into its development. Android is made available for free.

## Steady Growth in Models

Android phones continue to grow in number and variety. A list of Android-powered devices as of the writing of this book includes about a dozen fairly well-known phones, often marketed under different names in different countries. Here are some of the more recognizable Android phone names in the U.S. market at this writing:

- **T-Mobile G1**    Sold as the HTC Dream elsewhere, this was the first Android phone. It went on sale in late 2008. The G1/Dream, shown in Figure 1-5, featured a highly usable, slide-out physical keyboard, and achieved solid sales.
- **T-Mobile myTouch 3G**    Sold as the HTC Magic elsewhere, this was a follow-on to the G1/Dream but without the keyboard. The T-Mobile G2 Touch/HTC Hero and HTC Tattoo are variants, without a physical keyboard, but with HTC's breakthrough Sense user-interface software.
- **Samsung Behold and Behold II**    The Google Nexus One is quite, well, beholden to the Behold phones from Samsung. The Behold phones introduced Android interface features such as multiple menu screens and specific Samsung additions in the form of the TouchWiz user interface, which includes a "cube menu" for multimedia use. The Behold phones also include similar hardware features such as a 3.2" AMOLED screen with VGA (640 × 480) resolution and a 5MPx camera.



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**FIGURE 1-5**    The G1 was the first Android phone.

- **Google Nexus One** The Google Nexus One is intended as a reference phone for Android, Google services, and Android apps. The Nexus One is covered in depth in this book. A nearly identical model is sold as the HTC Desire through non-Google outlets. The Desire, initially available for sale only in Europe and Asia, adds an FM radio and HTC's Sense interface.
- **Motorola Droid** The Droid is the Android phone that got the most attention prior to the Nexus One release, and it is perhaps the best-selling Android phone so far. Strong hardware and a rich feature set, plus clever marketing that plays off what the iPhone and iPhone apps can't do, are contributors to the Droid's success.
- **Motorola Cliq (Motorola DEXT worldwide)** Cliq/DEXT is another strong Motorola entry that runs the Motoblur software, which integrates updates from Twitter, Facebook, and e-mail clients in a single interface.
- **Barnes & Noble Nook** Not even a phone, but an e-book reader, the Nook was created to compete with Amazon's Kindle, which runs proprietary software, not Android.

In terms of unit sales, Android has been a huge success. As of early 2010, just over a year after the first Android phone went on sale, Android phone sales reached a total rate of more than 5 million phones a quarter. The iPhone has sold 7 million phones in its best quarter, and BlackBerry is in the same ballpark, with total sales over time several million units above Apple's.

So Android has already disrupted the market, preventing Apple and RIM from dominating it as a near-duopoly. Analysts predict that Android phone sales will eventually surpass Apple's and perhaps even RIM's.

This is not an immediate financial win for Google, which gives Android away for free through the Open Handset Alliance. However, Android is a truly excellent platform for Google's various services, each of which is a current or potential host for Google's ads. Ads are where Google makes its money. Android allows Google to try out new and improved services as well.

Leading the development and deployment of Android has not always been easy for Google. For instance, Google received a fair amount of negative publicity for not having strong customer support in place when the Nexus One went on sale in January 2010. This sad story was a very good wakeup call for Google, though. The company added phone support for Nexus One the following month, and Google can be expected to learn more about customers through providing phone support as well.

## The Infinite Diversity of Android

Mr. Spock was the half-human, half-Vulcan first officer serving under Captain Kirk in the original *Star Trek*, as well as in several *Star Trek* movies, including the most recent one. The basis of Vulcan philosophy is a motto, Infinite Diversity in Infinite Combinations, reflecting the many species and types of intelligence found in the universe.

Similarly, Android will be used to make a nearly infinite diversity of devices in nearly infinite combinations. Because Android is open source, phone makers such as Motorola and even service providers such as T-Mobile can modify it just as much or as little as they please. Developers can even create software layers, such as Motorola's Motoblur and HTC's Sense interface, that they add to some of their Android phones but not to others. Some phones will feature Google services front and center; others will emphasize the maker's own offerings.

We can also expect more phones in the future like the Google Nexus One: reference devices that provide a relatively pure Android-plus-Google experience. Although a reference phone of this type is somewhat competitive with Google's Android partners, it also advances the platform and provides opportunities to learn what works and what doesn't for everyone involved. This makes the whole range of Android phones better.

Not only does the hardware and software for Android phones vary, there is a variety of carriers as well. (The big four in the U.S. are AT&T, Verizon, T-Mobile, and Sprint, all of which have Android phones.) This encourages competition on all fronts. As user demands for both high voice quality and fast, reliable data transfers increase, shopping for robust network support will be just as important as phone features and the price of service plans. Android, spread across all the carriers, stands to do well no matter what.

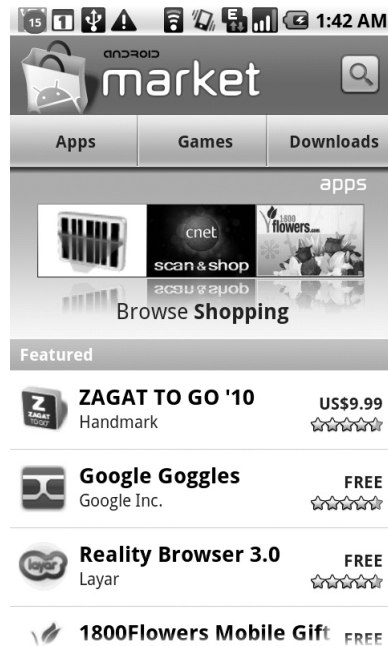
## How You Come Out Ahead

As a user of an Android phone, you benefit from this explosion of diversity. Every new Android device is another choice you can make without giving up very much of what you've learned on your previous Android phones. Your investment in Google services such as Gmail, Google Calendar, Google Contacts, and Google Voice will continue to pay dividends. If you're a bit of an expert, you can even recommend Android phones to family, friends, and work colleagues, who will then know you're available for help in a pinch. (This kind of informal support is vital in the adoption of any new technology—from cars, to PCs, to smartphones and beyond.)

Because Android is able to be upgraded remotely by the service provider, you will benefit from a rising tide of functionality that will lift your Android phone(s), along with others. And because Android is a gateway to so many cloud-based services, you benefit from improvements to those as well, without having to update your software or transfer your data.

There is somewhat of a downside to this diversity in terms of choosing and using Android apps. The Android Market, shown in Figure 1-6, already carries more than 30,000 apps, nearly all of which work on nearly all Android devices. However, as the diversity of devices increases, the ability to use all apps on all devices is likely to be compromised.

There are already popular Android phones with a greater than 2× difference in screen resolution, as measured by total pixels; with and without physical keyboards; and with different interface add-ons. The demands of making apps work well across the range of devices will tax even the most skilled developers, and identifying which



**FIGURE 1-6** The Android Market is growing fast.

apps make the most sense for a given device will tax even the best-informed user. A certain degree of complexity and confusion will probably be an ongoing side effect of Android's success.

It may be that Android will become the standard for the entire smartphone market, with competitors such as Apple and RIM relegated to niche status, providing specialty devices to small numbers of specific kinds of customers. The better Android does, the better the choices are likely to be for those of us who use Android-powered devices.

## Could Android Power an Android?

An android is, of course, a robot made to look and act like a person. Google Android is a powerful smartphone operating system, but could it ever power an actual android? Or, more to the point, a mobile device far more powerful than any previously conceived?

The answer may be yes. Google is a leading advocate and implementer of cloud computing—putting the “smarts” of computing on Internet servers, with actual devices serving as local sensors and user interface devices. This means that the capabilities of an Android-powered device are not limited by the device itself; the device can draw on the cloud for practically unlimited computer power.

**Did You Know?****Computing Is Going Mobile**

Technology companies are famous for their successes and failures in managing various twists and turns in the fast-moving markets they help create—markets that sometimes disappear out from under them. IBM famously lost control of the IBM PC to Microsoft and Intel. Microsoft “borrowed” the Mac’s graphical user interface from Apple for Windows, then forgot to give it back. Google beat Microsoft in the race to make money online, using an ad-supported model; in the online world, Microsoft’s long-standing approach of selling software to consumers and companies lost out to Google and other competitors.

Android is Google’s main tool for successfully making the transition from the Internet used on personal computers to the Internet used on the move, on smartphones and similar devices. Facebook is just one of the companies that predicts that most of its traffic will be on mobile devices in the years to come. So controlling a major mobile technology platform, even if there’s no direct revenue involved, is a very good thing for Google indeed. And the fact that Google is so committed means that buying into Android today, by buying an Android phone, is a good bet. Google and its partners are likely to be investing heavily in Android for a long time to come.

Google has already begun taking advantage of this potential. Google Voice Search—which is completely different from Google Voice, despite the similarity in names—processes your voice locally, then sends a request to Google’s servers to translate your voice to text. Tremendous computing power can then be used, in brief spurts, to “crack” difficult voice-recognition problems.

Google Goggles and Google Shopper, shown in Figure 1-7, are emerging as other services that draw on bursts of power from the cloud. These services allow you to take a photograph and then compare it to a huge database so it can be recognized as a place and located on Google Maps, by Google Goggles, or recognized as a product and matched against Google’s database of products, by Google Shopper.

As with voice recognition, this matching sometimes takes tremendous computing power. Yet Google can make the service available for free, averaging out the occasional burst of heavy computational usage against the more frequent “easy” matches, while paying for all of it through increases in ad sales.

So if Android ran on its own, with only a smartphone’s resources, it would never have the ability to power an android. But with a cellular network or Wi-Fi connection, plus the ability to access the cloud for extra power when needed, someday Android might be able to.



FIGURE 1-7 Shopper gets Google further into sales.

## Choosing a Smartphone

There are many ways to buy a smartphone these days. And, just as an increasing number of smartphones are powered by Android, there are many ways to buy an Android-powered smartphone as well.

I'll provide a brief survey of some of the major considerations that go into buying a smartphone, and identify where an Android phone is more or less likely to make sense for you.

### Choice of Carrier

Many people start and end their phone shopping with the phones offered by a specific carrier they favor. Others exclude one or two specific carriers whom they dislike.

Many carriers have friends and family plans that offer discounts to groups that share a carrier—usually family members, but sometimes including friends or coworkers. Depending on your calling patterns, being on a friends and family plan can cut your costs by as much as half or more—and if you leave the plan, it can raise costs for the members of your group. So there's every reason to stay within a plan once you've started.

Geographical considerations can have a strong impact as well. Different carriers in the U.S. have geographical strengths and weaknesses for cell phone coverage. (Carriers in other countries tend to share a single system—for instance, GSM in Europe—and also share cell towers.) So a carrier can be more or less off limits to you if their coverage is weak in your local area, or in places you visit frequently.

Also, in a new twist, Apple iPhone users regularly complain about the way that massive data usage in some areas impinges on call quality and reliability, leading to a very frustrating, high percentage of dropped calls. AT&T, the carrier for these users, admits to problems, especially in the San Francisco Bay Area and New York City. So if you're in those locales, and need reliable telephone service on your, well, telephone, you may wish to think twice about the iPhone. As smartphones grow in numbers, similar problems may affect other carriers in specific cities as well.

As Android adoption spreads, just about all carriers will offer a range of Android phones, perhaps alongside BlackBerry phones from RIM, as well as other smartphones and not-so-smartphones. (At this writing, Apple's iPhone is still limited to a single carrier in the U.S., where it's AT&T, and other specific carriers in most other countries.) In the U.S., Google offers the Nexus One with your choice of carriers, starting with T-Mobile at launch and now AT&T, Verizon, and Sprint. So you can stay in the Android family no matter which carrier you prefer to, or feel the need to, stay with.

## Voice Quality

All of us—writers, analysts, and smartphone users in general—tend to get so excited about new web services and new apps that we forget the “phone” in smartphone. Yet good, reliable phone service is more important to most of us than data services; and the impact of even a brief glitch in phone service, leading to a dropped call, can mean a lost job opportunity or strains in keeping up a friendship. Getting your e-mail a second or two slower has far less of an impact.

You need good cell network provision from your carrier for good phone communications, but you also need good voice quality. I've previously had a terrible time when walking down a busy street while on a business conference call; the noise not only made me inaudible, it drowned out others who were on the call as well! Good voice quality, including a good microphone and good software for noise suppression, makes a huge difference.

With the Nexus One (and presumably with the HTC Desire as well), Google and HTC went a step further and added a rear microphone to the device. The phone then compares the front and back microphone inputs and subtracts out noise, which is measured by the rear mic, away from your voice. The effect is great, really improving your calls. (Holding the phone so its back is facing the noise source helps a bit—your skull isn't blocking the noise!)

This feature is also kind of amazing to find in a smartphone for no extra cost, considering that noise-cancelling headphones, which use somewhat similar technology, can easily cost \$500. I can see dual microphones becoming a “must have” feature for smartphones going forward.

## Ease of Use as a Phone

How easy is it to find and dial numbers? To find the numbers of people who called you? To create and use contacts and hotkeys for frequently dialed numbers? To hold the phone up tight to your ear—as you need to do in noisy environments—without your jawbone pressing some touchscreen button and cancelling the call? Along with voice quality, all of these things matter.

Little things make a big difference. The Nexus One has a built-in headset that has a cool little controller for increasing and lowering the volume, as well as muting calls. But the controller icons are on a cheap plastic wrapper that looks awful and starts separating away the second you start using the headphones. So it becomes very easy to lose your guidance as to these vital controller icons. I don't want to have to buy a Bluetooth headset just because the plastic wrappers fell off of the included headset, but I might have to.

## Ease of Use for Texting and E-mail

Texting and e-mail are often more used by the owner of a smartphone than making and receiving calls. This doesn't mean that call quality is not very important. But text and e-mail message handling are very important as well.

In addition to the keyboard, described later in this section, how hard is it to maintain a conversational exchange in text or e-mail? To switch among calls, texts, and e-mails with a given person? (You want to be able to call someone who texts you, or text someone who calls you, easily, and the same is true for e-mail messages as well.) The ease of these kinds of flexible interactions depends on subtle interactions among the phone, text, and e-mail services on the device, along with contacts management and notifications. Android is quite good at these interactions.

There's a minor glitch in this regard on the Nexus One. Android makes it easy to use your Google Voice number for the Phone app, but not the Messaging app. You can work around this by using the Google Voice app for texting, which solves most of the problem. However, Google Voice doesn't support Android's very cool multimedia messaging feature, which makes it easy to send photos, video, and so on. For multimedia messages, you have to use the Messaging app—and have your phone's native number, not your Google Voice number, display as the number you sent it from. A minor hassle, but one I hope Google fixes in the future.

## Screen Size and Web Surfing Capability

Web surfing is always going to be compromised on a small-screen device like a smartphone; the question is, how much are you giving up, compared to using the Web from a Windows PC or Macintosh?

The issues of screen size, screen resolution, screen clarity, support for multitouch, and data transfer speeds are all bound up together to help determine whether or not a given phone is good for web surfing and web services. The availability of apps matters too—if you have a Facebook app that you like, you don't need to try to use the Facebook website from your cell phone.

The Nexus One and Motorola Droid both have bright, clear, tremendously high-resolution screens—480×800 and 480×854, respectively—that are great for web surfing. Web text on these high-resolution screens is quite small, but the screens are so clear that the text is still readable. (Though I, for one, definitely have to put my reading glasses on first.)

Both phones now support multitouch, making web surfing much easier, and the respective carriers in the U.S. have not yet fallen into the trap that AT&T is experiencing of too many smartphone users overloading the network. Reliable access to the fastest type of service, 3G service, is said to be a continuing issue for the Nexus One, though.

## Camera(s)

Nearly all phones now have a camera, particularly smartphones. Phones are now categorized by advanced camera-related features such as the number of megapixels of resolution (usually 2MPx to 5MPx), whether there's a flash, whether there's video support, and even advanced features such as auto-focus. One very cool feature is to have two cameras: one for taking pictures, and one for self-photography by the user and for video phone calls.

For example, the Nexus One/HTC Desire has a 5MPx camera built in, with flash and software zoom, and can be used with multitouch (pinch to zoom). The phone includes video support and integration with Google Goggles, for finding location-related information, and Google Shopper, for finding product information and making purchases. Having 5MPx of resolution certainly helps with tricky tasks such as having Google Shopper “see” a barcode clearly enough so it can bring up correct information. With Android-based phones, as well as with other phones, it's not just having a phone, it's what you can do with it.

## Music, Podcast, and Video Playback Support

Music, podcast, and/or video playback can be a person's main reason for buying a phone—or not. Apple is very much the leader here with iTunes and the iTunes Music Store, which allows you to buy all sorts of media content. It organizes that content, whether the content is purchased, ripped from a CD, or shared by others, and it also serves as a framework for the App Store. BlackBerry phones are slowly improving in this direction, whereas Android phones leave it up to you to obtain and organize music, podcasts, and video files.

**How to... Decide Whether Android Is Right for You**

Who are the best candidates to buy an Android phone?

If you make your choice by starting with a phone's software platform, you will be interested in Android, as long as you don't have a work-provided BlackBerry and you haven't already committed to the iPhone family or some other type of phone.

Android's diversity of models and features is likely to result in at least one Android phone strongly appealing to you. Features such as Motoblur for social networking on some Motorola Android phones, as well as the free turn-by-turn navigation support on the Nexus One and Droid, may tip you toward Android.

You're also likely to buy an Android phone if you already use, or are willing to consider moving to, Google's stable of cloud-based services. Google Voice is great, and it is supported best on Android. Freedom from synching your information management services with various devices is a wonderful thing. Conversely, if you are strongly devoted to Microsoft Outlook and its excellent BlackBerry integration, or to Apple's bundled Macintosh applications and their very strong iPhone integration, you may feel one of them is a better choice for you.

Google is also a good choice if you want apps and are not attracted to the iPhone and the App Store—perhaps due to Apple's sometimes heavy-handed control of it and the resulting gradual shift of several interesting services and apps to Android first or Android only.

Your choice of Android may also have to do with the carriers available. AT&T's reputation has suffered tremendously due to the problems iPhone users have experienced, and you may be pushed toward Android, BlackBerry, or some other kind of phone offered by your favored carrier.

There is also a big coolness factor, which plays out differently for different people. If you're surrounded by iPhone and BlackBerry users on a daily basis, it may feel good to join them—or, on the other hand, it may feel good to do something completely different from them.

A smartphone is a highly personal choice. It helps to know the big picture as well as the factors others look at—but you then have to choose the device, software, and carrier support you're most comfortable with.

## Physical Keyboard or Not

This is almost a Mars/Venus type of divide among smartphone users; there is the smaller but stubborn minority who strongly prefer a physical (or "hard") keyboard, and the larger number who are willing to use an onscreen (or "soft") keyboard instead.

Those who are big fans of a hard keyboard use their smartphones largely for e-mail and texting, and they don't care about much else. Screen size? Apps available? Who cares? All that many of these users care about is having a good, reliable, physical keyboard for texting and e-mail, and a screen big enough to see several lines of e-mail text. (As more e-mail-type messages go through social media apps such as Facebook, though, screen size and apps will matter more even to these people, at least to a limited extent.)

Those who prefer an onscreen, “soft” keyboard—or who are willing to put up with one to get a larger screen and not hassle with a slide-out physical keyboard—can be quite persnickety, too. Reviewers regularly come up with detailed analyses of exactly how accurate a given smartphone model's soft keyboard is at registering (onscreen) keypresses, or how fast one can type on it.

I once wrote the entire first draft of a book on a BlackBerry keyboard with my thumbs, so I have every sympathy for the hard keyboard camp. However, I love having relatively unencumbered web access, and I like the Nexus One's big screen, high resolution, and overall speed for that purpose. (The power of Android and its Google/third-party apps tends to grow on you as well.) There's no right answer for everyone, but how you answer this question—hard, soft, or in the squishy middle ground in between the two—will have a great impact on your smartphone choice and satisfaction.

## Social Media Integration

More and more people live a good part of their lives on Facebook, follow Twitter users, send their own tweets, and so on. I've written and given talks about Tumblr, another microblogging tool, so I'm hardly immune from the pull of social media. However, I must admit that it scared the heck out of me when a friend and colleague said he spends two hours a day on Facebook. If he is, I probably should be, too, but where am I going to find another two hours a day?

One answer is to claw back that time from when you're out and about—and also increase your effectiveness, because social media is a dish best consumed and served fresh, as things are happening, no matter where you are.

Luckily, Android is such a robust platform that your social media options are very good—and expanding all the time. There are solid Facebook, Twitter, and WordPress apps for Android. (Though Twitter still has more, and arguably better, apps on the iPhone than on Android.) Not only that, but real innovation is taking place on Android. Both Motorola's Motoblur, shown in Figure 1-8, and HTC's Sense bake social media right into the interface, in a unified “blur” of updates that you can still easily make “sense” of. (Apologies for the puns.) Many Android phones are also excellent mobile web clients, allowing you the option of using the web page for your social media tool(s)—not always a viable option on other smartphones.

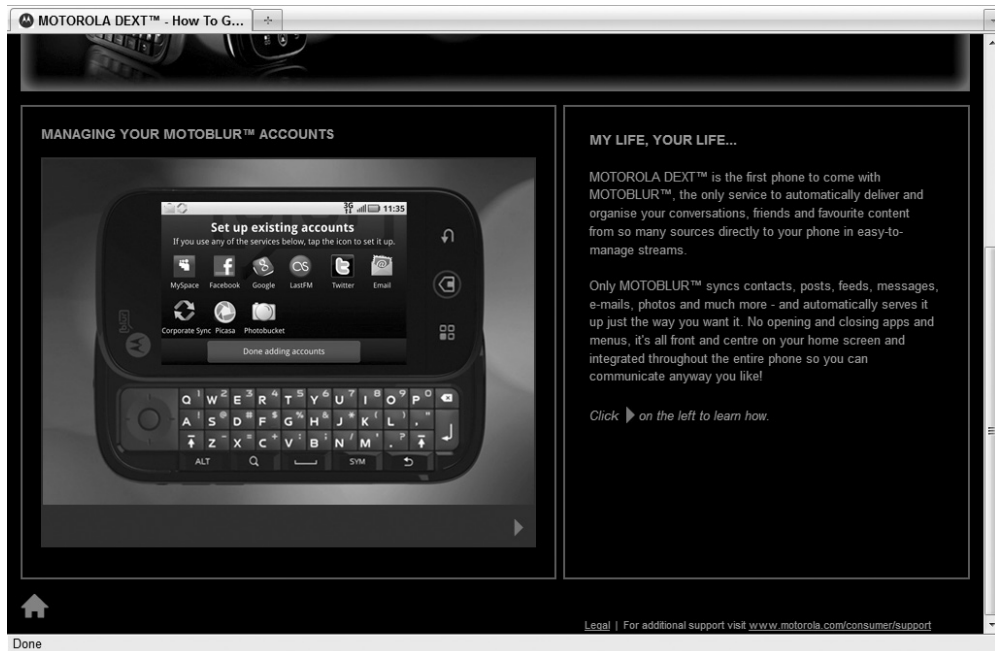


FIGURE 1-8 Motoblur features social media support.

## Android Advantages

It's vital to look at the “down and dirty” specifics of a phone when you're making a buying decision, as described in the previous section. Details such as screen resolution, camera support, the type of keyboard, and so on, may make all the difference.

This book, though, is about the Google Nexus One and other Android phones. You'll have seen that many of the hardware features I mentioned in this chapter, such as the camera and screen resolution, are made more or less useful by the presence or absence of software features such as video support, multitouch, and specific services such as Google Voice, Google Shopper, and so on. In today's market, you have to choose between operating platforms as well as between phones.

Let's take a quick look at the three major operating platforms for smartphones today, with particular emphasis to how they relate to the Google services you might want to use:

- RIM BlackBerry** The BlackBerry was the first revolutionary phone line and the first true smartphone, making e-mail capability an expected part of phones. These phones are supported with IT-friendly in-house servers, plus a voice and data network that's still the most efficient and reliable network in the world today.

(Yes, there are occasional outages; it's the best, but it's not perfect.) Big organizations routinely hand out BlackBerrys to thousands of their employees.

RIM has also come out with a profusion of models, not all with physical keyboards, even some with touchscreens, thus giving users a lot of choices. The BlackBerry is also slowly enticing developers into the apps game, with about 5,000 apps available. However, the biggest selling points of BlackBerrys remain the integrated physical keyboards on many models, and ties between BlackBerrys and corporate data networks; if you don't love or need either of those, you might not be too interested in the BlackBerry line.

- **Apple iPhone** The iPhone brought first a dramatic evolution, and then, with the App Store, a revolution in smartphones. (It also brought a revolution in tablet computers, since the Apple iPad runs the same OS as the iPhone and the iPod Touch.) iPhones are beautifully designed and are reliable in tricky areas such as registering an onscreen touch at the exact point where your fingertip meets the glass. The App Store, with more than 100,000 apps, remains the industry standard. However, the iPhone line is limited, both in models (it has just a couple) and in features—physical keyboards, it seems, are forbidden. The iPhone launched with Google Search and Google Maps built in, but Apple has now imposed limitations on Google services in the App Store. Apple booted out several third-party Google Voice apps and refused to approve a Google Voice app from Google, thus triggering an investigation by the U.S. Federal Communications Commission (FCC). More recently, Google didn't even try to get its Latitude service, which allows you to find and be found by friends nearby, into the App Store.
- **Google Android** Emerging well after the BlackBerry and the iPhone, Android has come on amazingly quickly. Android's openness has won it dozens of “design wins” to be built into new phones. The phones and the software are evolving well together, steadily gaining on both the BlackBerry's networking strengths and the iPhone's fit and finish. Android Market has more than 30,000 apps, covering an awful lot of people's “must have” app needs, and it's growing fast.

The Android universe of phones is becoming increasingly unlimited. You can get near-equivalents to anything RIM or Apple offers, plus a fast-growing diversity in between as well as a radical profusion of new features—well-integrated Google services, new features and interfaces from manufacturers, and even innovations from carriers, not usually something found on BlackBerrys and iPhones. The sum total of innovation available with Android is beginning to rival, and in some ways outpace, the much smaller Apple lineup and the admittedly still very healthy apps selection for the iPhone.

If you use an Android phone, you're likely to use more Google services and to find an increasing amount of your data—e-mail messages, calendar entries, your to-do list, and even photos—residing in the cloud, automatically synched with all your machines and not permanently stored on any of them. Though disconcerting at first, this is a kind of freedom that's ultimately liberating. (Not having to sync your calendar alone is a huge win.) With increasing innovation and flexibility, it's little wonder that the Android universe of phones is closing fast on the sales figures of the RIM and Apple lineups.

## Paying the Right Price

Paying for a cell phone is tricky. The price you pay for the phone is heavily subsidized by your commitment to a monthly service plan for calls, text messages, and data transfer. No one wants to get caught off guard by a big bill if they go over their limits, so unlimited, “all you can talk, text, or surf” plans are popular, even with people who don’t use their phones all that much.

To figure out the cost of ownership for a phone, you have to compare the phone price plus the total two-year cost of your call, text, and data plans—not an easy calculation to make. However, it’s necessary if you’re going to understand your true cost for a phone.

The impact of the monthly charges is so great that people who pay nearly \$600 for an unbundled Nexus One phone online, then add a service plan without a subsidy, often come out well ahead of those who pay less than \$200 for a phone but take on a more expensive service plan that subsidizes the phone as well.

Android phones have been reliably competitive with BlackBerrys and less expensive than iPhones on a two-year basis. In addition, the phone service and data access problems that iPhone users regularly report, particularly in crowded urban areas, have somewhat limited the value of their more expensive phone-plus-plan combinations.

## Phone Shopping

In the next chapter, I’ll describe in detail how to buy and set up a Nexus One phone. This description will be directly useful for you Nexus One owners—or wanna be owners—and useful as an example for anyone using an Android phone.

However, even if you buy a Nexus One phone, which is only available online, you will still want to do at least some shopping in physical phone stores. Why? Because “seeing is believing,” as they say. You have to see a variety of actual phones—not just in pictures or videos on a computer screen—and hold them, try typing on their physical keyboards or screens, and so on, to make a good decision about such an important device.

In a cell phone store, ask questions and try several phones. Ask about Android and Android phones, and see if you get a sensible answer. Phone store salespeople are often more oriented toward specific, “hot” features than platform considerations that may be more important to you in the long run.

Check into accessories. Some stores, especially stores for carriers that support the Nexus One, may begin carrying Nexus One accessories as well.

Google has given itself a tough row to hoe with the Nexus One by limiting its sales to online only; by hardly advertising at all (except within Google); and by getting off to a slow start due to lack of phone support for customers. However, Amazon.com, the famous online retailer, also faced teething problems. Its North American sales now exceed those of the two leading physical bookstore chains, Barnes & Noble and Borders, and may beat their combined total soon.

This is not to say that Google’s Nexus One venture will fully duplicate Amazon’s success; that’s probably not even Google’s goal. The example does indicate that Google, with the Nexus One and Android, may become a strong force in cell phone sales in its own right, given time.