IN THIS CHAPTER

- Knowing the origins and scope of Android
- Seeing why you need a Google account
- Understanding the many choices
- Practicing privacy going forward

Chapter 1
Why Android? What's the Deal?

The smartphone is undoubtedly the most common yet powerful personal technology in your life. Living in the United States, you have this main choice: an Apple iPhone (iOS) or an Android-based phone.

The smartphone platform you choose is a matter of preference. Some people use both Apple and Android products, but in the end usually tend to favor one *operating system* (OS, the software that supports your smartphone's basic functions) platform over the other.

Because the iPhone lives in a *walled garden* (a space seen as closed to outsiders), Apple makes the decisions and takes the profits on the phone, accessories, services, and apps. Apple products and software work in sync; you have few choices to make.

Conversely, no matter the brand, all Android phones have similar genetics and are the same at their core. But you will find a wide

variety of options for accessories, phone brands, services, apps, and (most of all) prices.

The competition for dollars in the Android marketplace begets innovation, and I believe that opting to spend *your* dollars in that marketplace is a good choice. In this chapter, I offer some foundational information to help make the Android experience even better.

A Little Android History

Android is the operating system on the majority of the world's smartphones. It's an open-source operating system led by Google developers (according to `https://source.android.com/`):

As an open-source project, Android's goal is to avoid any central point of failure in which one industry player can restrict or control the innovations of any other player. ***Translation:*** If you come up with a new device — smartphone or tablet, for example — you, too, can use the Android operating system to power it for free. (I'm not that smart.)

I believe that much of the magic of Android lies with Google Mobile Services (GMS) — the collection of apps and functionalities that make the Android ecosystem a *useful* environment.

As an Android user, you may wonder why you feel more comfortable using the operating system. The answer is a surprise to many: the Android mobile operating system is based on Linux (another open-source operating system) and many Microsoft patents. The influence of these two giants in the software world accounts for the familiarity, and thus the comfort, you may feel when using an Android device. The nearby sidebar "The scope of Microsoft involvement" gives a quick look at the Android–Microsoft connection.


TIP

Note that many Android phones come with Microsoft Office preinstalled. Also, did you know that you can send text messages on your phone from your Windows desktop PC? Android phone owners can just go to `messages.google.com/web` to connect the devices.

THE SCOPE OF MICROSOFT INVOLVEMENT

It is rumored that Microsoft can make as much as $24 per Android device sold, as payment for its patents used in the Android operating system. Even smartphone manufacturers cross-license Microsoft intellectual property (IP). Based on these patents, in the past few years Samsung paid Microsoft more than a billion dollars in royalty payments for patent usage. In 2014, it was estimated that Microsoft made $2 billion.

Microsoft has never revealed the depth of its patent licensing, but in 2014 the Chinese Ministry of Commerce completed an antitrust investigation. The regulators published their results on the internet, stating that Microsoft owned 310 Android-implementing patents.

Note: The numbers in this sidebar may not be independently verified but have shown up in court documents over the years.

The Many Flavors (Versions) of Android

Throughout this book, I offer stories about the beginnings of, and evolution of, the Android platform. For now, you should know that the latest version of Android I'm using for this book is Android 14. Android 15 is scheduled to release around the time this book publishes. I got hold of a beta (not-ready-for-prime-time) version so that I can see the similarities and show the differences in the new upgrade.

The Android mascot (Bugdroid) is a small, green robot, shown on the left in **Figure 1-1**. Bugdroid, who gets dressed up with each new version of Android, was designed in 2008 to be an internationally understood symbol — like airport signs — because Android was designed for everyone. Since the platform's inception, Bugdroid appears in advertising and has undergone minor changes over the years. Today, the mascot's green color is updated, and just the top of the head shows (on the right in Figure 1-1).

"The Android robot is reproduced from work created and shared by Google and used according to terms described in the Creative Commons 3.0 Attribution License." https://source.android.com/setup/start/brands#robot-android

FIGURE 1-1

The initial versions of Android, except for A and B, had nicknames based on sweet treats. The nicknames gave a friendly, homey feeling to each update and personalized it to its users. Android 1.5 (Android C) was Cupcake, which was apparently when the naming system began. From there on, the charming version nicknames followed the alphabet, and even though Google publicly discontinued the cute code nicknames, they're still embraced by fans. After 2021, Android 12 is Snow Cone; Android 13, Tiramisu; Android 14, Upside Down Cake, and Android 15 is Vanilla Ice Cream. Yum!

Reasons That People Choose Android

REMEMBER

Not all smartphones are iPhones.

The most excellent aspect of Android is that it's highly customizable. If you don't like one way of doing (or seeing) things, you can switch to another mode. Android is as simple or as complex as you want it to be.

Here are several features I love about owning an Android smartphone:

- **Keyboards and default apps:** I love having the option to try out different keyboards and browsers. You can download many apps for free from the Google Play Store and try them out. If you come to realize that an app isn't your cup of tea, (or you don't use it), just uninstall it.
- **Sharing:** Whenever you want to share a photo, a web page, an email — you name it — tapping the Share icon (shown at the left) brings up a simple sheet with app icons. Just tap the one you want to share to, and you're on the way. You can find more about sharing in Chapter 13.

- **Navigating screens:** As many times as I've used iOS devices (iPhone, iPad), my productivity always freezes when it comes to going back a page or a screen. On Android, you can use hand gestures or the bottom-of-screen back arrow to navigate simply. When you set up your phone, you can make a choice about this navigation.
- **Notifications:** They're easy to control. You can control how you see these notices — from your email, social media apps (such as Facebook), news feeds, and so on — organized on the Home or Lock screen, app by app.

These are just a few features, but the truth is, Android is about choice and creativity. You're not forced to use any specific brand, and your phone can link to many different devices in your home (such as the thermostat, electric outlets, or lights) with the Google Home app.

Why You Need a Google Account

If you've ever purchased an Apple product (iPhone, iPod, or iPad), you know that you had to sign up for an Apple ID. Apple asked me to input my credit card information, even though I had no desire to purchase anything in the App Store. I couldn't register the phone without it.

To use the Google apps, you also need an ID and password, which is officially your Gmail account. *But* you don't have to supply any credit card information until you reach the point where you actually want to purchase something.


REMEMBER

Technically speaking, you don't *need* a Google account, but I believe that it makes your Android experience better. You do need a Google account to identify you over Android Mobile Services. And having the account gets you full value from the many native Android apps, such as Gmail, Calendar, Photos, Play Store, or Maps.

Accessing your Google account

The native apps are free to use, but accessing everything from your account, all in one place, is *handy.* And all the apps are personalized just for you, based on how you use each app on the platform.

You can access your Google account on your devices in a few ways.

From the App Drawer on your phone:

1. Swipe your finger up from the bottom of your screen to the top. This action brings you to your App Drawer, which appears on your screen to replace the Home screen.

2. Scroll through the alphabetical icons (you can swipe with your finger side-to-side to view all the apps), find the Settings app icon (which looks like a gear and is shown on the left), and tap it.

You can also find the Settings app from your Home page drop-down menu by swiping your finger from the top of your screen to the bottom.

3. When the Settings app opens, scroll down (using your finger to move the list of settings) to find the Google entry and tap it.
4. On the resulting screen, tap Manage Your Google Account to see the screen shown on the right in **Figure 1-2**.

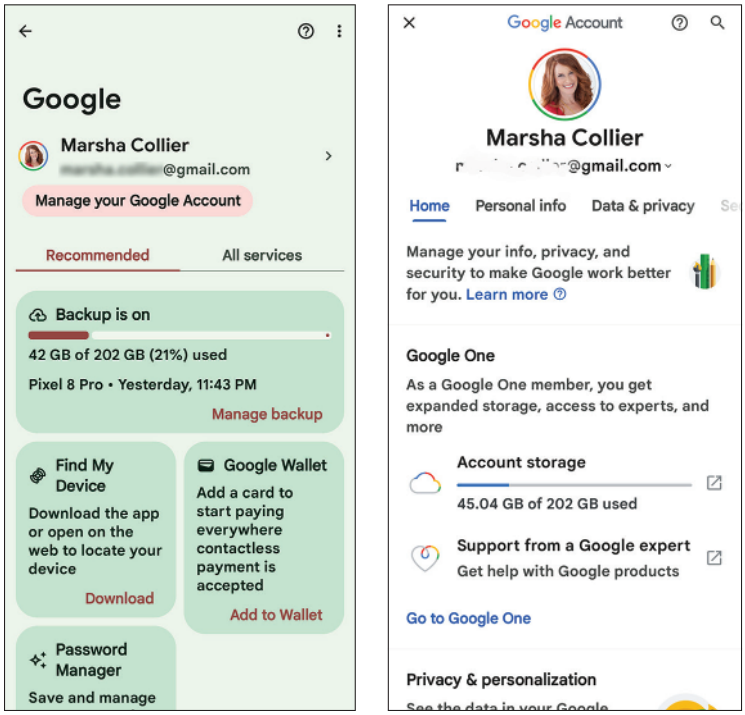

FIGURE 1-2

From any Google app (such as Gmail) on your phone:

1. Find your photo in the upper-right corner (or you may see your initial if you haven't uploaded a photo) within the app.
2. Tap your photo or initial icon, and then tap the Manage Your Google Account button (or Google Account on Samsung) to go directly to your account.

From a PC:

1. Open your browser, for example, Google Chrome.
2. Type `myaccount.google.com` into the browser search bar and press Enter to arrive at the website shown in **Figure 1-3**.

From this page, you can make selections from the list on the left to adjust the settings related to your interactions with Google.

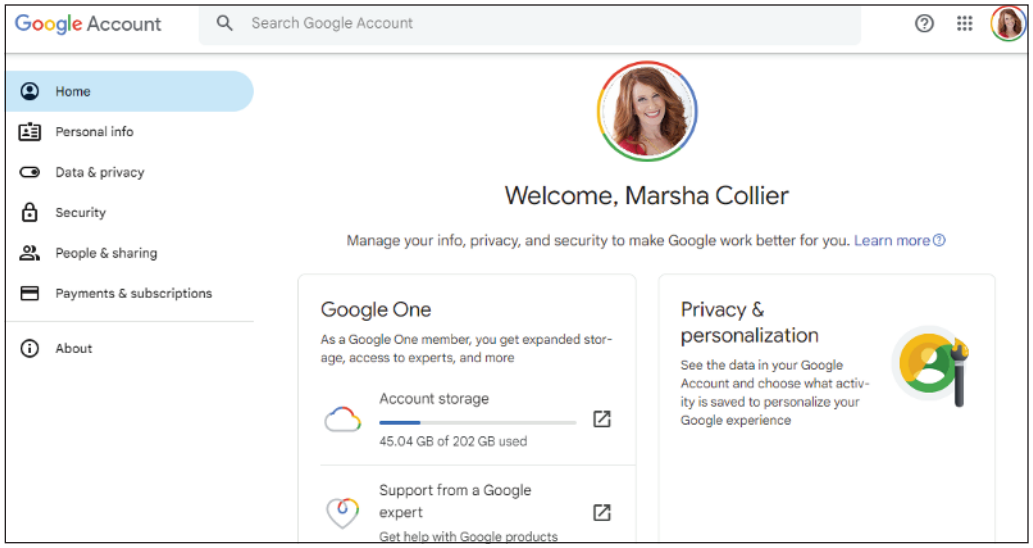

FIGURE 1-3

REMEMBER

Whether you choose to access your Google account on your smartphone or computer, you have the ability to edit the account settings related to everything from your personal information to privacy, security, and more from the tabs and selections that you find on your device's screen.

TIP

If your photo doesn't appear in your Google Account, tap the letter that's in the photo circle to upload one from your mobile device or PC. That way, whenever you are in any Google app on a computer, tablet, or your phone, your picture appears in the upper right. Tap it, and it opens up to Manage Your Google Account.

Bequeathing your Google account

From your Google account (in Data & Privacy), you can determine what should be done with the account should you not log in for a while. Google can notify someone that you name, give that person access to your data, or delete the account altogether. The screen on the left in **Figure 1-4** shows the Inactive Account Manager when you access it for the first time, and the screen on the right shows my plan already set up. I definitely want my daughter to have access to my photo archive after I'm gone or no longer accessing my account. Anyway, you can set it all up there.

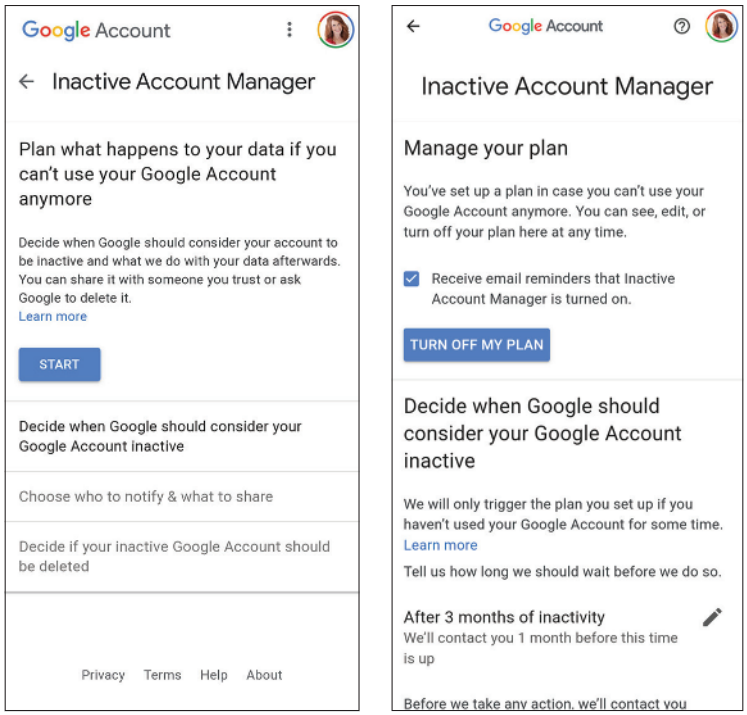

FIGURE 1-4

GOOGLE ONE

After you've used your Google account for a while — and backed up your data — you may fill up a lot of storage space in your complimentary 15 GB or, *gigabytes*. (One GB is approximately 1,000 MB, or *megabytes*).

Everything you save on Google counts toward this storage amount — Gmail messages, photos, documents in Drive. I've had my Gmail account for years and use it as a *de facto* filing cabinet. I've saved all my important emails there because they're easy to search; it's a perfect system. I uploaded my entire photo library to Google Photos, not only for archival purposes but also because Google Photos has fun and useful features. Going beyond a digital storehouse, Google Photos enables you to print photo books with selected pictures to give as special-occasion gifts.

After more than a decade, I have exceeded my 15 free gigabytes and now need to pay for more storage. The price was quite reasonable. I signed up for 200 GB of storage for $29.99 a year — a small price to pay for the security of having my data backed up.

With the new storage on hand, I now have a Google One account, which provides the aforementioned 200 GB of storage, access to Google experts for premium support for any problems, 3 percent back in credit at the online Google Store (`https://store.google.com`), and more.

To find out more about Google One services, download the Google One app from the Play Store or go to `one.google.com` in your browser on your phone or laptop.

So Many Choices!

Many companies make Android phones, and each one works hard to put its own spin on the device. Or not. A Google Pixel phone is pure Android. Every update to the Android OS comes to a Pixel phone first, making it the most innovative device.

The additions that manufacturers put on their devices become Android combined operating systems, or *skins*, as software overlays that deliver the interface design of the phone. A lot of extra software

can be piled on a phone this way. I remember being given a popular brand's phone to review, and I couldn't get past the complexity of the skin. Screenshots in this book illustrate that similar screens can look different between phones because each manufacturer's device has its own skin design. You'll notice that even Android icons are modified ever so slightly.

Android skin customizations offer the user an enhanced experience. It's up to you to decide which one works best in your day-to-day phone use.

Just as Android names each version of the software, it's probably no surprise (because branding is important to manufacturers) that each OS skin has its own name: OncPlus = OxygenOS, Samsung = One UI, Motorola = My UX, Google Pixel = Google Pixel OS (catchy, no?).

Note: You receive separate updates on your phone for security, the Android operating system, and the manufacturer's operating system.

Flagship versus mid-range versus feature phones

Because Android is a free, open-source platform, you can buy Android phones at many price points. You can even buy a brand-new phone inexpensively (for way less than the $1000+ flagship variety). Many of us don't really care to have the latest-and-greatest (and, therefore, most expensive). But the cheapest *new* phone may not be the best choice. Perhaps consider last year's model of name brand phones or a refurbished model?

Feature flip phones are the simplest of all, but texting is a nightmare because most don't have a full keyboard. If all you want to do is make phone calls, you don't need an Android smartphone. (They call them *smart* for a reason).

For example, I don't use processor-hungry games on my phone, so I don't really need the fastest possible *central processing unit* (CPU, the main component in a smartphone that carries out its tasks). But I do

care about having a quality camera, and some new mid-range brand-name phones (with mid-range price points) have quality cameras these days.

Samsung has an A series (*A* for *a*ffordable, perhaps?). Google Pixel A, OnePlus R, and other manufacturers also make basic phones that won't put a dent in your budget. The more bells and whistles a manufacturer adds, the more it ratchets up the price you pay. A *flagship* (top-of-the-line) Android phone can be as expensive as a computer. (You can find more advice about picking out your phone in Chapter 2.)

Tech support options

In Chapter 2, you find out about buying a phone, but know that you don't have to buy your smartphone from the cellular carrier. You can buy direct from the manufacturer's website. Because both the manufacturer and carrier are intertwined with your phone, you *might* receive better tech support by contacting the manufacturer.

In **Table 1-1**, I give you tech support contact information for the major phone manufacturers. I have added an X (formerly known as Twitter) handle for brands that have a dedicated tech support Twitter account. Reaching brands via social media can be the fastest way to find service.

TABLE 1-1 **Customer Service Contact Info for Android Phone Manufacturers**

Manufacturer	X (Twitter) Handle	Link	Phone #
Google Pixel	@Google	https://support.google.com/pixelphone/	
Lenovo	@LenovoSupport	https://lenovomobilesupport.lenovo.com/us/en	(866) 426-0911
LG	@LGUSSupport	www.lg.com/us/support	(800) 243-0000

(continued)

TABLE 1-1 *(continued)*

Manufacturer	X (Twitter) Handle	Link	Phone #
Motorola	@Moto_Support	https://en-us.support.motorola.com/app/mcp/contactus	(800) 734-5870
OnePlus	@OnePlus_Support	https://service.oneplus.com/us	(833) 777-3633
Samsung	@SamsungSupport	www.samsung.com/us/support/contact/	24/7 Text HELP to 62913
TCL	@TCL_USA	https://support.tcl.com	(855) 224-4228

REMEMBER

Yes, efficient service *can* happen! On a personal note, I can attest to reaching Samsung support on X (Twitter) some years ago. Even though my device was out of warranty and the problem was caused by my own idiocy (I put the phone on a counter and spilled a cleaning solution that saturated my phone), I told them I'd pay for the repair. They asked that I mail in my phone, and I was able to track the repair progress on the online portal. The process was super efficient, and my phone was returned to me quickly.

TIP

If your phone needs fast attention, you can always see whether you have a uBreakiFix location near you. Also, If you're a budding DIY technician, check out iFixit (www.ifixit.com/) online for free repair guides and parts for sale.

5G? LTE? 4G? VoLTE? Whaaat?

I hope you appreciate the fact that I'm sparing you a long diatribe on the technical aspects of your phone's radio frequency usage. At best, an explanation would be wordy and confusing. And it's unnecessary.

The simple explanation for those letters and numbers associated with your smartphone's signal is this: The higher the number in the radio frequency designation, the faster the data signal can communicate with your phone. The *G* stands for the *g*eneration of the device. *LTE* stands for Long Term Evolution (basically, industry and marketing

jargon), and 4G *VoLTE* means that you can make *vo*ice calls over the LTE data network.

Each leap in technology represents more signal capacity. The faster newer-generation technology also means less *latency* (lag time) between the signal source and your phone. It takes less time to get a signal response, which, in the case of 5G, can mean useful advances in personal medical devices, such as remote monitoring, and more. Also, if you live in a home with lots of people using the internet simultaneously, the 5G signal has more capacity and will improve buffering (latency) for everyone sharing a single signal.

5G also comes in different flavors. When you connect your phone to your data provider, you may see either *5G*, *5G UW*, *5G+* and *5G UC* at the top of your screen. Sigh. The 5G spectrum has low, middle, and high band variations, and various providers have their own ways of expressing their signal combinations.

Short story, the combination of bands may give you a better signal. T-Mobile shows 5G UW, Verizon uses 5G UC, and AT&T displays 5G+. These additional letters and symbols simply mean that you are connected to a more advanced 5G signal.


TIP

You don't need to run out and upgrade your phone unless it's so old that the carrier no longer supports it in the country where you reside. ***Just FYI:*** 2G is gone, and 3G is on its way out, too.

A Word about Privacy and Security

I find it annoying when legitimate publications (online or in print) feature articles that spread fear about using the internet. Such articles prey on those who aren't tech savvy. Here, I offer solutions on how to keep your phone safe (also, check Chapter 4 for more information).

Free usually isn't

Remember that there's no free lunch in the digital age. Nothing is free — neither websites nor (especially) apps that you load on your phone. For example, those *free* apps can share your information and result in sometimes invasive — and always annoying — advertising (or worse, malware downloaded with updates). You might feel that viewing ads is "payment" for accessing free sites and apps. That's only partially true: Your usage data is what the company needs and is "buying" from you and possibly selling to others. Many phone manufacturers, apps, and websites learn about you from tracking your actions on your device.


TIP

If you pay for an app or a service on your smartphone — instead of opting for the *free* version — there's *less* chance that your data will be taken advantage of.

The terms of service can be tricky

Every time you start up a new device, introduce a new app, or visit a new online service, you're presented with the non-negotiable opportunity to agree to the app's *t*erms *o*f *s*ervice (ToS) and/or privacy policy. You may even see a sentence or two and be prompted to click through to read the entire policy. When did you last read the complete ToS? This document usually spans many pages and is brimming with legalese.

As illustrated in the nearby sidebar, "Nobody reads the terms of service (ToS)," virtually no one actually reads the ToS. Most existing policies would take around an hour for the average Android owner to read!


REMEMBER

I strongly suggest that you go over the terms of service and privacy policy when you're presented with them, or at least search the documents to see what they plan to do with your data. The fact that your data may be shared with a government agency or insurance company (now or in the future) is a real possibility. You can try to copy and paste these documents into an AI platform such as ChatGPT (OpenAI) at `https://chatgpt.com/` and ask the AI to generate a short synopsis to highlight potential issues.

NOBODY READS THE TERMS OF SERVICE (TOS)

In 2016, a research group set up a ***fictitious*** social network website and invited 543 undergraduate university students to a prelaunch evaluation of the social network.

While signing up for the network, the students were presented with a privacy policy, which said (buried in the legalese) that their data would be given to their employers — and to the NSA.

Also, the ToS said that the participants would have to give up their first-born child as payment. Even if they had no children yet, the clause would remain active until 2050. What happened? Ninety-eight percent (that's *98 percent!*) of the participants skipped over the legal jargon, agreed to the ToS, and signed up for the website.

Being able to confidently assume that every provider on the internet follows its privacy laws to the letter would be nice, but you know the truth in your heart: There's always a bad egg.

Making the AI decision — what is it really?

The entire tech world is abuzz about artificial intelligence (AI). AI is a form of computer intelligence developed to perform tasks that normally need human intelligence. Simplified, AI learns when its computer-based model is fed with lots of data, gathered from many different sources. These different sources include articles on the internet, books, social media posts, and news sources (and perhaps your phone). As you can imagine, a lot of misinformation may exist in these sources; any AI-generated content that relates this misinformation results in a situation that experts have (kindly) called *hallucinations*.

An AI can help you on your phone by learning your habits and assigning extra processor time to the tools you use. It also powers Google Assistant, improves photo editing, and recognizes songs when you want to know "what's playing."

There's a whole lot more to AI, as to whether it processes on your phone or goes to the cloud (servers on the internet) to do its job. This AI outreach may be a privacy situation to consider. You can find out more on the capabilities of AI in Chapter 6.

Many top tech experts say that AI will bring a new world to us by making our jobs easier. Other experts, such as Bill Gates and the late Dr. Stephen Hawking, have a different view. In an early interview, Hawking said, "I fear that AI may replace humans altogether. If people design computer viruses, someone will design AI that improves and replicates itself. This will be a new form of life that outperforms humans."

Marsha's sage advice about privacy

Do you want to know the most important pieces of advice I can give you?

- Never share information on the internet that you wouldn't tell anyone except your closest circle of friends and family — not even your year of birth.
- Don't use free Wi-Fi networks without the protection of a VPN. (See Chapter 16 for more information on VPNs.)
- Beware of texts or emails that want you to click a link to attend to an online transaction, verify an account, or open an attachment. If the sender seems valid, go directly to the relevant website on your phone's browser, log in, and find out if there really is a problem to deal with.
- When your phone needs charging outside of your home, use a portable battery charger. Plugging into random USB adapters in public places can be asking for trouble. (You can find out more about charging your phone's battery in Chapter 16.)

» Do not add free apps to your devices until you're ready to use them. For example, I load the airline's app on my phone only when I'm traveling, and then I delete it when my trip ends. Apps like these can fill up your phone with cached data and may drain your battery even when not in use.

Look for more security tips throughout this book!