Chapter 8

Using Images and Multimedia in Mobile Designs

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▶ Understanding screen resolution, color depth, and aspect ratios
▶ Optimizing images and audio for the mobile Web
▶ Inserting images into mobile page designs
▶ Creating mobile-friendly slide shows and galleries
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Just two decades ago, the predominant way that pictures and phones interacted was when an unruly 4 year old used a crayon to draw on the handset; as for video, the involvement was pretty much limited to chucking the device at the TV, hoping to hit the Off button when your legs fell asleep on the couch.

How times have changed.

According to Nielsen’s “Three Screen Report,” nearly 50 percent of mobile phone users have watched video on their handsets, with teenagers leading the way at about seven hours a month spent staring at tiny screens with headphones crammed in their ears, immersed in what researchers dub cocooning media.

Meanwhile, the widespread inclusion of increasingly higher-resolution cameras onto mobile devices has resulted in forests of hands upraised at just about any noteworthy public event as the crowds of people use their mobile phones to take pictures or record video.

People use their mobile devices to record, play, and share the significant experiences in their lives, the way that an earlier generation used Polaroid pictures or scrapbooks to capture moments in time. The challenge for designers is that in the last decade, everyone has taken it for granted that we can put all manner of media onto Web sites, as increasing broadband penetration, disk storage, and display resolution have made the browsing...
experience almost as quick and rewarding as changing channels on an HDTV. It’s almost commonplace for movies and TV shows to use audio, video, and wild animated “splash” pages that load in Flash before the rest of the site is displayed.

If you’re old enough to remember the early days of the Internet, just seeing a photo-realistic image appear on a full-color monitor was a thrill. We aren’t saying that the mobile Web has to go back to those days (even though many experts say that a good way to think of designing for mobile is to pretend it’s 1996, the era of 56K dialup modems).

Although the multimedia that spices up Web sites can be problematic on the mobile platform, that doesn’t mean you can’t use multimedia at all. In this chapter, we explain the best strategies to make your mobile Web sites dazzle, despite the constraints.

Understanding Screen Resolution and Color Depth

Before we talk about putting visual elements onto mobile device screens, we need to take a moment to define some of the essential terminology. If you’re new to creating multimedia for the Web, understanding these basic concepts can help you when you optimize photos, videos, and more for your mobile site design. If you have a good grasp of display technology, consider this a review. If you’re anxious to get into the meat of this chapter, skip to the section “Optimizing Images for the Mobile Web,” later in this chapter.

This chapter explains basic concepts and options that work well in mobile Web designs. For steps that explain how to set these options by using a graphics editor, such as Photoshop or Photoshop Elements, flip to Appendix B.

Color depth

Color depth refers to the number of colors a screen can display, generally referred to by the number of bits. Each pixel on a display has a numerical value; for example, 1-bit color means that the pixel could be either black or white. That pixel would either be on (white) or off (black). The color depth then increases in binary (computer language) code. For example, 8-bit color is $2^8$, or 256 colors.

You can choose or change an image’s color depth in a graphics editor. Here’s what you need to know about color depth when you design for different phones:
Feature phones: Many low-end feature phones still display in 8-bit color, which gives images a vaguely cartoony look.

Smartphones: Most smartphones use the same standard as desktop and laptop computers, and display in 24-bit color, which translates into 16,777,216 possible colors.

Some very high-end graphics cards support 40- and 64-bit color (281.5 trillion possible colors), which most sane people would argue is overkill for a device that might be viewed in bright sunlight or under sickly fluorescent lamps.

Web designers have worked for years to master the art of compressing JPEG images or reducing the number of colors in GIF and PNG files to make them download faster. On the mobile Web, optimizing images so they download quickly is even more important. The more you can restrict your color palette, the smaller the file sizes of your images and the faster the page loads.

Screen resolution

Hand in hand with color depth, screen resolution is the other factor that affects how crisp and lifelike the images appear. You’re probably more familiar with the calculations and proportions relating to screen resolution because they’re the type of thing that monitor manufacturers like to tout when marketing their products.

As you might expect, the screen resolutions on mobile devices are nowhere near as large as on desktop or laptop computers. A good, new, LCD monitor or laptop display probably clocks in at around 1920-x-1080-pixel resolution.

The highest-resolution mobile devices as of this writing are 960 pixels wide, and many mobile phone displays are restricted to 120 pixels wide.

Aspect ratios and orientations

The problem with mobile displays is that not only are they in different resolutions, but they’re also in different aspect ratios, which can be affected by the way you hold the device. First, look at aspect ratios: A standard TV displays video in 4:3 aspect ratio (or 1:1.33). This is the almost-square format that generations of boob-tube addicts know and love. Basically, for every 4 pixels across, 3 pixels are down. So the standard-definition TV signal is 640 x 480. Recently, with HDTV, there’s been a move to 16:9 aspect ratio (or 1:1.85). This ratio is also dubbed widescreen, and a common resolution is 1280 x 720.

The fun starts when you design mobile Web sites, which display on screens with different aspect ratios:
Feature phone aspect ratios: These vary. For instance, the Motorola RAZR, in which the display is built into a clamshell-style unit, is tall and skinny with a resolution of 176×220 pixels, which breaks down into the unwieldy resolution ratio of 49:55. Many Nokia models have screens that are 176×144 in resolution. These narrow and tall feature phone screens are still massively popular in emerging markets, and designing for them is one of the more challenging tasks you can face.

Smartphone aspect ratios: Fortunately, the trend is that new smartphones come out in more standard resolutions, such as 320×240. Astute mathematicians may note that this is exactly half the resolution of standard-definition TV. Online video addicts may note that this is the resolution used by YouTube for most of its early existence — hardly a coincidence given the increased demand by users to watch at least some rudimentary video on their handsets.

Further complicating the situation is the increasing use of accelerometers in handsets that detect when the phone is held upright (portrait mode) or tilted sideways (landscape), and the soon-to-be-common touch-screen phones with ultra-high display resolutions of 960×640.

For a sample of all the possible permutations of display capabilities, check out the list of more than 8,000 devices maintained at DeviceAtlas (http://deviceatlas.com/user/10138).

Optimizing Images for the Mobile Web

Just as there is a world of difference between the images for print designs and the images used on the desktop Web, so is there a difference between images on the desktop Web and the mobile Web. In both cases, moving to the newer platform means having to adjust images to have the best quality while taking up the smallest possible file size. In this section, we’ll guide you through the process of taking images meant for the desktop Web and processing them so that they still look decent on mobile devices.

Sizing images for small screens

Cramming your 360-degree panorama photos onto a tiny feature phone’s screen makes no sense. Not only would the photos not display correctly, but that files alone would probably eat up the user’s entire monthly data plan allowance (and take a day to download). Your designs need to honor the constraints your users labor under and give them the option to click through to higher-resolution images only if they want to see them, rather than forcing visitors to download large images on the home page of your mobile site.
If you plan to put images on your mobile Web site, the design process goes more smoothly if you have a strategy to handle the different screen resolutions and aspect ratios on mobile devices. If you’re designing just one version of your Web site for the mobile Web (as described in Chapter 3), you can get away with optimizing just one small version of each image that will work on most screen sizes. If you have the resources to develop more than one mobile version of your site, as we cover in Chapter 6, your best option is to create several versions of each image, optimized for different screen sizes, and then deliver the best version of the image to each device. The following sections explain strategies for sizing your image files, depending on the design strategy you choose.

**Sizing one image to fit most screens**

A practical and timesaving way to create images optimized to work on a particular handset and operating system is to create one simple Web-optimized image that displays on the majority of phones. You rely on the browser rendering engine on the phone to perform the resizing tasks. Although this isn’t a foolproof method, most mobile browser creators know the browser needs to access a wide variety of sites and content, and they build rendering engines that transcode (or transform) that content so it displays more or less correctly onscreen. (For an introduction to how transcoding works, see Chapter 2.)

**Using multiple image sizes**

If you have the resources and time, the best solution is to tailor a site to each handset’s capabilities. With this approach, you create multiple versions of each image in different sizes, from 120-pixels wide to 640 pixels, and then deliver the size that best fits the device with some kind of device detection script, as we describe in Chapter 6.

This is obviously much easier said than done, particularly if you’re trying to keep a dynamic site such as the Huffington Post or ESPN updated with fresh content on a daily (or even hourly) basis.

If you design a portfolio site — where the whole point is to empower your client to show off images of his work anywhere, anytime — you may have a legitimate need to include higher-resolution images with larger file sizes. The best way to handle this situation is to link to the larger images from thumbnails or short text descriptions on the home page, or in the main portfolio section of your site. That way, your most important pages load quickly with small versions of your images that can be viewed by all your visitors, and those who are interested in (and have devices capable of handling) high-resolution images can choose to download them.
If you have a lot of images that need to be resized (for example, if you have a fashion portfolio in which the clothing designs are updated each season), you can automate the process of resizing and optimizing images using the Actions panel in Photoshop (for detailed instructions about setting up actions to resize many images at once, see Appendix B).

**Choosing an image format**

If you work with photos or other images with millions of colors, the JPEG format is your best choice for the mobile Web, just as it is for the desktop Web. With JPEGs, you can make the file size smaller by applying compression. The more compression, the smaller the image, but if you compress the image too much, the image can look like it was sandblasted and left out in the sun. For more about the differences among the various image formats and tips on how to best convert an image to a mobile-friendly format, see Appendix B.

For images with limited colors, such as line art, logos, and cartoons, the best format for mobile devices and Web pages is PNG. Some designers will tell you that the GIF format is the safer choice for very old mobile devices and some low-end feature phones, but the vast majority of phones surfing the mobile Web today support the PNG format, and this format does a better job at maintaining image quality and small file sizes than GIFs. With both GIF and PNG files, you optimize (or reduce the file size) by reducing the number of colors. You find detailed instructions for optimizing GIF, PNG, and JPEG files using the Save for Web and Devices dialog box, discussed in Appendix B.

Fancy image effects, such as transparent GIFs and PNGs, that are precisely laid out with text wrapped around them are extremely iffy on low-end feature phones and older mobile devices. Mobile browser rendering engines are likely to display the image and text on top of each other, to break apart the words letter by letter, to show the text in narrow vertical lines, or to just have a nervous breakdown and display nothing at all. You’re better off simplifying the design for the mobile site, choosing a design that doesn’t require transparency, or both.

**Keeping file sizes small**

After you know how to optimize PNGs and JPEGs and appreciate the goal of making them as small as possible, you may ask, “How small is small enough?”
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Mobile Web designers obsess over ways to make their page sizes smaller, without crossing the invisible line between “loads too slow” and “looks junky.” Although this is a mostly subjective judgment call, the following points are good to remember:

- **The larger your graphics files, the longer people have to wait for them to download before they can see them.** You may have the most beautiful picture of Mount Fuji on the front page of your Web site, but if it takes forever to download, most people aren’t patient enough to wait to see it.

- **When you build pages with multiple graphics, you have to consider the cumulative download time of all the graphics on the page.** Even if each image is a small file size, they can add up. Unlike most other things in life, smaller is definitely better on the mobile Web.

- **Limit a mobile Web page to about 25K, although you can get away with larger sizes if you design for smartphones on a 3G or 4G network.** In contrast, most Web pros consider anything from about 75K to 150K a good maximum cumulative size for all the elements on a page designed for the desktop Web. Without getting too technical, the most basic 2G data connections range from about 80 to 100 Kbps, meaning that a 150K desktop page in this size range takes up to 20 seconds to transmit (and possibly a few seconds longer for the mobile device’s CPU to process and render). Most mobile users get frustrated and abandon a page that takes that long. The 3G and 4G networks promise data speeds that range from 14 Mbps to 1 Gbps, although the actual speeds delivered to customers is the subject of some rather fierce debate.

Dreamweaver makes it easy to determine the total file size and download time of your page:

- **A page’s total file size** appears in the status bar at the bottom of the document window, as shown in Figure 8-1. In the small text at the bottom of a Web page, the status bar shows the total size of all the images, text, and code on the page. In the figure, at more than 100K, this page is far too large to download efficiently over most mobile connections.

- **The download time**, based upon a particular connection speed, also appears in the status bar. You can change the connection speed by choosing Edit→Preferences→Status Bar→Connection Speed. On a Mac, choose Dreamweaver→Preferences→Status Bar→Connection Speed.
Resizing images in *WordPress*

If you use the *WordPress* blogging tool, depending on how large the image you are embedding in your blog is, you can specify up to three sizes for images. When you upload an image to the media manager, *WordPress* automatically resizes the image to small, medium, and large sizes. You can specify the dimensions of those three options in the *WordPress* Dashboard administrative tools. *(Note: If the image you upload is already smaller than the specified option, the blogging software pretty much doesn’t bother with it. If the image is larger than the largest size, the original size is preserved as a fourth option.) If you are designing your blog for the mobile Web, one approach to managing image size is to take advantage of this automatic resizing function by setting the small photo size to the dimensions for a low-end phone (240 pixels is a good choice), the medium to the dimensions for a high-end phone (320 pixels is a good choice), and the large size to best fit the desktop version of your site (the best size will depend on the design of your site).

You can change the specified sizes on the Media Settings page in *WordPress* Dashboard. To find these options (as shown in Figure 8-2), open the Dashboard and then choose Settings->Media. Many of the plug-ins we cover in Chapter 9...
take care of image resizing, but setting the default images sizes to what you want to use on the different pages of your blog is a good practice and a great way to automate the delivery of differently sized images to different devices.

Automating image resizing in Adobe Photoshop

Optimizing images for the Web is time-consuming enough (you find detailed instructions in Appendix B), but if you need to optimize multiple versions in multiple sizes, you can waste hours on this task if you try to resize each one manually.

Luckily, Photoshop, the most popular image-editing program, makes it possible to resize images automatically by creating Actions (macro scripts that automate a series of steps; see Figure 8-3). In Photoshop, you can create Actions with the Actions panel. Creating Actions takes some concentrated attention, but after you set them up, you can save lots of time when you create multiple versions of images. You find detailed instructions for creating Actions to automate the process of resizing and optimizing images in Appendix B.
Inserting Images into Mobile Page Designs

You can insert images into pages designed for mobile devices just as you would insert them into any other Web page, using the HTML image tag. The HTML image tag is supported by nearly all mobile devices, making it relatively easy to include images in the display area of nearly any mobile phone.

The following is a well-crafted image tag that will insert a photograph that is 280 pixels by 55 pixels in size and saved as a JPEG:

```
<img src="GoldenGateBridge.jpg" alt="Golden Gate Bridge" height="55" width="280" />
```

Here are a few best practices when inserting images into any Web page. These are especially important when you’re designing for the mobile Web:

- **Use ALT text.** Make sure to include Alternative text to describe the image. Because many mobile phones include the option to turn images off, the Alt text may be all that your visitors see. If you insert a logo or other image with text, make sure to include the text in the Alt field of the image tag (as shown in the image tag code example above).
Limit the size of images. It’s best to use a relatively narrow width, 280 pixels or smaller, to fit within the limited space of most mobile screens. When designing for the smallest mobile devices, you can specify the width using a percentage so that the image automatically adjusts to the screen size. For example, if you set the size attribute in the image tag to width=95%, the image will fill 95 percent of the width of the display area. If you use a percentage for width, you don’t need to specify a height.

Specify a height and width for each image. Using the height and width attributes, as shown in the image tag code example above, helps Web browsers load pages more quickly because they don’t have to download each image to determine the height and width.

Use supported image formats. Most devices display GIF and JPEG images. Increasingly, mobile devices also support images in the PNG format, and some even support animated GIFs.

Creating Mobile-Friendly Galleries and Slide Shows

Many desktop Web sites feature galleries and slide shows. Unfortunately, many of these implementations rely on Flash to work, and as you might be aware of by now, many mobile devices don’t support Flash. Slide shows usually differ from galleries in the following ways:

Once you click on the “Play” button on a slide show, the images cycle through in the order that the creator of the slide show set up, and as rapidly (or slowly) as that person decided was optimal. Good slide shows have buttons that you can push to advance to the next picture, to pause, or to skip backwards. Bad ones replicate the experience of being trapped in some boring relative’s basement, forced to watch hours of bland vacation photos.

Slide shows often incorporate some kind of accompanying sound that goes with the photos; this can be a voiceover, explaining what the photos are about, or a musical track. Adding sound to the photos means that the photos have to be synced to appear and disappear to the cues in the soundtrack, which can be tricky.

Galleries tend to be more passive. Usually, there’s an array of thumbnail shots of the photos, and when users click on them, the photo selected expands to fill most of the page. Some galleries do use Flash or Microsoft’s Silverlight technology to animate the transitions from one image to the next.

One of the best options for smartphones and touch-screen phones is to create slide shows or galleries with JavaScript. Although not all phones
support JavaScript — and even some that do (BlackBerry phones, for example) aren’t consistent about their support and allow users to turn off JavaScript if they prefer — most of the recent generation of Web-enabled phones can handle galleries and slide shows designed with JavaScript.

If you know enough about JavaScript, you can create your own scripts, but many programs can help. The following sections introduce a few options for galleries and slide shows, as well as a cool way for you to create a photo gallery using your mobile phone camera, where the photos you take are shown with little markers on an online map.

Make sure the photos you add to any gallery you create are optimized for the mobile Web, as we explain earlier in the section, “Optimizing Images for the Mobile Web.”

**Finding a gallery plug-in or service**

Here are a few programs, plug-ins, and online photo services that you can use to spruce up your mobile site with slide shows and galleries:

- **Flickr**: ([www.flickr.com](http://www.flickr.com)) One of the most popular photo-sharing sites, Flickr makes it easy to upload photos to its server and to display them on any site in a variety of ways. Flickr does a great job on many high-end mobile devices, such as the iPhone, shown in Figure 8-4, but doesn’t always take best advantage of the display space, even on high-end phones, such as the Motorola Droid, shown in landscape view in Figure 8-5. To embed a slide show of Flickr images in any Web page, navigate to the Flickr photostream you want to add to your site, click on the Slideshow link, and then click on Share. On the share page, click on the Customize This HTML link to open a page where you can specify the dimensions for the slide show. After you adjust the settings, you simply copy the HTML code from Flickr in your Web page.

- **SmugMug**: ([www.smugmug.com](http://www.smugmug.com)) This photo-sharing site offers some very cool tools to customize the way your galleries display on your site. You can choose whether first time visitors to your site see a banner prompting them to switch to the lightweight mobile version. You can also password-protect the photos in your galleries, and SmugMug has an integrated shopping cart to allow you to sell your photos as well.

- **Jaipho**: ([www.jaipho.com](http://www.jaipho.com)) This JavaScript gallery is designed for the iPhone and makes it easy to create a gallery that mimics the look and feel of the original iPhone Photo application. You can quickly scroll through photos, both vertically and horizontally. Just tap a photo to enlarge it and then tap again to return to browsing. Jaipho includes a companion application — *Pipho* ([www.jaipho.com/content/pipho-php-image-gallery-iphone](http://www.jaipho.com/content/pipho-php-image-gallery-iphone)) — which is installed on the server to make it easy for users to add images to galleries by uploading them.
Figure 8-4: Flickr delivers a special version of the site to iPhones and does a good job of optimizing images for the iPhone display.

✓ **Dreamweaver extensions:** ([www.adobe.com/exchange](http://www.adobe.com/exchange)) As we write this book, none of the extensions on the Adobe site are designed specifically to create JQuery or AJAX features for mobile devices, but if you design pages for high-end phones, most of these extensions create code that displays on iPhones and other touch-screen phones or smartphones. Extensions are little plug-ins or widgets that you can add to Dreamweaver to empower it to do things that weren’t included in the original program.

✓ **Shadowbox:** ([www.shadowbox-js.com](http://www.shadowbox-js.com)) If you use a WordPress blog, Shadowbox is one of the most popular and flexible plug-ins. Shadowbox handles images and video (although if your video is in a format incompatible with the device, it won’t solve this conflict). With Shadowbox, you can easily scroll through a gallery of images. The JavaScript displays well on most high-end phones, but the results vary, depending on how the device handles JavaScript.
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Figure 8-5: Flickr doesn’t make the most of the space on all devices, leaving a lot of wasted space between the photo and the thumbnails on this Droid.

In Figure 8-6, you see how a photo in Shadowbox displays on an HTC touch-screen phone. In this example, the image isn’t scaled properly, so you see a very small image on this relatively high-resolution screen.

✓ Visual LightBox: This free plug-in is similar to Shadowbox, but it works on sites that don’t have WordPress installed. You can also set Visual LightBox to import images from Flickr.

Creating mobile slide shows in the 3GP format

3GP is the name for files encoded with specifications developed by the 3rd Generation Partnership Project (3GPP). The video codec used is pretty much the same as MPEG-4; it’s a media container that’s playable on 3G phones, although some 2G and 4G phones also play it. Files in this format have the .3gp file extension. A version of 3GP exists for CDMA-based phones, dubbed 3GPP2; files encoded with this standard have the extension .3g2.
When you create slide shows for the mobile platform, use the image-optimization measures we explain in the earlier section, “Optimizing Images for the Mobile Web,” to create folders of photos appropriate for the devices you target. Additionally, follow the guidelines in the following section, “Optimizing Audio for the Mobile Web,” to encode your audio files so they play smoothly on mobile devices. Here are some programs and sites where you can create a slide show that plays on anything but the most basic feature phones:

✔ **Animoto** ([http://animoto.com](http://animoto.com)) This online service allows you to upload photos, choose from themes and fancy transitions, and add music from its library. You’re limited to slide shows of only 30 seconds in duration unless you pay $30 a year to upgrade to Animoto’s professional level.
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Adobe Premiere Elements: (www.adobe.com/products/premiereelements)
This is the simplest video-editing program that exports to the 3GP format. If you’re new to video editing, Premiere Elements has an Instant Movie feature that automatically takes your images and adds fancy transitions and effects to the presentation. Adobe Premiere Elements costs about $80 (although you may find promotions and deals, sometimes packaging Premiere and Photoshop Elements together). Adobe Premiere Elements 8 For Dummies, by Keith Underdahl, can guide you through the basics of editing and exporting video in this program.

DVD-Photo-Slideshow.com: (www.dvd-photo-slideshow.com)
This program allows you to easily create slide shows and export them to a variety of platforms, including 3GP. This program is specifically designed to help you easily create fancy slide shows for a variety of distribution platforms, and it includes many transitions and effects, although many of them are aimed more toward the family market. A free trial is available on the Web site, and the program costs about $60.

Adobe After Effects: (www.adobe.com/products/aftereffects)
This is a rather high-end solution, and many professional media companies that give presentations use After Effects to make their slide shows have that stunning, television-commercial look and feel. After Effects exports in 3GP, MP4, and just about any other video format you can think of, although the learning curve for this program can be kind of steep. The current version of After Effects costs about $999.

Mapping a photo gallery
A fun way to get users more engaged and take advantage of the unique powers of the mobile Web is to create a photo gallery in which pictures taken with a mobile phone can be uploaded and displayed on a Google map that automatically places the photos where they were taken.

You could build all this functionality by hand-coding scripts that take the GPS data encoded in the latest digital photos, but Google has already built sites and scripts that do this for you for free, so why reinvent the map?

Many mobile sites benefit from including maps, because location is so important to mobile users. You can make your maps even more interactive and useful by combining them with photos. Whether you’re looking for an easy way for you to add photos to your own maps, or you want to open up the maps on your site to your online community, combining the power of Google’s free Picasa photo-sharing service (see Figure 8-7) with Google Maps (as shown in Figure 8-8) is a powerful, easy, and cost-effective option. (Did we mention it’s free? All you have to do is sign up for a free Google account.)

Adding photos to maps is a great way to improve the directions on your Web site. For example, if you’re creating a site for a restaurant that’s down
some tricky side streets, with a blind entrance from the parking lot, just use this process to create a map that potential customers can follow along with on their mobile device to show not only where the restaurant is located on the map, but also a picture (or a series of pictures) that shows the street-level view of where customers should park, how best to enter, and any other useful details.

![Figure 8-7: Because Picasa and Google Maps are integrated, you can upload images from your phone to Picasa and have them automatically appear on your Google Maps.](image1)

![Figure 8-8: The Google map with a thumbnail of the photo from the Picasa Dropbox.](image2)
If your Web site serves a community, such as a travel club, marathon racers, or any other group that likes to share photos, the nifty features at Picasa make it easy for anyone to upload photos from a cellphone and automatically create photo galleries. If the phone includes geo data (most smartphones do), you can add photos automatically to a Google map. Then when your travel club members are taking photos out the window on their next road trip, everyone on your site can see the photos in real time and track where the club members go by following the photos across a map.

If you already have a Gmail account, you’re already signed up for Picasa and Google Maps. If you don’t have a Gmail account, sign up for one at http://picasaweb.google.com before following these steps.

To set up Picasa so that you (and anyone you share your account with) can automatically upload photos from a phone, follow these steps. (To then add your photos to a map, continue with the instructions in the next section.)

1. Log in to your Picasa account with your Google user ID and password and then click the Settings link in the upper-right corner.

The User Settings page opens.

2. Click the General tab and specify the options you want.

You can set your nickname, upload a profile picture, and change the URL for your photo gallery.

3. Select the Allow Me check box to upload photos by e-mail.

You must select this check box if you want to send photos directly from your phone.

4. In the Enter a Secret Word field, type a secret word.

This secret word is used as part of the e-mail address for you or your users to send photos to Picasa. The secret word must be 6–15 characters, and it looks like this when you use it as an e-mail: YourName.Secretword@picasaweb.com. You can see the address appear below the secret word box while you type it in.

Any photos sent to this e-mail address are published automatically in your or your client’s Picasa photo feed. This opens the possibility that some prankster could upload objectionable photos, so be careful to use a secret word that’s hard to guess and only give this address to people you trust.

5. Click the Save Changes button and then e-mail a photo from your mobile device to the address you generated from Picasa that includes the secret word.

The subject line for your e-mail is the headline. Just attach the photo or image to the e-mail as you normally would from your mobile phone.
If your phone has a newer digital camera with a GPS sensor in it, you can add your photos to a Google map by continuing the Picasa setup process with these steps:

1. **Click the My Photos tab in Picasa.**
   The page with your photo albums opens.

2. **Click the Drop Box album and then choose Edit ➤ Album Properties.**
   The Edit Album Information window opens. You can edit the title and fill in a description of the gallery.

3. **In the Share drop-down list, choose Public and then click the Save Changes button.**

4. **On the right side of the screen, right-click the RSS link and choose Copy Link Location.**

5. **Open a new tab in your browser and navigate to http://maps.google.com.**
   The Google Maps page opens.

6. **Press Ctrl+C (on a Mac, Command+C) to paste the RSS link into the Search Maps field.**
   This causes little pins to appear on the Google map, and the pins correspond to the places where you took the photos. See Figure 8-8 for an idea of how this will display on the map. Clicking a thumbnail brings up a larger version of the image, along with the latitude and longitude, the title of the photo, and the option to view the photo at full size.

7. **In the top-right corner of your Google map, click the Link link.**
   The Link dialog box opens.

8. **Do either of the following with the code:**
   - *Send the link to this map to your friends via e-mail.*
   - *Embed code that allows you to add this live map of all the places you take photos of to any blog or Web site.*

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**Optimizing Audio for the Mobile Web**

Getting sound to come out of your phone seems like a no-brainer, right? After all, phones were pretty much designed to play sounds — if they didn’t, everyone would walk around shouting into these plastic rectangles for no real reason. The key here is that increasingly, phones come with decent-quality headsets (or earbuds) that allow users to listen to songs and podcasts in stereo. Although the iPhone has definitely accelerated this trend, other mobile devices played music long before Apple’s game-changing device hit the market.
Most enlightened Web designers know that users get annoyed when you set up Web pages to automatically play cheesy 8-bit MIDI songs that sound like the soundtrack to an ’80s vintage video game. But there are valid reasons to include audio on your mobile Web site. If you haven’t already added audio content to the mix on your Web site, here are some possible innovative uses for audio that mobile users might want to have at their fingertips — for convenience, to pass the time productively, to better answer a question, or to solve a crisis situation while they’re away from the home or office:

- Nature sites could include examples of birdcalls or wild animal noises, so birdwatchers can identify birds (or grouchy mama bears) by sound when they’re out in the field.
- A bed-and-breakfast could have a site that provides instructions for motorists who are driving, who can’t (and shouldn’t) take their eyes off windy country roads to constantly check the small print on a mobile screen.
- A religious site that wants members of the congregation to hear the latest sermon, hymns, or meditation.
- Health sites may want to demonstrate exactly what a dangerous whooping cough sounds like as opposed to just the flu.
- Musicians can provide short teaser clips of their works to incentivize fans to click to download a higher-quality version.
- A health and fitness site in which a personal trainer talks users through a special workout program that they can follow along with at the gym.

In the following sections, you discover the basics you need to know if you want to add audio to your mobile site.

**Figuring out formats, file size, and more**

As with any other multimedia, the biggest challenge comes from the fact that the capabilities, bandwidth, memory, and wireless connection speed are uneven and unpredictable across different devices. The good news is that unlike so many other multimedia elements, there is one format for audio that nearly every device is equipped to play: MP3.

MP3 doesn’t provide the best compression codec (the mathematical formula that takes an audio file and reduces its size). In fact, music engineers groan and rub their temples when forced to listen to what highly compressed MP3s played through tiny speakers sound like. But MP3 is pretty much a universal standard just because so many people have used it for so long. Thus, the main choice is how much to compress your MP3 to make sure that a mobile user can play it?
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Essentially, you compress an audio file in an audio editor by setting the bitrate for the file. **Bitrate** — a measure of the file’s audio quality — is the number of bits of digital information per second that is decoded and turned into a sound. In much the same way that reducing color depth in images (which we describe earlier in this chapter) represents a tradeoff between quality and file size, so too does bitrate work for audio files. Bigger is usually better, up to a point. The following explains the differences in bitrate for the desktop and mobile Web:

- **On the regular desktop Web, bitrates range from 96 to 320 kbps.** Professionals consider 96 kbps (kilobits per second, sometimes referred to as kbit/s, or even abbreviated to just the capital “K”) adequate for a file that contains human speech, such as an interview or monologue. Until recently, 128 kbps was considered standard for music, and the vast majority of songs sold on iTunes were at this bitrate; however, sites like MOG (www.mog.com) are making a name for themselves by offering music at 320 kbps or higher for true audiophiles.

- **For the mobile Web, aim for 64 kbps or lower.** The giant music-streaming service Pandora has found that 64 kbps is the highest practical bitrate due to bandwidth and dropout constraints.

### Streaming audio versus downloads versus podcasts

You can enable your mobile user to access your audio files in a few ways:
Streaming audio refers to a process whereby the audio files are transferred continuously, bit by bit, to the mobile device while the user listens. The file isn’t saved on the device but is sent to the user every time she requests it. This option is the best for low-end feature phones that have very little (or no) memory to store files for playback. However, to stream audio, you need to clear complicated technical hurdles (which we explain in the next section) to ensure that the audio files play as promised.

Downloadable audio is a file that, not surprisingly, you download and then play on your mobile device without being connected to the wireless Web.

Podcasts are downloadable audio files with a Really Simple Syndication (RSS) tag that allows users to subscribe to the podcast so that every episode of the podcast series downloads automatically. Creating podcasts is beyond the scope of this book, but you can find free videos and tips for creating podcasts at www.dummies.com. For a more in-depth look at podcasting, check out Podcasting For Dummies, 2nd Edition, by Tee Morris, Chuck Tomasi, Evo Terra, and Kreg Steppe.

Linking to audio files

Providing a link so your visitors can download an audio file is the simplest option, especially compared to streaming audio. We recommend linking to audio files rather than using the <object> tag, which is more common on the desktop Web. Even some of the best designed mobile sites that feature audio, including National Public Radio, link to audio files rather than inserting them directly into a Web page.

Linking to audio from a mobile site works the same way it does on a desktop Web site: You upload the audio file to a folder on your Web server (or to the content-delivery network or CDN that you use). Then you simply insert a link to the audio file in any Web page in your site. A link to an audio file looks like this:

```html
<a href="http://www.YourSite.com/audio/YourSong.mp3">Click to play my song!</a>
```

The long-awaited HTML5 standard promises to simplify the process of adding audio and video to Web pages. Unfortunately, until the HTML5 standard is adopted by the majority of mobile devices, we recommend sticking with the simplest options for maximum compatibility. If you use device detection and content adaptation (see Chapter 6) to direct the users of the latest smartphones, then HTML5 is a great option for smartphones, including the iPhone, Droid, and a growing list of other devices that support HTML5.
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We strongly discourage any use of the `<bgsound>` command to play background music for a mobile Web page. Similarly, using the `<object>` or `<embed>` tag with the `autostart=true` command to automatically play an audio file upon page load is a real no-no. These commands either cause an error or force the mobile user to download the entire audio file to see the contents of your page.

**Playing downloadable audio**

How audio plays over the mobile Web depends on the device that tries to play it. Here’s a quick review of the often uneven results you can expect when someone tries to play an MP3 by clicking a link to a song on a mobile phone:

- The iPhone exits the browser and launches its QuickTime app to play the song.
- Some BlackBerry phones launch BerryTunes or another app or widget that handles multimedia. Other BlackBerry phones (including many issued by big corporations or government agencies that have imposed strict security controls) return an error message.
- The most recent releases of the Motorola RAZR on the AT&T network download the song to the phone and bring up a media player. The original Motorola V3 versions on Sprint try to add the song to the ringtone library.
- Depending on the version of Android and the user settings, the phone plays the song in a browser, exits to a widget, or prompts the user to enable Flash 10.1 to handle multimedia content.

**Streaming your audio**

If audio is a significant element of your site, you may want to invest in the resources to set up your own streaming audio server. Before you start down this path, we should warn you this is a technically complex and often expensive option. Here’s what you need to know to get started:

- **Choosing a streaming format:** Almost every device plays MP3s, but many devices require streaming audio to be delivered in 3GP or MP4 format. Additionally, field testing has shown that using the audio/3GPP format is problematic, and some devices will only play audio that is contained in the video/3GPP format. We recommend that you consult DeviceAtlas to see if the devices you are targeting support the format you want. If you are unsure, you can use the video/3GPP format for maximum compatibility, even though the resulting file sizes are somewhat larger.

- **Setting up a streaming server:** If you want to consistently stream large quantities of audio to your users, you have to set up or have access to a streaming media server, such as Darwin Streaming Server (http://dss.macosforge.org).
If you want to get serious about streaming audio to your users, having the audio stored on your own server can make a difference in the amount of time it takes before the audio loads because the mobile device doesn’t have to access two servers — your Web site’s server and the server where the audio is hosted. If you can deliver the audio from the same server that your Web site is hosted from, it almost always plays faster (unless you have a very slow server).

**Following streaming protocols:** You then have to make your files compliant with Real Time Streaming Protocol (RTSP), which means you have to include a hint track with the file during the encoding process to tell your server how to package the data so that it flows across the wireless connection to the mobile user as seamlessly as possible. You can add the hint track when you are encoding with most recording software, or even with Apple’s QuickTime Pro.

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### E-mailing audio files to get around mobile problems and restrictions

Before you throw up your hands in frustration and resort to just buying a really loud boombox and driving through the streets blasting your audio files at top volume to make sure people hear them, we have a simple and elegant workaround that not only allows you to deliver audio to users on both their desktop and almost any mobile device but also encourages them to register and give up some valuable data in exchange.

First, we credit Jonathan Thaler ([www.whenimmobile.com](http://www.whenimmobile.com)) for allowing us to share this neat trick with you. Jonathan works with a number of musicians and knows that one of the most important things for a musician is to share her latest singles. Here’s how he solved the problem of making it easy for anyone with a mobile device to hear the music of his client, singer Tori Sparks ([www.torisparks.com](http://www.torisparks.com)).

Tori has offered music on her desktop Web site, shown in Figure 8-9, for some time, but she wanted to make it easy for fans at her concerts and other events to easily get her music — and not have to remember to go visit her Web site later.

Because Jonathan designed multiple versions of Tori’s site, optimized for different types of mobile devices, you find more options on some phones than others. All the mobile versions of the site include the ability to e-mail a sound file. High-end phones, such as the iPhone, also include images and video files you can play within the pages of the site (more on how to do that in the next section).
You can see the mobile version of Tori’s site shown on a BlackBerry phone in Figure 8-10. And in Figure 8-11, you see the iPhone version, which has more images and video clips hosted by YouTube.

Figure 8-9: Tori Sparks’ desktop Web site.

Figure 8-10: Tori’s mobile site displays mostly text on the BlackBerry Curve.
Figure 8-11: Tori’s site displays photos and video on the iPhone.

Fans can download an audio file from any of the versions of Tori Sparks’ Web site because of the innovative use of an e-mail form on a mobile site. Rather than wrestling with all the conflicting standards to make sure that none of her fans felt left out, Jonathan worked out an e-mail solution that automatically sends an MP3 file to almost any mobile device when a user enters an e-mail address into a form. Here’s how it works:

1. He set up a simple HTML form with a field for an e-mail address and a submit button and connected it to an automated e-mail script on his server.

   Because HTML form tags are widely supported on mobile devices, fans can fill in the form with their e-mail addresses using almost any Web-enabled mobile phone.

2. Fans who enter an e-mail address are sent a message with the music file as an attachment.

   Sending the MP3 as an attachment to an e-mail message means the song isn’t subject to the vagaries of the many mobile browsers. Any phone capable of browsing the mobile Web can also send and receive e-mail.
3. When the message comes in, the users can save the attachment to the device.

4. To play the file, fans can then exit the e-mail program and use whatever MP3 player was installed in the device to play the song.

Again, because MP3s are so popular, every device built in the last five years supports them.

Better still, when they get back to their home or office, most of Tori’s fans find a copy of the same message waiting in their e-mail inbox, so they can also add it to iTunes, Winamp, Windows Media Player, or any other audio player they may have on their computer. And, of course, the e-mail also contains links so the user can buy more of Tori’s music.

This elegant solution not only makes it easy for Tori to share her music with almost anyone who has a mobile phone, it’s also a great excuse to collect e-mail addresses, which she uses to promote upcoming shows and merchandise in her store.

To set up a system like the one on Tori’s site — that e-mails a sound file when a user enters an e-mail address — do the following:

- **Optimize the audio file so that it downloads quickly.** Make sure that you abide by the bitrate encoding suggestions in the section “Figuring out formats, file size, and more” earlier in this chapter; MP3 files quickly reach the multi-megabyte size, and a large download may be blocked by the user’s e-mail service.

- **Set up an e-mail form and script that works on your server.** Creating an HTML form where a user can enter an e-mail address is easy: Use the standard HTML form tag, a simple form text field, and a submit button. If you’re not familiar with setting up scripts to handle e-mail forms on your Web server, you may need to consult with your Web hosting service to set up an e-mail form script. Many hosting services include an e-mail form script as part of the service, but on some servers you may need to install and configure script yourself. Any standard form mail script that allows attachments should work; however, beware that most hosting services have strict rules about how scripts can be set up on their systems to prevent malicious users from sending obscene content or spam.

### Adding Video to Your Mobile Web Site

Ever since the days of the first portable TVs, video addicts have dreamed of ways to watch their favorite shows, no matter where they were. Early attempts at this ranged from suitcase-sized monstrosities that weighed as much as a small child, to the Sony Watchman with its rabbit-ear antenna that required viewers to wrap tinfoil around it and stand in awkward yoga-like positions to get good reception.
The advent of so-called “TV anywhere” always seems a few years down the road, but the rollout of the high-speed wireless data networks may finally bring the dream to reality.

As you might have figured out, video brings together all the most difficult challenges of designing for the mobile Web: the plethora of screen resolutions to display the picture on and the large file sizes burdening the digital distribution networks. Video professionals who are trying to make the transition to the mobile space mutter darkly about dense technical specifications and toss around phrases like backhaul and data packet prioritization (words so obscure we don’t even bother to define them here). And, not to be repetitive, but one of the biggest challenges is that the most popular video format on the Web (Flash) isn’t supported on the vast majority of mobile devices.

If we shovel out the reams of data specifications and intricate formatting requirements you need to become an expert in creating your custom mobile video site, we’d take up the remainder of this book (and probably a couple others). Unless you’re part of a dedicated, well-funded team working for a large media company, this would probably only confuse the issues and, worse yet, would get you no closer to actually delivering video clips to visitors of your Web sites. Therefore, we suggest that (at least to start out) you leave the deeply technical issues to people who have already spent years working on this problem and concentrate instead on how best to take advantage of the fruits of their labors. In Figure 8-12, you see how the programmers at YouTube design video to display on an iPhone. Hosting video on YouTube makes it easy because you can simply add a link to the video and YouTube delivers the best version for the detected device.

In the following sections, we introduce you to your video-hosting options, namely content delivery networks (CDNs) and video-sharing sites. We then explain the basics of embedding a video hosted on the video-sharing site YouTube into your mobile Web site. And finally, we include a sample of the code you can use to embed video directly on your pages if you host the video on your own Web server.

Comparing CDNs with video-sharing sites

When you look for a third party to deliver your video content to your mobile users, a dedicated content delivery network (CDN) provides high-end services for a price. A video-sharing site, such as YouTube, Vimeo, or Viddler, offers free or low-cost services.
The essential trade-off between a CDN and a video-sharing site is cost versus control. The more you pay, the more you can control the kind of experience that your mobile users get. The less you pay (and free is about as less as you can get), the more you’re at the mercy of someone else’s decisions. You have to weigh the trade-offs, and we encourage you to do your research. To help you get started, the following sections provide a comparison of the advantages and disadvantages of each.

**Checking out CDNs**

Dedicated CDNs offer many advantages:

✔ **Provide tools for you to customize the player** with your own logo or messages.

✔ **Allow you to insert your own advertising**, and in some cases, they maintain their own ad server so you can customize which ads appear depending on the user, time of day, location of user, and so on.
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- Maintain their own performance metrics system, so you can track who watches your videos, when and where they watch, and all sorts of other data useful to you (and advertisers).

- Provide better customer support; after all, if you’re paying for their services, there better be someone there to help if you need it.

- Allow for batch uploading so that you can publish a collection of videos all at once, rather than having to do so one at a time.

- Offer better copyright protection of your content.

- Make it possible to restrict which geographic regions or domains are allowed to access your videos.

- Allow you to post videos of any length (within reason).

- Deliver video in higher quality because CDNs spend more time tinkering with compression algorithms.

Some of the disadvantages of dedicated CDNs:

- Can be very costly — hosting packages start in the hundreds of dollars for 200 gigabytes of videos served per month (about 50 full-length DVDs) and rise sharply after that.

  Did we mention that CDNs are expensive? If you get a hit viral video, your hosting bills can quickly skyrocket into the thousands (or tens of thousands) of dollars. That may be fine if you’ve worked out a great advertising model or charge for your videos, but if you don’t, this probably isn’t your best option.

- Require you to manage social-media aspects of your videos, such as sharing, commenting, embedding, and so on.

Hundreds of CDNs are on the market. Some of the most popular are

- Akamai: www.akamai.com
- Delve Networks: www.delvenetworks.com
- Ooyala: www.ooyala.com
- EdgeCast Networks: www.edgecast.com
- Limelight Networks: www.limelightnetworks.com
- Mobile CDN: http://mobilecdn.com

Exploring video-sharing sites

Video-sharing sites offer many advantages:
Free or at least very cheap when compared with CDNs.

Easy to use. If they weren’t, millions of teenagers around the world couldn’t share their deeply held convictions that homework is, like, totally unfair.

Bandwidth costs and concerns are someone else’s problem.

Easy to share the content — your users can embed your videos on their sites, e-mail friends, leave comments, post to Facebook, and so on.

Traffic already comes to these sites, so you don’t have to go out of your way to do lots of search engine optimization (SEO) to get your video to appear in search engines.

Some of the disadvantages of video-sharing sites:

Videos may be delivered with poor quality. Because video-sharing sites process many thousands of videos per day, they really can’t pay attention to all the details of making your little project look its best.

Their ads may appear on your content. If you try to put in your own ads or if your video is blatantly commercial, many sites yank it.

Your content can be banned or taken down at anytime, for any reason, solely at their discretion.

After you upload your content to their site, you may no longer be the sole owner of the rights to control where, when, and how your video is displayed, packaged, advertised, or sold. Read the End User Licensing Agreements fully; don’t just agree to it.

The length of the videos is limited to what the video-sharing site dictates (usually ten minutes or less).

Analytics are limited. You probably don’t get much data to gauge user engagement, or to see which sections of a video are the most popular, where the audience fast-forwarded, and so on.

Because the videos are hosted on someone else’s server, the value of the traffic that comes from your site goes to the video-sharing site, not yours. Traffic can cost you money because of hosting and bandwidth fees, but it can also contribute to higher search engine rankings and advertising opportunities.

Among the most popular video-sharing sites:

YouTube: www.youtube.com
Vimeo: www.vimeo.com
Viddler: www.viddler.com
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- **Dailymotion:** www.dailymotion.com
- **Revver:** www.revver.com
- **Babelgum:** http://babelgum.com/mobile

### Hosting mobile video on YouTube

For designers who don’t want to struggle too much to figure out whole new lexicons of technical specifications, the simplest option is to let YouTube do all the work of hosting and delivering video.

Upload a video to this popular Web site, set a link to it on your mobile Web page, and you’re all set. YouTube is smart enough to detect your users’ devices and deliver videos optimized for their platform. For example, even with the mighty iPhone, users with the 3G version get higher-quality videos than iPhone 1.0 users because YouTube knows that the first-generation iPhones download video much more slowly, and even the most beautiful video in the world does no good if the user yanks out his hair while all the data tries to fit through a 2G pipe.

### Inserting a YouTube video directly into a mobile Web page

If you want to take the YouTube video solution to the next level, here’s another great tip from Jonathan Thaler. Instead of just linking to YouTube, peel out the actual reference to the video from the YouTube page and add your own code to insert the video directly into your mobile page. The advantage of this approach is that you don’t have to send users to the YouTube site. Although the video is still hosted on YouTube, you can make a video play within your mobile page. See Figure 8-13 for an example of videos hosted on YouTube that are inserted into a mobile Web page; Figure 8-12 shows those videos as they appear if you link to them on the YouTube page. Inserting videos into your pages works best when designing pages for high-end mobile devices, such as the iPhone and Droid phones.

To insert a YouTube video directly into your mobile Web page, you need the User Agent add-on for Firefox (covered in Chapter 7). The User Agent add-on is important because you need to visit the correct page on YouTube — the one that’s optimized for your mobile device. The Firefox User Agent tricks YouTube into identifying the Firefox Web browser as a mobile device (even when you use it on a computer), which makes it possible to view the code you need for each type of mobile phone. To find the code you need on YouTube, follow these steps:
Figure 8-13: You can embed videos hosted on YouTube on mobile-optimized Web pages.

1. Launch Firefox with the User Agent add-on installed.
2. Choose Tools ➤ Default User Agent and then select the device you want Firefox to mimic, such as the iPhone.
   In Chapter 7, you find instructions for adding user agents for many different devices to the User Agent add-on.
3. Open the YouTube page with the video you want to add to your page.
   With the user agent activated, YouTube displays a version of the video optimized for the device you have selected from the user agent options.
4. Right-click (Command-click on a Mac) and choose Properties.
5. Copy the last string of code, just after the equal (=) sign, from the Address field in the Element Properties window, shown in Figure 8-14. This code corresponds directly to the version of the video that is being displayed in your browser. It should look something like this: 0NesG6e74Jw. (This is the code for a video we took of the Golden Gate Bridge. You’re welcome to use it to test this trick yourself.)

6. In a Web page editor, such as Dreamweaver, paste the code you copied in Step 5 into your Web page using the code we provide in Listing 8-1.

If you want to reach the broadest audience, stick with XHTML and use the <object>, <param>, and <embed> tags, as we show in Listing 8-1. (If you prefer not to type this code, you can copy it from our Web site at www.DigitalFamily.com/mobile.)

Listing 8-1 shows the code you need in order to insert mobile-optimized video from YouTube so that it will play within a mobile Web page.
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Listing 8-1  Inserting a YouTube video into a mobile Web page

```html
<OBJECT width="140" height="105">
<param name="movie" value="http://www.youtube.com/v/YOURVIDEOCODEHERE"></param>
<param name="wmode" value="transparent"></param>
<embed src="http://www.youtube.com/v/YOURVIDEOCODEHERE" type="application/x-shockwave-flash" wmode="transparent" width="140" height="105"></embed>
</OBJECT>
```

Inserting video hosted on your server into a mobile Web page

If you host your videos on your own Web server, you can insert them into a Mobile Web page just as you would insert them into any other Web page using the `object`, `param`, and `embed` tags. The trick is to make sure you deliver your video in a format that works well on mobile devices, and, ideally, you should deliver different versions of each video to different devices based on the capabilities of each device. Because getting the video into the best format and hosting it on your own server are relatively complicated tasks, we recommend that you consider using a CDN or a video service like YouTube. However, if you want to host your own video and need instructions for inserting video into a Web page using Dreamweaver, you will find detailed instructions in *Dreamweaver CS5 For Dummies*. You can also find tutorials on inserting video in the Dreamweaver section at [www.DigitalFamily.com](http://www.DigitalFamily.com).

Designing your mobile site so users watch your video

One of the most common mistakes made by designers jumping into the mobile Web is to assume that because designing Web pages that work on mobile devices is so different from designing for the desktop Web, the people who use these devices must be starting from scratch, too.

If you’re in that camp, picture us clearing our throats, holding up a bullhorn and then shouting “WRONG!”

Your users arrive at the mobile Web with a lot of baggage. Anyone who has spent time surfing the desktop Web has assumptions and expectations about
how things work and burned fingers from all the bad experiences they’ve had. If you’re old enough, you may remember the awful experience common to Web surfers in the late ’90s (at least until Microsoft plugged the security hole in IE) when unexpected problems frequently arose, such as an unending stream of pop-up windows mouse-trapped in your browser, no matter how desperately you clicked to close them.

So with video on your mobile Web site, realize that this isn’t the first time around the block for your users. They’ve probably watched online videos before. They know how the video’s supposed to work; more importantly, they know how it’s not supposed to work and what can go wrong. Things that are annoying on the desktop Web can become major roadblocks on the mobile platform.

Remember, your mobile users are likely to be in a hurry, going in and out of cell coverage, or paying by the byte for the data you send them. You need to give visitors the confidence that you aren’t going to abuse their trust by sending them something massively long, horridly inappropriate, or worse. (If you’ve ever had the experience of being Rickrolled — clicking a seemingly relevant link that actually takes you to the Rick Astley’s “Never Gonna Give You Up” video — you can appreciate why many Web surfers have become cautious about clicking video links.)

When you add video to your mobile site, abide by these simple guidelines:

- **Use descriptive text.** Make sure that you tell your users what they’re going to get if they choose to invest their time and attention in your video. On mobile, even a modest length video can take a long time to load and play. If your users feel deceived, they aren’t likely to click other videos on your site or perhaps come back at all.

- **Make the video easy to play.** Clicking an image or title of a video needs to make it play. Moving the cursor on tiny mobile screens is hard enough; don’t make your users hunt to find the link or control to make your video play.

- **Show video length and file size.** Related to descriptive text, but important enough to warrant its own mention. Be upfront about your content; tell your users how long the video runs and how big the file is. Better to have them bookmark your page to look at later on a desktop than to frustrate them with a sluggish download or infuriate them by eating their allowed data transmission for the month.