In Greek mythology, Procrustes was a monster who notoriously forced people to fit in his iron bed. If you were too long, he cut off your feet. If you were too short, he stretched you until your body reached (uncomfortably) from the foot of the bed to the headboard. Today, procrustean describes things of different lengths or sizes that are forced to fit an arbitrary standard.

Transcoder is another term that seems inspired by the story of Procrustes. If you don’t optimize your Web site for mobile devices, many mobile carriers do so for you through transcoding, which is a complex process of reformattting a page layout to make it display better on a mobile device. As you might imagine, the result of this type of automated reformatting often ends up looking like your site was put through the same sort of gruesome manipulations required to make everyone fit in the same iron bed.

If you’ve picked up this book, we have to assume you’re at least considering developing a special version of your site for the mobile Web — the fact that transcoding can lead visitors to a distorted version of your site if you don’t is just one of many reasons you’re right to take an active role in designing a mobile version of your Web site.

In this chapter, we explore how to make sure your Web site fits well on mobile devices, without cutting off its feet or stretching it to within a pixel of its life. We also cover some of the key considerations in designing for mobile and some important design tips to keep in mind when you delve into the rest of this book.
A couple of processes unique to the mobile Web work behind the scenes in your Web site code. One is transcoding and the other is the way mobile browsers process (or fail to process) mobile-specific style sheets. Understanding these issues when you begin can help you avoid many headaches down the road. We explain what you need to know in the following sections.

Transcoding: Forcing full-sized Web pages into tiny mobile spaces

If you don’t develop a mobile design for your site, you run the risk that transcoders do so for you. Transcoding generally involves

- Stripping any video or multimedia.
- Shrinking photos.
- Breaking large Web pages into a series of smaller pages that link together. (These bite-sized pages load better over a low bandwidth connection in a way the carrier deems reasonable.)

If you have any experience surfing the mobile Web, you probably aren’t surprised to find out that this automated repurposing of a page’s code provides disappointing results, at best, and embarrassingly terrible, unreadable results, at worst. If you just want to see how a Web page might look in a mobile device, you can enter any URL into Google’s transcoder and you’ll get a good idea of what the page will look like, even if all you have to test with is a desktop Web browser like the one used in Figures 2-1 and 2-2. In Figure 2-1, you see author Janine Warner’s desktop site (www.jcwarner.com) in the Firefox Web browser on a Windows computer, and in Figure 2-2, you see the effect of the Google transcoder on the same site when it’s automatically reformatted in the browser as it would be for mobile devices.

Keep in mind that transcoding is generally used only when someone uses a very limited mobile device and connects over a low bandwidth service. If you surf with a Wi-Fi network or use a mobile emulator on your desktop computer, you’ll probably never see transcoding in action unless you use one of the transcoding services listed below.

If you want to get an idea for how transcoding works, you can enter the URL of any Web site into either of the following tools by replacing yourdomain.com with any Web address:


Figure 2-1: The desktop version of author Janine Warner's site looks different from the transcoded version.

Figure 2-2: The site after the Google transcoder got done with it.
If you don’t want Google or other transcoders to automatically reformat your Web site, you can direct users to an alternate page by including the following link tag in the Head area at the top of the HTML code of any Web page:

```html
<link rel="alternate" media="handheld" href="alternate_page.html" />
```

Just replace `alternate_page.html` with another page on your site, and Google and most other transcoders direct users to that page instead of transcoding your main page. This tag doesn’t automatically redirect all mobile traffic to the mobile version of your site, but it is a simple way to redirect many visitors to your site. You can read more about the options for redirecting traffic and creating multiple versions of your Web site in Chapter 6.

Designing mobile pages with the XHTML Mobile Profile markup language and using the corresponding doctype will also prevent most transcoders from reformating your pages. You find a review of mobile markup language options and doctypes in Chapter 5.

**Creating a mobile CSS file is not enough**

If the challenges of designing for the mobile Web simply could be solved by creating a special style sheet for mobile, well, that’d be lovely. Unfortunately, it’s not that simple. The rules for Cascading Style Sheets (CSS) include the option to create a mobile version, as well as special style sheets for printing and other uses, so many people who have learned CSS assume this will solve the problem.

In theory, creating a mobile style sheet makes great sense and is the clear winner in terms of efficiency. Because CSS makes separating content from style possible, you should be able to deliver the same page content to both a desktop computer and a mobile phone by simply using a different style sheet. For example, you could create a style sheet for the mobile Web that strips problematic features, such as big background images, and then have a different one that takes advantage of all that the desktop Web has to offer. Because you can link any page to more than one style sheet, you should be able to instruct mobile browsers to use your mobile style sheet instead of the desktop version.

Unfortunately, this approach falls short of the needs of many of the devices on today’s mobile Web because:

- Many mobile devices don’t support CSS at all.
- Other mobile devices don’t distinguish correctly between the style sheet you create for a mobile device and the one that’s used for desktop surfing.
Chapter 2: Designing for the Mobile Web

Even in a world where CSS was supported universally (wouldn’t that be awesome), consider your visitor’s perspective. You’re asking a lot of visitors on slow mobile networks to download an HTML page designed for the desktop. Even if you use CSS to hide some things that may not work on a phone, you’re still making visitors download more than they need, which can cost your visitors more than wasted time — many pay access fees, a price too high to think you won’t lose visitors with this approach.

You can use CSS in your mobile Web page designs; just don’t rely on it exclusively. You can read more about when you can use style sheets in mobile Web design in Chapter 5.

Picking a Strategy for Different Devices

If you have the time, expertise, and budget, your best strategy is to design different versions of your Web site, each optimized for the different sizes and capabilities of various devices. Then set up a program on your Web server that detects what type of device each visitor to your site is using and directs them to the page that best serves their device. (You learn more about how device detection scripts work in Chapter 6.)

That doesn’t mean you need a different design for every device, which is a good thing because your visitor may be using any 1 of an estimated 8,000 plus kinds of mobile phones and other devices in the world. No, even with this strategy, what most designers do is

1. Create a few categories, or profiles, of devices, based on screen size, JavaScript support, and so on. (More on that in Chapter 6.)
2. Create a few versions of the site optimized for each category, or adapt one version to work on many different devices.

You find out more about this approach to designing for different devices in Chapter 6.

In the sections that follow, we explore the most common approaches to designing for the plethora of devices that access the mobile Web.

Create a simple version of your site

If you want to make sure that the largest number of visitors to your site can at least get the most important information on your site (such as your phone number when they’re on their way to your office), create a simplified version of your site designed to work on even low-end mobile devices.
This is the most cost-effective approach (after the do-nothing option), and it’s especially important if you have a site that uses a lot of multimedia or is designed in Flash, which doesn’t work at all on most mobile phones.

To make your site work, even on the most limited cellphone systems (think, unbelievably low bandwidth and a tiny screen that barely supports images, text, and links), you need to strip down your site to only the most important elements by limiting the home page to:

- One or two tiny images (if you have any at all)
- A little text
- A few links

A good example of a very simple mobile site design is Mark Jenkin’s Web site at http://mobilyn克斯.net (shown in Figure 2-3). Mark, a specialist in mobile devices who helped with some of the testing for this book, designed the mobilyn克斯 site to provide easy access to a directory of links to sites that are optimized for mobile phones. We explore this approach, creating one version of a site that works on most mobile devices, in Chapter 3.

Figure 2-3: This simple Web site design works on a variety of mobile devices.
Design multiple versions

The best mobile Web design strategy is to create more than one version of your Web site, optimized for different devices, and then automatically direct visitors to the best version for their device’s screen size and features.

This high-level solution can be achieved by creating two or more completely different designs, each at its own URL, or by creating one design that can be altered on the fly to best serve each device. This increasingly popular approach to mobile Web design is called content adaptation.

If you’re working for a site that needs to reach a broad audience — especially if you want to serve that audience with interactive features or multimedia — designing multiple versions of your site or using content adaptation is the best strategy for reaching the broadest audience most effectively. If you’ve guessed that these are also the most complicated options, you’re right.

A growing number of large national and international companies have created multiple versions of their sites using content adaptation or separate URLs or both. If you design a site for a big company, such as American Airlines, that has to reach a broad, diverse audience and provide highly interactive features with advanced security and other complex options, you have to create different versions of the site to deliver a good mobile experience.

When you opt to create multiple mobile versions, you can decide how specialized you want those versions to be. Consider the following examples:

✓ **Broad categories:** Some companies create just three or four versions optimized for each of the main cellphone categories — smartphones, touch phones, and feature phones. (We describe these in more detail in the section “Considering Device Differences,” later in this chapter.)

If you just want to make sure your pages look pretty good to most people, you can generally get away with creating just a few variations that target the main categories of devices. As shown in Figure 2-4, the Geek Squad site — one of the better sites on the mobile Web — delivers the same design to both the iPhone and the Droid, but a different version is sent to the BlackBerry Bold 9700.

✓ **Specialized profiles:** Some mobile Web developers create as many as a dozen or more profiles for mobile devices based on screen size, multimedia capabilities, and other factors. This level of complexity is generally best managed by doing content adaptation. In this model, designers use dynamic site capabilities to design pages on the fly. For example, as each device is detected and identified, a page is created to match the features of that device. By drawing from a collection of elements in a database, such as images in various sizes and video and audio in different formats, you can generate as many different combinations as you need to suit the devices that are used to visit your site.
Figure 2-4:
The Geek Squad site on three devices.
Design one high-end version

Many designers have decided that the only visitors who matter are the ones who’ve shelled out the money for a high-end phone, such as an iPhone, Droid, Palm Pre, or Windows Mobile device. Before you decide that looking good on smartphones is good enough, understand the arguments for and against this approach:

✓ **Argument for:** This strategy is based on usage statistics that show most of the people who actively surf the mobile Web today use iPhones, Droids, or other high-end smartphones.

✓ **Argument against:** The people using low-end devices still far outnumber the people using smartphones. Many people don’t surf the Web on low-end mobile phones because most of the Web is unusable on them. As more Web sites are optimized for mobile devices, the world will become more accustomed to finding information when it’s needed. If your site is still hard to access on the majority of low-end mobile devices, you’ll be left out.

The evidence used to make these cases adds to the confusion. Here’s an example: According to the mobile advertising network, AdMob, in April 2010, the iPhone was the device most likely to be used to surf your site, but it still represented only 19 percent of the global traffic to advertising on the mobile Web. That number approaches 30 percent when you add iPod users, and if you lump Droid phones into the mix, many sites now get close to 50 percent of their traffic from high-end phones.

But here’s the rub. One of the most striking things about traffic reports to most mobile Web sites today is that the list of devices that represent only 1 or 2 percent of the traffic is really, really long. That means that reaching the high end is relatively easy — design for smartphones and you may take care of as much as 50 percent of your audience — but reaching the low end, effectively, requires a complex strategy that can meet the needs of dozens or even hundreds of different devices, each being used by less than 2 percent of your audience, but combining to represent more than 50 percent of the traffic to most sites today.

Although we don’t think designing only for high-end smartphones is the best way for most Web sites to serve the broad mobile audience, if you know that your target market is likely to use a high-end phone, such as an iPhone or Droid, this may be a fine option for your Web site. Sites like Jasper Johal’s photography Web site (see Figure 2-5) look great on an iPhone, and because his site is designed to showcase his work to creative directors and other design professionals who might hire him as a photographer, he’s not overly concerned about providing an alternative design for people using feature phones or other low-end devices.
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Figure 2-5: Jasper Johal’s photography Web site looks good on an iPhone and a desktop computer.

Optimizing Mobile Web Site Designs

When you begin thinking about how best to design the mobile version(s) of your Web site, consider the unique challenges of the mobile Web covered in this section.

The key considerations to keep in mind while you design sites for the mobile Web are

✓ **Urgent need for information:** Many people resort to the mobile Web because they have to, because they’re lost or late, or because they really need to know who won the Super Bowl in 1987 to win a bar bet.

✓ **Limited real estate:** Mobile designs need to fit on small screens.

✓ **Low bandwidth:** Limit images and text so pages load quickly even at slow connection speeds.

✓ **Interface limitations:** Create links and other navigation options that are easy to click with a (fat) finger, stylus, or other limited input options.

✓ **Limited processing power and memory:** Large files and scripts that require fast processors won’t display well on most mobile devices.

✓ **Distracted users:** Navigating road or foot traffic is just one of many distractions that may compete for your users’ attention.

✓ **Time and place:** Don’t forget that your users’ actions are likely to be affected by where they are, what time of day it is, and even whether it’s raining. Make sure to include location-specific information, such as maps, and consider adding geolocation features, such as those included in the new HTML5 specification, covered in Chapter 5.
Designing for small screens

If every mobile phone had the same screen size, we might not have had to write this entire book about mobile Web design. Okay, there are many other considerations, but limited real estate is one of the most important to keep in mind. The chart shown in Figure 2-6 provides a quick reference to many of the shapes and sizes of the screens used to surf the mobile Web today. (There are actually even more, but these are the ones most mobile designers are targeting.) As you can see, there is no standard size for mobile devices.

Creating a single design doesn’t work if you want to take best advantage of the real estate available on each screen. Even smartphones that are 320 x 480 can be rotated, so you can’t assume that you’ll always have 480 pixels of width when a visitor lands on your site. You can find more specific information about the screen sizes of different devices in the section “Considering Device Differences,” later in this chapter.

![Figure 2-6: The most common mobile screen shapes and sizes.](image)

Sticking to bandwidth limitations

If you’ve been online long enough to remember the days when modem speeds clocked in at 14.4 or 28.8 Kbps, think back to how frustrating it was to wait . . . and wait . . . for a page to load. Although the 4G network promises great download speeds on mobile devices, too many cellphone users still make their way through the mobile Web at molasses-slow speeds.
When you design for the Web, try to keep the page sizes small (that is, limit the amount of data the entire page contains and what your visitors have to download to access your site):

✔ To reach low bandwidth users, keep pages to no more than 10–25K (yeah, we know that’s really, really small).

✔ If you know your users have high bandwidth (3G or 4G networks), you can get away with 150–200K, but that still makes it tough to include very much multimedia on your pages.

Navigating on mobile devices

If you’ve ever yelled at your computer in frustration knowing that it couldn’t understand you anyway, you’ll probably be delighted when you can start talking to it rationally instead, especially when it can fully understand you. That’s coming to the mobile Web soon, but full voice recognition isn’t here yet. In the meantime, keep in mind that mobile visitors to your site may have trouble navigating the links on your site if you don’t make them easy to click.

Your mobile visitors are most likely

✔ Touching the screen
✔ Tapping the screen with a stylus
✔ Entering information through a wheel, buttons, or a keypad

That means you need to

✔ Make links easy to see and easy to click. If you design multiple versions of your site, make sure you optimize for the input options on each device. If your visitors use a stylus, they can click links relatively close together, but if they use a touch screen, you need to separate links with enough space between them to make it easier to tap them with a fat fingertip.

✔ Limit the total number of links, especially on the low-end version of your site. Help people move through your site by leading them from one short list of links to the next until they reach the content that best serves them.

✔ Organize the levels of links. Don’t include too many levels with your links and consider adding breadcrumbs to help users find their way back through different levels of your site. Breadcrumbs are a list of links, usually added to the top of a page, that can help you identify where you are in the structure of a site with links to each section and subsection that appears above the page your are on in the site’s structure.
The BBC uses breadcrumbs effectively on its mobile site. In Figure 2-7, you can see the breadcrumbs just below the BBC Sport logo. The links represent each section of the site that the user has navigated through to get to the page. In this example, you can see BBC Home (a link to the home page), BBC Sport (a link to the main page of the sports section), and finally Tennis (a link to the front page of the Tennis section, contained within the sports section).

✓ **Provide a navigation menu instead of a navigation bar.** Although most desktop Web sites include a navigation bar that links to all the main sections of a site at the top of every page, that’s generally not the best use of the real estate on a small screen. Instead, consider including one link at the top of every page with a name like Menu, and then link to a navigation bar from that one link.

Including a list of links to all the main pages of your site on every page may not be worth the download time, but creating a small site map and including a link to that page from every other page on the site can provide a similar option. This strategy can also be used to include a list of links at the bottom of each page, with a Menu link at the top that “jumps” visitors down to the links at the bottom. (You find more on creating jump links in Chapter 5.)

✓ **Link from one site version to another.** Always good practice is to include a link on the front page of your mobile site to the desktop version and vice versa. Visitors to your mobile site may already be familiar with your desktop version and prefer to visit that full site, especially if they are using a smartphone, such as an iPhone or Droid.

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**Figure 2-7:**
The BBC mobile site design leads visitors through a series of links to find relevant content, and adds breadcrumbs to make it easy to return to section fronts.
Part I: Designing for Mobile Devices

Considering Device Differences

You’re probably catching on that the world of cellphones and other mobile devices lacks standards (technical standards, at least), but it does have some common themes. As you consider how best to design the mobile version(s) of your site, it’s helpful to start with at least a general understanding of the kinds of differences common among device categories.

Although some people opt for creating just one simplified version of their site for the mobile Web (a strategy covered in Chapter 3), keep in mind that unless you create multiple versions, you can’t really meet the needs of the different kinds of devices on the market. The next sections describe some of the key differences among the most common devices (and device families) in use today. In Chapter 6, you find more information on how to design different versions of your site for different devices.

Apple iPhone: The game changer

Apple, with its “there’s an app for that” ad campaign, captured the imagination of people around the world and made surfing the Web on a mobile device more appealing and more satisfying than ever.

Of all the mobile devices on the market, the iPhone (and its siblings the iPad and iPod touch) does the best job displaying desktop Web sites. The iPhone spoils you quickly if you use it to surf the mobile Web. Just keep in mind that not everyone on the planet can afford this fabulous device and that the Web looks far worse on most other mobile devices.

With the release of the iPhone 4 (as shown in Figure 2-8), the iPhone continues to improve, adding two cameras, mobile video conferencing capabilities, and a screen resolution that rivals anything else on the market. (Note: iPhone 4, sometimes mistakenly called the iPhone 4G because Apple called its predecessor the iPhone 3G, refers to the fourth generation of the product, not the speed of the network.) Therefore, if you design only for the iPhone, you have a great advantage. The mobile version of the Safari Web browser aims to display any desktop site as well as a desktop computer (and with the exception of the smaller screen size, it comes pretty darned close).

Specifications for the iPhone and iPad are

✓ Screen size: 320 x 480 pixels (rotates from portrait to landscape automatically)
✓ Usable display area: 320 x 480 pixels
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✓ Operating system: Proprietary iOS
✓ Browser (Safari WebKit): Supports XHTML Mobile Profile (MP) and CSS2, as well as most of the HTML5 and CSS3 specifications.
✓ Multimedia support: GIF87, GIF89a, JPEG, PNG, MIDI, MP3, 3GPP, and MP4 (see Chapter 8 for more on multimedia formats and support)

Google Android: Catching on fast

Although the iPhone has gotten all the hype in the last few years, Droid phones, which run on the Google Android operating system, started outselling iPhones in the first quarter of 2010 and are likely to continue to do so in the future. Many predict that Google could beat Apple with the Android operating system on the mobile platform in much the same way that Microsoft won on the desktop.

Because Android phones, generally shortened to Droid, can be created by many companies, they’re cheaper and available on more networks. And although the iPhone has a head start with its famous App Store, the Droid world of apps is catching up, and support for the mobile Web is solid and improving all the time.
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The list of phones that offer the Android operating system is growing, and one of the most popular phones today is the Motorola Droid (which can be used horizontally or vertically, and boasts a slide-out keyboard, as shown in Figure 2-9).

Specifications for the Motorola Droid are

- **Screen size:** 480 x 854 pixels (rotates automatically)
- **Usable display area:** 320 x 240 pixels
- **Operating system:** Google Android
- **Browser:** Supports XHTML MP and CSS2, and supports most of the HTML5 and CSS3 specifications
- **Multimedia support:** GIF87, GIF89a, JPEG, PNG, MIDI, MP3, 3GPP, and MP4

**RIM BlackBerry: So many to choose from**

Unlike the iPhone, which is nearly identical from version to version in terms of screen size and support for everything from multimedia to markup language support, the RIM (Research in Motion) BlackBerry varies dramatically from version to version. And so far, there are 87 versions. In fact, many mobile Web designers complain that there are too many kinds of BlackBerry.
phones to design for them as one category of phone. Worse yet, BlackBerry phones give users many options about what kinds of content they want to view on the mobile Web.

As a result, many sites, such as GameSpot (see Figure 2-10), include a link and instructions for how to optimize a BlackBerry phone to best display its site. You see this link only if you visit GameSpot with a BlackBerry, but it’s good practice if you include multimedia, JavaScript, or other high-end features on your pages.

Although we can’t give one set of specs for the BlackBerry, we chose the BlackBerry Bold 9700 (as shown in Figure 2-10) as an example.

Specifications for the BlackBerry Bold 9700 are

- **Screen size:** 480 x 360 pixels (rotates automatically)
- **Usable display area:** 460 x 348 pixels
- **Operating system:** Proprietary OS RIM
- **Browser:** Supports XHTML MP and CSS2
- **Multimedia support:** GIF87, GIF89a, JPEG, PNG, MIDI, MP3, 3GPP, and MP4

Figure 2-10: The GameSpot Web site includes a link to instructions for how to best optimize a BlackBerry phone when using its highly interactive mobile Web site.
Many developers would tell you that the Palm operating system is one of the best, but with such a tiny market share, it seems destined to the same obscurity suffered by so many other superior technologies over the years.

With the recent acquisition by computer giant Hewlett-Packard (HP), the future of Palm is even less certain. Today, 24 mobile devices are in the Palm family, including the Palm Pre, shown in Figure 2-11, but HP reports it won’t make any new mobile phones, although it will continue to support the ones sold so far.

Instead, most industry analysts assume HP will use the Palm OS to develop tablet devices like Apple’s iPad.

Specifications of the Palm Pre are

- **Screen size**: 320 x 480 pixels
- **Usable display area**: 316 x 480 pixels
- **Operating system**: Palm OS
- **Browser**: Supports XHTML, XHTML MP, and CSS2 and provides limited support for HTML5 and CSS3
- **Multimedia support**: GIF87, JPEG, PNG, MP3, 3GPP, and MP4
Windows Mobile: The Microsoft advantage

With the slew of new devices entering the market, Windows Mobile is getting more and more attention these days.

The number of mobile phones featuring the Windows Mobile operating system (such as the ones shown in Figure 2-12) is increasing, and this OS provides support for limited versions of Internet Explorer, Word, and other popular Microsoft programs.

Phones and other devices that run Windows Mobile generally support XHTML MP and CSS2, as well as audio, video, and JavaScript. Most also have large screen sizes, similar to the iPhone and Droid phones.

The Motorola RAZR and other feature phones

By many estimates, the majority of mobile phone users in the world are still restricted to low-end feature phones, like the Motorola RAZR. Although even these limited phones support XHTML MP, most display little or no CSS, and their low connection speeds can make multimedia nearly impossible to play.
In Chapter 13, we review ten sites we consider well designed for the mobile Web and include screenshots of those sites as shown on an iPhone, a BlackBerry Bold, and a Motorola RAZR. Looking through the figures in Chapter 13 will help you appreciate how limited the display area is on a small RAZR and why you should limit the content of your Web pages to just a few links and one small image when you design for feature phones.

**Symbian: The global phenomenon**

Outside the United States, the Symbian operating system is one of the most popular on the planet. If you want to reach the global market, you can’t ignore the Symbian operating system, estimated to be used by the largest audience worldwide. Although some of the newest phones that run on Symbian offer high-end features and multimedia support, the vast majority of phones that run on Symbian are low-end feature phones.

One of the distinguishing features of high-end Symbian phones is that unlike the iPhone, they support Adobe Flash (at least the mobile version, Flash Lite).

The sheer number of people who use Symbian phones around the globe makes this low-end audience tantalizing because of the potential for volume. Although Short Message Service (SMS), or text messages, may still be the best way to reach most Symbian phones, they’re improving in capabilities and increasingly supporting the mobile Web. (You find resources for conducting ad campaigns using SMS in Chapter 11.) We don’t include specifications for Symbian phones because, again, they range so dramatically from phone to phone, but if you create a simple mobile site, covered in Chapter 3, you can reach most of this audience just fine.

**Finding specifications for nearly any device at DeviceAtlas**

We reviewed the specifications of some of the most popular phones in the previous section to give you a general idea of what you’re up against and what you can expect visitors to use when they visit your Web site. But this is just a small portion of the kinds of devices on the market. If you want to know about more phones, check out DeviceAtlas at [http://deviceatlas.com](http://deviceatlas.com); see Figure 2-13. This Web site is a virtual treasure trove of mobile device data, including a comprehensive guide to the specifications of a wide range of mobile devices in use around the globe.
Beware of dumbphones

One last word of warning when reviewing mobile phone specifications. *Dumbphone* isn’t a term we made up; it’s an actual industry term that refers to feature phones dressed up to act like smartphones (with a touch screen, fancy hardware, and so on) without really supporting everything they might appear to support.

Dumbphones almost always have browsers that claim to support Web standards but have such flawed implementations that even the best-designed mobile sites may not display well on them. Don’t take it personally. If you run into dumbphones and they don’t like your otherwise well-designed pages, send them a low-end version of your site as if they were feature phones.

Making a Mobile Site Search-Engine-Friendly

After you go to all the trouble of making your Web site mobile-friendly, don’t forget to make it mobile search-engine-friendly as well. Although many of the same rules of search engine optimization (SEO) apply, you need to understand a few key differences and special additions, as well as a few things you shouldn’t do on your mobile site if you want to be included in mobile search engines, such as Google’s, as shown in Figure 2-14.
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Figure 2-14: Most of the major search engines offer mobile-optimized search options, but Google has one of the most advanced mobile search services.

Here are some do’s and don’ts for mobile SEO:

✓ **Do add a meta tag that identifies your site as mobile.** Search engines, such as Google, are much more likely to find your mobile site, and deliver to mobile devices, if you include this piece of code in your pages. Just enter the code below, exactly as it appears, anywhere between the `<head>` and `</head>` tags at the top of your mobile-optimized Web page:

```html
<meta name="HandheldFriendly" content="True" />
```

✓ **Do make sure your XHTML code is valid.** This is even more important on the mobile Web than on the desktop Web. Take the time to run your site through online validators, like the ones at the W3C, and make sure you code is up to snuff. (You find more on testing and using code validators in Chapter 7.)

✓ **Do register your mobile site with search engines.** Mobile search engines, such as Yahoo!, shown in Figure 2-15, feature mobile sites, but only if they know that they’re there. Make sure to submit your mobile URL. (You find a list of mobile search engines in this book’s Cheat sheet; see the inside front cover for details.)
✓ **Don’t stuff in extra keywords.** Although keyword stuffing is a popular strategy in the world of SEO, it’s increasingly frowned upon by search engines. Plus, it’s downright self-sabotaging on the mobile Web where every word counts and adding extra words can cost you in valuable download times.