Chapter 1

Google: What's Good in Your PC Is Good in Your Pocket

In This Chapter

- Making the connection between Google, Android, and the G1
- Reading a quick history of Android's creation
- Finding out what makes a smartphone, a smartphone
- Understanding how Android differs from the competition
- Companies and devices supporting Android

Few companies in the world enjoy the overwhelming name recognition that Google does. And why shouldn't it? Many people consider Google's Web search to be the gateway to the Internet itself, a portal to absolutely anything they're looking to find. Google applications (Gmail, YouTube, Google Talk, Documents — the list goes on) are often essential tools for business and pleasure alike. Indeed, chances are good that you and people you know have their browser's home page set to `www.google.com`.

For many people, e-mail and the Web are essential elements in their daily lives. And now we can add a new addiction to another marvel of technology — a marvel whose sophistication and dominance now rival that of the Internet itself — the cellphone. This diminutive device travels everywhere to keep people connected to friends, family, and (unfortunately) the office. In some cases the cellphone has taken the place of the old-fashioned wired telephone line. Modern cellphones rival the computing power of full-fledged desktop computers from just a decade ago, and some data services make it possible to use the Internet on a cellphone at speeds that give at-home broadband connections a run for their money. The possibilities are endless.

So what is Android? (Drumroll, please.) It's a Linux-based smartphone operating system that can run on all sorts of phones. It just so happens to be a particularly cool operating system with some interesting features and an incredible cross-section of industry and community support. At its core, however, Android is simply an operating system.

More importantly, Android is the operating system that powers the T-Mobile G1 — in fact, the G1 is the very first Android-powered phone to be sold anywhere in the world! For you, that means your wireless companion benefits from everything Android has to offer. Hang on — it's going to be a fun ride.

Unveiling Android the Google Way

For some time, Google has recognized the power of the cellphone. In fact, did you know that Google has tailored versions of its home page for different devices? It also makes mobile Gmail, Maps, and other programs available for free to users of a variety of phone models. Any iPhone owner can tell you how helpful Google Maps is in your pocket or purse — especially when you're trying to track down the address of that killer Chinese restaurant across town.

But, like any good company, Google isn't content to rest on its laurels. Making a Web page that fits on your cellphone's screen is a worthy task, but Google knew that it could do more. In 2005, it purchased Android, a Silicon Valley start-up company that had been quietly and secretively working on creating software for the next generation of cellphones. The company continued working in stealth mode under Mother Google's watchful eye until November 2007, when Android was officially unveiled to the world.

Google makes Android available for free, like most of its products. At first glance, this doesn't seem like a healthy way to turn a profit, but Google has a plan. The company recognizes the importance of cellphones (and more generally, anything that fits in a pocket and can connect to the Internet) in its business strategy in the coming years; with Android, the company has its own platform for deploying Google-branded services without having to deal with other vendors.

Google looks at Android as yet another way to suck you into the bountiful Google ecosystem of products and keep you there — and for anyone using Gmail or Maps on a daily basis, that's not a bad thing at all.

What Android Is (and Is Not)

Just like your desktop or laptop computer, your cellphone — no matter how big or small — runs an operating system. The operating system is the brain of your phone: the software that "talks" to the phone's processor and other hardware, manages memory (you have to put those ringtones *somewhere*, right?), and allows applications (such as mobile Web and e-mail apps, music players, and games) to do their thing.

This tiny operating system varies significantly from phone to phone and from manufacturer to manufacturer. Cellphones broadly fall into one of two categories based on the kind of operating system they use: plain ol' phones, which are sometimes playfully called *dumbphones,* and *smartphones,* which can be expanded. The line between the two is blurry and can change slightly depending on who you ask, but the distinction is important nonetheless.

The dumbphone

Regular phones are devices built from the ground up with a certain set of capabilities in mind, and the options for expansion beyond that are limited. In a way, you can think of their operating system as a walled fortress with no entrance or exit; the manufacturer (sometimes in cahoots with your wireless carrier) decided what software would be allowed to run when the phone was created, and that's that. You may have limited capability to add games or small applications, but these items are usually limited in what they can do because the operating system restricts them.

You might be saying "Down with dumbphones, then — let's move on to the good stuff!" Hold on for just a second, though; it's not all doom and gloom. Most phones sold today, such as the Motorola RAZR and LG Chocolate series, are in this category, and just because their capability for expansion is limited doesn't mean they're not already capable devices. Here are some dumbphone advantages:

- **They're connected:** Many modern phones have support for e-mail; have full Web browsers; and can feed you with weather, news, sports scores, and more.
- **They keep you entertained:** Frequently, these phones offer music players, games, powerful cameras, and video playback.
- **They just work:** Because you can't install just any old application you want on these devices, they tend to be more stable and less buggy than smartphones. The manufacturer and network carriers can test every conceivable configuration of the software before it's sold to you and me.

See, dumbphones aren't so bad!

The smartphone

A *smartphone* is simply a cellphone with a standard operating system and a capability to create and install new programs. It frequently features advanced input systems, such as QWERTY keypads or large touch screens, and impressive features such as integrated GPS for mapping your location and Wi-Fi networking for speedy Web browsing and e-mail access. And, just like the

PDAs of yore, smartphones with the same operating system are often available from multiple manufacturers, making it easier to select the hardware that meets your needs and preferences.

At the end of the day, dumbphones are limited in what they can and cannot do, and that's what ultimately drove the creation of the smartphone. You can think of the smartphone as the spiritual successor to the personal digital assistant (PDA) — the Apple Newtons and Palm Pilots of the 1990s — combining a PDA's capabilities with a phone into a single, pocketable bundle of convenience.

This list describes a couple of benefits that made those PDAs so useful:

- **They were "open" for development.** Hobbyists and giant corporations alike could create their own software for the devices and then distribute those applications to the world. If you wanted a better note-taking program, for example, odds are someone had already created one that you could buy or, in some cases, download for free.
- **The experiences were consistent across devices.** If you didn't like Palm's hardware, you could go buy a Sony Clié — but you didn't have to relearn everything about using it because it still used the Palm OS. Similarly, you could switch between a Casio Cassiopeia, an HP Jornada, and a Compaq iPAQ with aplomb because they all ran Microsoft's Pocket PC platform.

It wasn't all fun and games, though. Early smartphones, such as Handspring's Treo 180 and 270, were compromises. They were neither great PDAs nor stellar phones, frequently forcing users to purchase separate, dedicated, simpler dumbphones for those times when PDA functionality wasn't necessary to have around.

Over time, though, manufacturers have expertly and seamlessly integrated the two devices into a single experience. Battery life is less of an issue than it ever has been (although, to be honest, there's no such thing as *too much* battery life). The inclusion of sophisticated word processing, spreadsheet, and presentation applications have made it possible to take short business trips without hauling the laptop along. In fact, smartphones — once designed for and used almost exclusively by businesspeople — have become so easy and fun to use that they're now frequently marketed to and used by college students, stay-at-home parents, and everyone in between.

And then came Android and the G1

Historically, the still-young smartphone operating system market has been dominated by heavyweights Windows Mobile (owned by Microsoft), Symbian (supported by a consortium of phone manufacturers), and

BlackBerry OS (owned by RIM), with the Apple iPhone's special flavor of Mac OS X more recently shaking the boat. Smartphones are really nothing more than pocket-sized computers, and to a certain extent, the software reflects this: Windows Mobile is a scaled-down version of Windows, and the iPhone runs a lightweight version of the Mac's operating system.

Hmm — Windows and Mac. I sense a pattern here. Sure enough, the same fight for operating system dominance in the PC industry is being waged on a smaller scale on your cellphone. Linux is in the thick of things, too, although no one has managed to create a popular, widely used smartphone operating system that's based on it — and that's where the Android-powered G1 comes in.

Recognizing What Makes Android Unique

With established players such as Windows Mobile already running on all sorts of great, capable phones in the marketplace, fair questions to ask are, "What makes Android any different, and why would you choose it?" Or if you work in an organization where the G1 was provided to you, you might be wondering why *they* chose it?

First, I want to get the "X factor" out of the way — that subjective preference for one product's look, feel, and reputation over another's that has separated Mac users from PC users, Ford buyers from Chevy buyers, and Spartans from Athenians for thousands of years. Similarly, some die-hard BlackBerry users cannot be convinced that an Android phone such as the G1 could ever do the job, and hey, that's just fine. Different strokes for different folks, I always say.

Here are some of the unique features that set Android apart:

- **Android is tightly integrated with Google products.** One great thing Android has going for it is its extremely (and I do mean *extremely*) tight integration with much of what Google has to offer. For true Google junkies, this integration could be a deciding factor. Sure, Google offers many of its services to other devices, but none can claim to ooze Google from every nook and cranny the way an Android device does. As an example, Google Maps offers an almost desktop-like experience on Android, right down to Street View support. And the G1 offers one advantage that Google Maps on your desktop never can: You can take it with you.

- **Android is thoroughly modern.** It's the only mainstream smartphone operating system out there now with that new-software smell. It may be an unfair advantage, but as the new kid on the block, Android inherently gets to lay claim to the title. In practical terms, this doesn't mean terribly much, but you can expect Android to be best equipped to take advantage of today's most advanced mobile hardware — like the G1, for instance.
- **Android enjoys massive support from the developer community.** In other words, if you are looking to add a particular application to your phone, odds are very good that the app already exists, is under development, or at the very least is on a developer's mind somewhere in the world.

The list doesn't stop there, though. Like Windows Mobile, Android enjoys a terrific level of device independence, meaning that you can expect to see it running on all sorts of phones from different manufacturers soon. Believe it or not, that's a great thing for you and your G1: The more people who are using Android, the more companies that will embrace it — and that means more software and more support for everyone.

From an employer's perspective, there's a lot to love about Android, too. Android-powered phones will eventually offer true support for Exchange Servers, the Microsoft-supplied e-mail and scheduling systems used by many of the world's companies. Google also allows manufacturers and carriers to lock down their phones, meaning they can be configured so that no additional software can be added without approval: This restriction is no fun for the user, granted, but it avoids a potential support nightmare for companies looking to deploy hundreds or thousands of units.

Adding the Hardware Component

As huge as Google is, it still can't act unilaterally. No company in the world can create a brand-new smartphone platform and expect phones using it to magically will themselves into existence. Far from it, in fact; it takes a small army of big names to give an initiative such as Android a fighting chance in a world dominated by Microsoft and Apple — and a small army is exactly what Google has cobbled together.

The Open Handset Alliance

If Android itself is the king showing on the table, the Open Handset Alliance (OHA) might be the ace up Google's sleeve. Concurrently with Android's announcement in 2007, Google revealed that it had already secretly convinced tens upon tens of the world's largest manufacturers, network

operators, and software companies to sign up and support it. Together, this consortium makes up the OHA, whose primary function is to evangelize Android as a platform and steer its future direction and development.

Some important companies are involved with the Open Handset Alliance, which bodes well for Android's future. This list gives you a closer look at some of these players and their involvement in the alliance:

- **Sprint Nextel and T-Mobile:** T-Mobile has been an enthusiastic supporter of Android since day one, as evidenced by the fact that it has brought the first Android device in the world to market. Fellow U.S. carrier Sprint Nextel is also in the OHA, so it's likely that they'll be offering their own Android-powered phones before too long as well. So what about AT&T and Verizon? Both have both expressed interest in Android without fully committing to the OHA, so it's possible they'll be offering devices as well.
- **NTT DoCoMo:** Though most of us have never used an NTT DoCoMo phone, the carrier is Japan's largest, meaning it oversees one of the world's most advanced mobile phone networks. Its involvement bodes well for the creation of extremely powerful and creatively designed Android handsets, though you may need to be in the Land of the Rising Sun to use them!
- **China Mobile:** This carrier is China's largest — which, as you might imagine, also makes it the world's largest with close to *400 million* subscribers, greater than the population of the United States. There's no telling what sorts of Android devices China Mobile might launch, but it can mean only good things to have the world's biggest carrier on your side.
- **HTC:** The HTC name may not be familiar, but it's a huge Windows Mobile licensee, and odds are you've seen, used, or owned one or more devices created with HTC's involvement. If you have a G1 in front of you right now, you definitely have! AT&T Tilt, Sprint Touch Diamond, and T-Mobile Dash and Wing are other examples of devices manufactured by HTC. Historically, HTC has sold only phones running Windows Mobile, so adding Android to its stable is a big deal.
- **LG, Motorola, and Samsung:** Together, these three phone manufacturers account for more than a third of all cellphones sold globally. That's a lot of talking!

Why the T-Mobile G1 is important

The T-Mobile G1 is important because you're using it, of course, but other forces are at play here, too. As the first retail Android phone to be sold anywhere, the G1 is an important showcase for the technology and a critical way to get people exposed to everything that makes Android great.

The fact that a major carrier like T-Mobile and a huge manufacturer like HTC jumped headfirst into the Android pool to produce the G1 speaks volumes about the industry's level of commitment to what Google has managed to do. There are hundreds of good reasons for their enthusiasm, and I'll be walking you through a good number of them.