# How Banner Ads Work

by Tom Harris

If you've spent any time surfing the Internet, you've seen more than your fair share of **banner ads**. These small rectangular advertisements appear on all sorts of Web pages and vary considerably in appearance and subject matter, but they all share a basic function: if you click on them, your Internet browser will take you to the advertiser's Web site. But how do they work and why are they there?

Banner ads are usually relatively simple pieces of HTML code, but their presence on the Web and their importance in Internet-based business is immense. In this edition of **How Stuff Works**, we'll examine banner ads and their place on the Internet. We'll see how they work, how advertisers rate their effectiveness, and how you can use them to advertise your site or bring in revenue. We'll also examine the technology behind them and look at some of the different forms they can take. By the end of this article, you will be a banner ad expert!
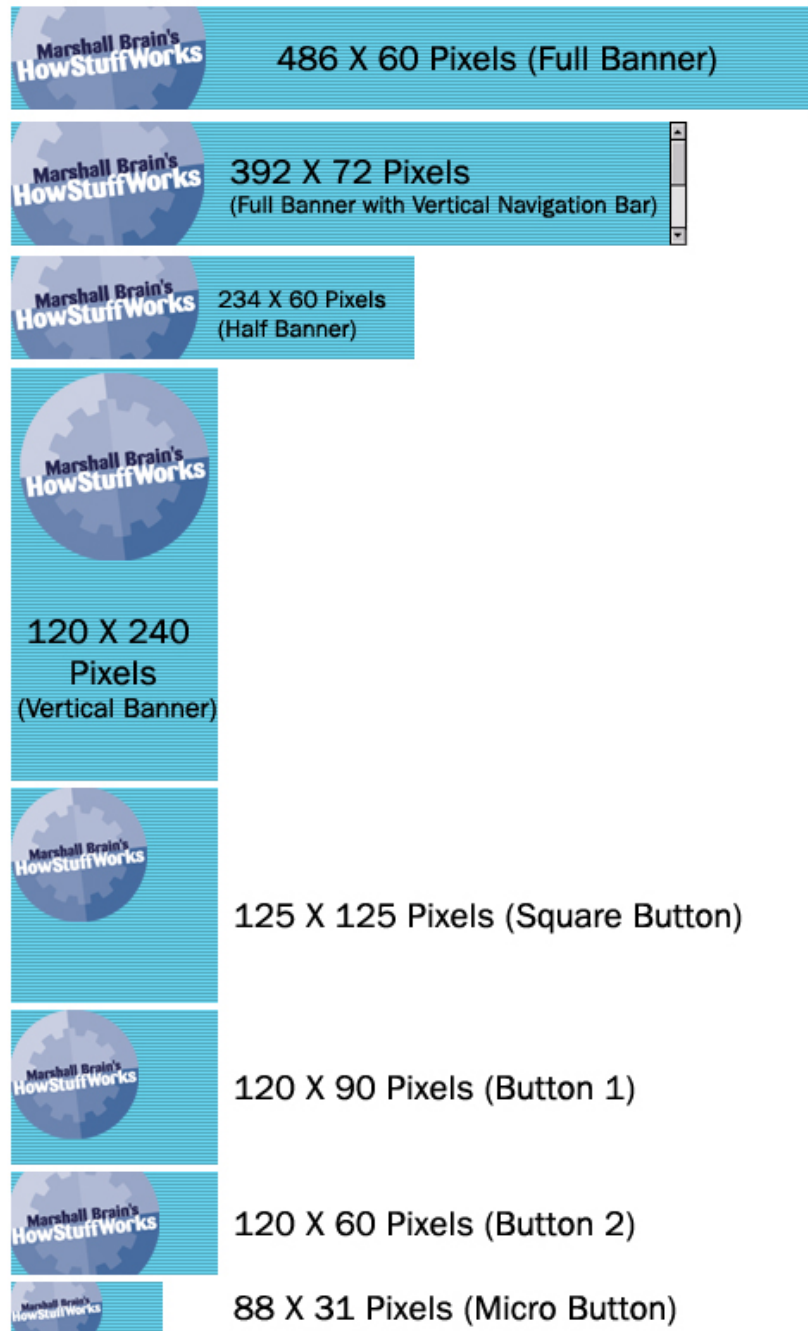
## What is a Banner Ad?

Over the past few years, most of us have heard about all the money being made on the Internet. This new medium of education and entertainment has revolutionized the economy and brought many people and many companies a great deal of success. But where is all this money coming from? There are a lot of ways Web sites make money, but one of the main sources of revenue is advertising. And one of the most popular forms of Internet advertising is the banner ad.

A banner ad is simply a special sort of hypertext link. If you've read the How Stuff Works article "How Web Pages Work", then you know how a basic text link works. A bit of HTML code instructs a Web server to bring up a particular Web page when a user clicks on a certain piece of text. Banner ads are essentially the same thing, except that instead of text, the link is displayed as a box containing graphics (usually with textual elements) and sometimes animation.

Because of its graphic element, a banner ad is somewhat similar to a traditional ad you would see in a printed publication such as a newspaper or magazine, but it has the added ability to bring a potential customer directly to the advertiser's Web site. This is something like touching a printed ad and being immediately teleported to the advertiser's store! A banner ad also differs from a print ad in its dynamic capability. It stays in one place on a page, like a magazine ad, but it can present multiple images, include animation and change appearance in a number of other ways.

## Types of Banner Ads

Like print ads, banner ads come in a variety of shapes and sizes. The Internet Advertising Bureau (IAB) specifies eight different banner sizes, according to **pixel** dimensions. A pixel is the smallest unit of color used to make up images on a computer or television screen. The IAB's standard banner sizes are:

486 X 60 Pixels (Full Banner)

392 X 72 Pixels
(Full Banner with Vertical Navigation Bar)

234 X 60 Pixels
(Half Banner)

120 X 240 Pixels
(Vertical Banner)

125 X 125 Pixels (Square Button)

120 X 90 Pixels (Button 1)

120 X 60 Pixels (Button 2)

88 X 31 Pixels (Micro Button)

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The full banner (468 x 60) is by far the most popular, but you will see all these variations all over the Web. These are not the only banner ad shapes and sizes, either, but they are a good representation of the range of common banner ads. There is no universal file-size constraint for banner ads, but most Web sites impose their own limits on memory size, usually something like 12K to 16K. This is because banner ads add to the total file size of the page they appear on, therefore increasing the time it takes for a browser to load that page.

As you've probably noticed while surfing the Web, actual graphic content, or **creative**, varies considerably among banner ads. The simplest banner ads feature only one, static GIF or JPEG image, which is linked to the advertiser's home page. More common is the GIF-animated banner ad, which displays several different images in succession, sometimes to create the effect of animated motion. Then there are **rich media** banner ads -- ads that use audio, video, or Java and Shockwave programming. These banner ads, which usually have larger file sizes, are often

interactive beyond their simple linking function.

# Banner Ad Objectives

Advertisers generally hope a banner ad will do one of two things. Ideally, a visitor to the **publisher** site, the Web site that posts the banner ad, will click on the banner ad and go to the advertiser's Web site. In this case the banner ad has brought the advertiser a visitor they would not have had otherwise. The banner ad is a real success if the visitor not only comes to the site but also buys something. Failing a **click-through**, advertisers hope that a publisher site visitor will see the banner ad and will somehow register it in their heads. This could mean the visitor consciously notes the content of a banner ad and decides to visit the advertiser's site at some time in the future, or it might mean that the visitor only peripherally picks up on the ad but is made aware of the advertiser's product or service.

This second effect of advertising is known as **branding**. We've all experienced the effects of branding before. Say you see ads on television for Brand X glue all the time. The ads don't seem to particularly affect you -- you don't leap from your couch to go buy glue -- but down the road, when you're at the store shopping for glue, they may affect the decision you make. If you don't have any other reason to choose one type of glue over the others, you'll probably choose the one you're most familiar with, Brand X, even if you're only familiar with it because of advertising.

So there are several ways a banner ad can be successful. Consequently, there are several ways advertisers measure banner ad success. Advertisers look at:

- **Clicks/Click-throughs:** The number of visitors who click on the banner ad linking to the advertiser's Web site. Publisher sites often sell banner ad space on a cost-per-click (CPC) basis.
- **Page views:** Also called page impressions, this is the number of times a particular Web page has been requested from the server. Advertisers are interested in page views because they indicate the number of visitors who could have seen the banner ad. Although they don't measure the effectiveness of a branding campaign, they do measure how many visitors were exposed to it. The most common way to sell banner ad space is cost per thousand impressions, or CPM (In roman numerals, M equals a thousand).
- **Click-through rate (CTR):** This describes the ratio of page views to clicks. It is expressed as the percentage of total visitors to a particular page who actually clicked on the banner ad. The typical click-through-rate is something under 1 percent, and click-through rates significantly higher than that are very rare.
- **Cost per sale:** This is the measure of how much advertising money is spent on making one sale. Advertisers use different means to calculate this, depending on the ad and the product or service. Many advertisers keep track of visitor activity using Internet cookies. This technology allows the site to combine shopping history with information about how the visitor originally came to the site.

Different measures are more important to different advertisers, but most advertisers consider all of these elements when judging the effectiveness of a banner ad.

# Who Makes Banner Ads?

Pretty much anybody with computer knowledge can learn how to make a very basic banner ad. To code the banner, simply combine the HTML tag for a link with the HTML tag for an image. You can create the necessary graphics using a simple computer art program, like Paint Shop Pro, which you can download from this site.

To understand the coding involved, let's look at an example. Here is a basic static banner ad for How Stuff Works:

Its code looks like this:

**<a href="http://www.howstuffworks.com"> <img src="http://static.howstuffworks.com/gif/banner-ad-static.gif"> </a>**

The link component of the code is:

**<a href="http://www.howstuffworks.com"> _____ </a>**

As you can see, the information in quotes is the URL for the How Stuff Works home page. If you were writing a text link, you would simply write something like "How Stuff Works" in the blank space, and a site visitor could click on those words to bring up the HSW home page. To make a banner link, you do pretty much the same thing, except instead of text, you put a tag for a graphic in the empty space. The graphic tag component of the code is:

**<img src="http://static.howstuffworks.com/gif/banner-ad-static.gif">**

In this case, the tag simply consists of the URL location of the graphic image; the full URL would be "http://computer.howstuffworks.com/gif/banner-ad-static.gif" (go to this URL and you will see the graphic), but we only need to put the last part of the URL here, since we are already within "http://www.howstuffworks.com." This tells a visitor's browser to load the image posted at that particular URL. The visitor can then click anywhere on the entire image to visit the How Stuff Works home page. For more information on how to code image and hyperlink tags, check out the How Stuff Works article, How Web Pages Work.

Basic, static banner ads are so simple you can make a few for your site in an afternoon, and animated GIF banner ads aren't much more complicated. On the other end of the spectrum are complicated rich media ads. Ads with elaborate animation or user interactivity require much more extensive programming ability.

Amateur banner ads often work fine, but with so many ads competing for viewer attention, many Web sites need the help of professional ad designers. Good advertising agencies and professional designers not only bring their programming skills to banner ad creation, but also their creativity and extensive marketing experience. They work to match a banner ad campaign with the advertiser's product or service, and to make innovative, attention-getting graphic content. There are many ad agencies and free-lance banner ad designers serving Web sites today, and they have a wide range of experience, ability and success. They also have a wide range of fees: You can get a professional banner ad for $50 or you can spend upwards of $1,000.

There are also Web sites that offer free banner ad creation. They either provide you with all the components you need to create your own banner ad, such as backgrounds and fonts, or they create a banner ad for you. These designers and companies do this for a number of reasons. Some simply make money from advertising on their sites, some offer free banner creation in exchange for their customers posting client banner ads on the customer's site and a few designers simply create banners as a hobby.

Some popular free banner design sites are:

- Make Your Banner.com
- ABC Banners
- Atomic Arts

Like most forms of advertising, banner ads vary considerably in quality because their creators vary a great deal in ability and experience. The range is even greater with banner ads than with most other forms, however, because it is so easy and inexpensive to create and post banners.

## Advertising with Banners

An advertiser that is interested in posting banner ads on other sites has three basic options. The advertiser can:

- Arrange to display other Web sites' banner ads in exchange for them displaying its ad.
- Pay publisher sites to post its banner.
- Pay an organization, usually a banner network like DoubleClick or Flycast, to post the banner on a number of publisher sites.

These three arrangements take many forms and advertisers and publishers must choose the specific arrangement that best suits them. If you want to post banner ads on other sites but don't have the capital to mount a traditional advertising campaign, you may choose to exchange banner ads with other sites. There are two ways you can go about this. The first is to individually develop relationships with other Web sites and trade specific banners. This is a very natural process and allows you to place your banner ads conscientiously and post other Web site banner ads that fit your site well. Your banner ad doesn't end up on very many sites, however, unless you invest a whole lot of your time in seeking out interested webmasters.

If you want to get your banner ad on a lot of sites in a short amount of time (and don't want to pay for it) then your best bet is joining a banner exchange program.

## Banner Exchange Programs

Banner exchange programs offer a simple service. If you post a certain number of banner ads on your site, they will post your banner ad on another site. Usually, this isn't an even exchange; you have to post more than one banner ad for every one of your banner ads they post. This is how the exchange program makes a profit. Their arrangement yields them more banner ad spaces than actual banner ads they need to place for their members, so they can sell the extra banner ad spaces to paying advertisers. The exact ratio varies, but 2:1, posting two banner ads on your site for every one of yours posted on another site, is a typical arrangement.

Most banner exchange programs distribute banner ads in the same way. For every banner ad you've decided to display, the exchange provides you with a piece of HTML code. This code instructs a visitor's Web browser to bring up a banner ad from the exchange program's server. This enables the exchange program to easily change which banner ads are on which sites. They can also monitor the success of particular banner ads on particular member sites, which helps them to pair sites with suitable advertisers.

The advantage of joining a banner exchange program is it's a free way to get other sites to post your banner ads. The disadvantage is that you give up a lot of control over where your ads are posted and what ads are posted on your site. In most cases, the banner exchange program chooses where to put its members' banner ads, and you may not like what they decide to post on your site or where they end up posting your banner ad. Most banner exchange programs attempt to link banner ads and sites intelligently, and they often do a good job, but there is a possibility that at some point you will be dissatisfied with a banner ad that ends up on your site.

Some major banner exchange programs are:

- LinkExchange
- BannerSwap
- SmartClicks
- Free Banners

- [LinkBuddies](#)

It's pretty easy to join a banner exchange program. Go to any of the above sites and they will walk you through their particular process. It's definitely a good idea to shop around, because different banner exchange programs have different strengths. Some programs concentrate on effective banner placement more than others, and some specialize in Web sites that feature a particular subject matter, such as religion or kid interests. Most banner exchange programs are free to join, but some also offer a better exchange ratio for a small fee.

# Buying Advertising

If you are interested in buying advertising space, you have a few different options. You can:

- Approach Web sites yourself
- Employ an advertising agency
- Join a banner ad network
- Start an affiliate program

Each of these options has its own advantages and disadvantages, as we will see.

## Approach Web Sites Yourself

This is an involved, time-consuming way to place your banner ads, but it does offer some significant advantages. Mainly, placing all your banner ads yourself gives you a lot of control over how you advertise. You can fully investigate potential publisher sites to decide if their content matches yours and you can often work with the site to find the best location for your ad. This can be a relatively inexpensive way of advertising, if you target small Web sites that don't attract a lot of other advertisers. If you choose such sites carefully, your banner ad can be fairly effective. A small Web site that caters to a particular niche may not have very high traffic, but the people who do visit are all interested in some of the same things. If you sell rare [PEZ machines](#), for example, a well-placed ad on a small toy collector site could bring you significant traffic.

To place advertisements this way, you have to approach each site individually, follow its particular procedures and purchase its particular advertising packages. Start by searching the site to see if they have a page for potential advertisers. If you can't find anything online, call the site or send them e-mail. Shop around for an advertising arrangement that meets your needs and fits your budget.

Larger sites will probably have a set advertising package with a relatively high price tag. Most sites sell advertising space on a CPM basis, in a package consisting of a certain number of impressions. CPM varies considerably -- you can expect to pay anywhere from $5 to $100 per thousand impressions on a fairly popular site. There is such a wide range because different Web sites have different levels of popularity and different sorts of audiences. A site with consistently high traffic will usually charge a lot more than a less popular site. If a site caters to a particular niche, it may charge more than a general interest site because its advertisers can more effectively target a specific demographic. The amount of impressions in an advertising package varies, but 50,000 to 200,000 impressions sold at a time is typical of good-sized sites. Smaller sites may not have any advertising plan whatsoever, which means you might be able to work out a good deal with them.

## Employ an Advertising Agency

A full-service advertising agency will do most of the work of posting banner ads for you, and it will lend its expertise to the process. Agencies help you seek out suitable publisher sites, they negotiate the price of banner ad space, and they help you make the best use of your advertising budget. Additionally, advertising agencies work with you to conceive advertising campaigns and they create professional banner ads for your site. They can often get a better price on advertising space because they have a lot of clients and can buy impressions in bulk. There are many good

Internet advertising agencies, offering a wide variety of special services.

It's clear that using an advertising agency has a lot of advantages, but it also has one significant drawback for smaller sites: Advertising agencies usually deal only with accounts of a certain minimum size. Agencies vary considerably in reputation, services offered and size, and so also vary a great deal in price and account minimum. The best way to find out if an ad agency is right for you is to shop around. Find out what an agency offers, how much it charges and how much experience it has. Look at several agencies so you can make an informed decision.

The cost of using an agency is certainly worth it to very large companies because they need the expertise and talent of professionals to make their ads competitive with rival companies' ads. It may be a necessary investment for a smaller Web site too, if it wants to establish itself as a significant presence on the Internet. Advertising is a very difficult process and an important ad campaign is certainly best handled by experts. If you have a limited advertising budget, however, you might do better to spend most of your money on actual banner ad placement, rather than marketing plans and top-of-the-line banner design.

## Join a Banner Ad Network

If you want to place your banner ads on a lot of sites and don't want to put in the time to negotiate with the sites yourself, then using a banner network is a good option. Banner ad networks simply act as brokers between advertisers and publishers. Like banner exchange programs, they take care of placing an advertiser's banner ads and tracking all activity related to that ad. They also share one of the main drawbacks of banner exchange programs, however -- a lack of client control. Banner networks decide where to place banner ads, and they don't give each client the level of attention an advertising agency would. Consequently, there's a good chance you won't always be happy where your banner ad gets displayed. Many Web sites happily accept this shortcoming in light of the extensive services ad networks provide at a relatively low cost.

You definitely need to shop around to find a suitable banner network. For one thing, many of the larger banner networks primarily sell advertising space from high-traffic publisher sites, which may be too expensive for your budget. There are banner ad networks that specialize in more affordable advertising space on smaller publisher sites, and a few networks offer discounted "remainder" advertising space, also called excess banner inventory, which is simply ad space that didn't sell at the regular price. You should also check out networks that specialize in a particular kind of site, as they may place your ads more effectively. Unfortunately, there are plenty of banner ad networks that promise more than they deliver and that fail to place your ads effectively, so be sure to research a network thoroughly before you join.

You'll also need to decide whether you are interested in impressions or click-throughs, as most banner ad networks specialize in one or the other.

Some major impression networks are:

- DoubleClick
- Flycast
- BURST! Media
- ContentZone

Some major click-through networks are:

- Banner Brokers
- ValueClick
- BannerSpace
- eAds

## Start an Affiliate Program

This is a very cost-effective way to get your banner ad on other sites. If you set up your own affiliate program you can arrange to pay publisher sites only when you get a specific result. This could be a number of things, such as a visitor simply clicking through to your site or the visitor actually purchasing something once she gets there. Unlike traditional banner advertising through a banner network, you don't have to buy affiliate program click-throughs or impressions in bulk. You pay a small amount for each click, or you pay a percentage of your profit from a referred visitor. You can learn all about affiliate programs in the How Stuff Work article How Affiliate Programs Work.

# Selling Advertising Space

Selling banner advertising space is a great way to use your site's traffic to generate revenue, but it can be a bit tricky. The easiest option is to join a banner ad network, which will recruit advertisers, keep track of your earnings, and control banner ad placement on your site. In exchange for these services, the network will take a hefty percentage of the advertising money generated by your ad space.

Because there are more sites that want to sell advertising space than there are sites that want to buy advertisements, banner networks tend to be somewhat choosy about the publishers they recruit. Most banner networks set a minimum monthly traffic amount, which is often fairly high. A lot of the bigger banner networks require publishers to have upwards of 250,000 visitors a month to join a CPM program. Many banner networks do cater to a range of sites, setting up different **tiers** to divide publisher sites based on monthly traffic. This is a good service for advertisers because it lets them choose the range of sites that best fits their budget and marketing campaign. Additionally, most banner networks put certain restrictions on publisher site content. They may exclude sites featuring adult content or socially offensive material, and they may also exclude publishers that already feature too many advertisements.

If your site gets a good deal of traffic, more than 100,000 impressions per month, then you should be able to join a good banner network's CPM program. If you have a smaller site, you should look into banner network click-through programs, which tend to have lower minimum traffic requirements. You probably won't make much money in a click-through program, however, because you are only paid when visitors actually click on the banner, which is very seldom (typically, less than 1 percent of the people who see a banner will click on it).

Once you've joined as a publisher, banner networks operate very similarly to banner exchange programs. You put a piece of HTML code in the ad space on your site and the banner network takes care of the rest. They place banner ads they feel fit your site and track the relevant impressions or click-throughs so you will be paid correctly. As with exchange programs, you will probably end up with unsuitable banner ads on your site from time to time, and you won't get a whole lot of control over the process.

How much money might you make through a banner ad network? Most networks are selling "run of site" ads to advertisers, and they are getting something like a $5 CPM rate for the ads. Then the network takes between 30% and 50% of the $5 as its cut. Therefore, you might expect to earn something like 0.3 cents per impression that appears on your site, or a $3 CPM rate. If your site generates 100,000 impressions per month, you can expect to receive a check for $300 every month.

If you are getting paid per click, you might receive anywhere from 3 cents to 20 cents per click. 5 cents might be a typical average. If you get a 1% click rate and you have 100,000 impressions per month, that means that you might expect to receive $50 per month.

# Selling Space Yourself

If you want total control over the banner ads that appear on your site, you may want to recruit advertisers yourself. There are many more sites on the Web that want to sell ad space than there are advertisers, so you need to have a fairly impressive site to go this route. The things that impress advertisers are high traffic and specialized content, because these are the things that translate into impressions and high click-through rates. If you want to sell ad space, your task is to convince potential advertisers that placing a banner ad on your site is a good investment. You do this with traffic numbers, information about your visitors (called demographic data) and with specific content that relates to their product or service. Since you won't be using a network or exchange program, you'll also have to set up technology to track visitor traffic, so you can bill your advertisers correctly. Approaching advertisers, marketing your site, tracking traffic and collecting money from advertisers all require a lot of time and effort, but if you are committed to growing your Web site and only running banner ads that would appeal to your visitors, the payoff can certainly be worth the effort.

## What Makes a Banner Ad Effective?

There are no concrete rules about what makes a good banner ad. As in all advertising, an effective banner ad is the product of a number of different factors, and there is no sure way to predict how well any banner ad will do. A lot of successful banner ads are the result of extensive trial and error experimentation: A Web site puts a banner ad up and monitors the response it gets. If that doesn't work, the site tries something else. What makes a good advertisement is largely a mystery.

That said, there are a few qualities that generally make for more effective banner ads in many situations. If you are mounting a banner ad campaign you should keep these suggestions in mind:

- Post banner ads on pages with related Web content -- the more related, the better.
- Advertise a particular product or service in your banner, rather than your site generally.
- If you do advertise a particular product or service, link the banner ad to that part of your Web site, rather than your home page.
- Put banner ads at the top of the page, rather than farther down.
- Use simple messages rather than complicated ones.
- Use animated ads rather than static ones.
- Your graphic content should pique visitor curiosity, without being too obscure.
- Keep banner ad size small. If the page takes too long to load, a lot of visitors will go on to another page.

The most important things are to make visually appealing ads with interesting content and to intelligently place the ads so they are exposed to audiences that would be interested in them. Combining these qualities is a simple notion, but effectively accomplishing this is a complicated art. And like any art, advertising is constantly evolving. New approaches to banner ads pop up all the time.

One interesting development that has been around for a while is **targeting**. Banner ads that are targeted appear based on the Internet user's activity. For example, advertisers can buy **keyword advertising** on a search engine, such as Alta Vista or Yahoo, so that their ads are displayed when someone performs a particular search. If an advertiser buys up keywords related to its product or service, it can probably increase click-through rates, because the visitor has already demonstrated an interest in finding sites on that particular subject.

The Internet is an attractive medium to advertisers, because cookies allow sites to gather information about each visitor. It's a good bet that the future of Internet advertising will involve extensive use of this technology to target individual Internet users. Many Web sites are already experimenting with presenting each visitor with specific banner ads that would be likely to interest them, based on information gathered from surveys and the visitor's Web-surfing activity.

# The Future of Internet Advertising

Web experts have been predicting the end of traditional banner advertising for years, noting dwindling click-through rates. They have several different ideas of what will replace it as the dominant means of advertising. **Pop-up ads**, advertisements that appear in their own, small browser window, have been growing in popularity. Many Web users find them extremely annoying because you have to close each browser window, and if there are enough of them, they can overload some browsers' capacity. Some Internet research shows that text links are more effective than banner ads. This is probably because so many Web users are automatically aware of banner ads and so can easily ignore them while text links are less obvious -- they appear to be part of the site's content.

Advertisers have also found some success with **interstitial ads**. Like Pop-up ads, these ads appear in their own browser window. When a visitor clicks on a link, the interstitial ad appears before the browser brings up the linking page. Most interstitial ads close automatically, so they are less annoying than pop-up ads, but they briefly fill the user's screen, so they definitely make an impression.

If you keep an eye on Internet news, you will continually see stories on the death of the banner ad, as well as stories about upturns in banner ad success. Banner ads will most likely be around for some time, but it's a good bet they will take new, interesting forms. As we've all read in recent years, the Internet is in its infancy, and webmasters have only begun to tap its potential. The same can certainly be said for Internet advertisers, and since advertising is the main source of revenue the keeps Web sites going, you can be sure it will continue to evolve at an accelerated rate.