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Small Business IT For Dummies®

Chapter 1

Find an IT advisor you can trust

A Reference for the Rest of Us!®

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Small Business IT For Dummies®

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Chapter 1

Finding a Trusted IT Advisor

In This Chapter

- Knowing whether you need an IT professional
- Checking out what makes a good IT advisor
- Interviewing potential candidates

You're driving your business along the information technology (IT) superhighway, and so far, you're on the straight and narrow. You manage your own computer systems, and you have a basic idea of how the equipment works. That's enough to stay competitive, right? Well, maybe. Before you get lost or take a wrong turn, pulling over to ask for directions makes good business sense.

Deciding Whether Your Business Needs an IT Advisor

An *IT advisor* is a technology professional who ensures that your computer systems, software, and hardware keep up with your business demands. (We don't recommend using the term "computer geek" — it is *so* outdated.) This specialist can review your current computer systems and suggest dependable business solutions. He or she has the expertise to show you shortcuts and keep you on the cutting edge of technology. A good IT advisor can

- Research the equipment you need.
- Set up and implement new systems.

- Help you and your employees feel comfortable using new technology.
- Deal with any glitches that may arise.
- Just make things a heck of a lot easier and faster for your business.

Handling IT yourself

Of course, not every business needs an IT advisor. Maybe you're still in start-up mode and aren't yet at the stage where technology is a major concern. Perhaps you're the only employee or you have only a small staff, and your computer needs are simple. Or maybe you're a DIY kind of person (by that, we mean you "do IT yourself") who has the time to research, buy, and set up basic computer equipment.

Knowing when to hire an IT professional

At some point (hopefully, soon!), your business starts to grow. When that happens, you may find managing your own workload, along with the business's IT, overwhelming. You may also realize that the older systems you're relying on just don't cut it anymore, and you need some serious upgrades.

Ask yourself whether any of these statements apply to you and your business. If they do, you may want to hire an IT advisor:

- Handling IT solutions takes a lot of time away from other important business tasks.
- Your business's IT systems are going a bit over your head.
- You don't know what equipment to get or what kinds of equipment are compatible with each other.
- You bought equipment that you never use.
- You bought equipment that isn't powerful enough, and you're spending too much money on upgrades.
- You bought the right equipment, but you have no clue how to set it up properly.

IT professionals know how to solve your IT problems quickly and efficiently. They can even make sure that the transition between your old and new IT systems is a smooth one.

Listing the Qualities of a Good IT Advisor

You know that you want to hire an IT advisor, but you don't want to hire just anyone. Just because Aunt Hilda says that her neighbor is a computer whiz doesn't mean he's qualified. Finding the right IT advisor might take some time, but your business's future is too important to risk on the wrong candidate.

Start searching for your IT advisor before you really need one. That way, you won't end up working with sub-par equipment just before a big project for an important client is due.

Here's a list of what to look for in a potential advisor. A good IT advisor must

- **Listen.** No matter how much the advisor knows, he or she can't identify unique solutions for your business unless he or she listens to you. The right advisor finds out all he or she can about your company's assets, issues, and challenges. He or she also asks about your plans for the company's future.
- **Be an expert with the right technical experience.** Your advisor must be familiar with the hardware, operating system, and software that your business uses. He or she has experience working with clients whose needs are similar to yours. Also, he or she has recent training and technical certifications from the hardware and/or software vendors.
- **Appreciate small businesses like yours.** Until your small or medium-size business breaks into the Fortune 500, it has IT needs that are much different from those of huge multi-national corporations. The right IT advisor appreciates the particular issues that smaller businesses face. He or she can design cost-effective solutions that help you get the most from your technology investment.

- **Help you understand the technology.** Even if you can't hold your own in a conversation about servers and wireless networks, understanding the technology you're purchasing and how it fits into your overall IT system is important. The right IT advisor cuts through the jargon to provide relevant, easy-to-understand information about the technology you're considering for your business.
- **Balance costs and benefits.** Most smaller businesses can't afford to attach every bell and whistle to their hardware, software, and network system purchases. The right IT advisor carefully balances the costs of new equipment with its benefits to your business. A trustworthy advisor doesn't push the fanciest, most expensive equipment on you, but rather suggests options that make financial sense.
- **Win your trust.** After meeting with one or more potential IT advisors, ask yourself whether each person earned your trust. Did the advisor provide a straightforward fee structure? Did he or she have relevant and recent references? Did he or she research your company before talking with you? Did he or she listen carefully, speak directly, and seem to understand your business?

  If you can answer yes to questions like these — and the advisor meets the other criteria in this list — then you've probably found the right IT advisor for your business.

Asking All the Right Questions

When you're interviewing IT advisors, use this checklist of questions to find out whether they're a good fit for your company:

- Can you describe your most recent IT-related education and training?
- Do you have experience or specific training on the hardware, operating system, and software that we use or plan to use?
- How do you keep up to date on the latest IT developments, and how often do you update your own training?
- Have you worked with other small or medium-size businesses in our industry?

- What challenges have you faced when working with clients like us, and how did you approach them?
- Do you treat your smaller business clients differently from large businesses?
- Based on what you know about our business, what do you think our IT challenges are, and how would you deal with them?
- Can you finish the work in the time we've specified?
- What's your fee structure?
- What would you do if unforeseen challenges arise?
- Do you provide follow-up services? What do you charge for them?
- Will you be available to answer questions we have a few weeks or even months from now?
- If we have an IT emergency and need your help, how soon will you be available to assist us?

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Small Business IT

FOR DUMMIES®

Chapter 2

Get the PC that's right for you

A Reference for the Rest of Us!®

FREE eTips at dummies.com®

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Chapter 2

Buying a PC

In This Chapter

- Finding your PC (perfect computer)
- Checking out extra toys for your PC
- Choosing a desktop or a notebook computer

Buying a computer can be a scary thing. It's a big investment. Not only that, but you have to deal with a lot of crazy terms and technological jargon. Are you getting the right things? Is the salesperson baffling you with terminology?

As when you buy anything, the more you know about what you're buying, the more confident you'll feel about your decision. You need only a little knowledge to be prepared. If you do some research before setting foot in a store, you don't feel overwhelmed by options when you do go shopping. In this chapter, we take you through the steps to get the computer that's just right for you, no worries.

Taking Steps to Buy a PC

Imagine your perfect computer, the one that Santa would give you if you were good all year. In the upcoming sections, we outline a few simple steps that can help you find the best computer for your business — no elves required.

Knowing what you need in a computer

Know what you want to do with the computer before you buy it. Whether you want a computer to match the décor of your office or you want the Emperor of All Gadgets, it's up to you.

A computer is a device that can do many, many things; you may have more reasons to buy a computer than a computer itself could actually list! Do you need it for sending a lot of e-mail, creating digital photography layouts, playing music, watching videos, writing text, or anything else? Knowing your needs can help you find the computer to meet them.

Looking at software

After you know what you want your computer to do, you need to find software that can get the job done. *Software* refers to the computer programs that make computers behave in a certain way; software does the work. The programs are also called *applications* because they apply the computer's power to help you accomplish some task.

Visit some software stores and hunt down the software that can make your computer do what you need it to do. Or, if you already have a computer, you can browse the software selection on the Internet and visit online software stores. Check you the software developers' Web sites. Finally, you can ask around and see what kinds of software other companies in your industry use. Check with your peers, your industry association, and (if you can) your competitors to find out what they use. Heck, why not ask what that brilliant 14-year-old chess club genius down the block thinks you need? Advice is good!

Try software before you buy it. The better computer stores let you try it: Sit down at the computer and play with the software that you plan to buy. See how much you like it. See whether it works the way you expect it to. Does it make sense? Is it easy to use? If not, try something different.

When you find the software that you need, take notes. Each software package has its hardware requirements listed right on the box — like the nutritional contents on a box of cereal. Write that information down to use as guidelines when you shop for hardware. (We explain what those hardware requirements mean in the following section.)

Many software developers let you download a demo version of their software that expires after a certain amount of time so that you can try it out.

Choosing your hardware

After reviewing your software lineup, your next step is to match the software's requirements with suitable *hardware,* meaning the computer itself. You need to find hardware that can run your software. The software tells you what it needs (its requirements are printed on the side of the box), so you just have to get a computer that fits those criteria.

Getting the minimal computer set up for your current needs may work fine at first, but as time goes on, you may add more programs and peripherals, so your computer doesn't run as well as it used to. See the sidebar "Buying for tomorrow: Future-proofing your PC," in this chapter, for some tips on buying a PC that can last longer than a few months.

Just like a car, PCs have different levels of speed and performance, based on a few different components:

- **Central processing unit (CPU):** The big boss of your computer, the main chip that oversees all other parts of the system. Examples of CPUs that many of today's PCs use are the Intel Core 2 processor or its less-expensive, less-featured cousin, the Intel Pentium processor. The speed of your processor is measured in either megahertz (MHz) or gigahertz (GHz). (One GHz equals 1000 MHz.)

  

  The Intel Core 2 processor is a *dual-core processor* — a CPU that has two processors in the same integrated circuit. Each processor works efficiently as a single processor, but they're linked to each other so that they can perform operations up to twice as fast as a single processor can.

- **Random access memory (RAM):** Also called system memory, RAM is temporary storage, where the processor does its work, programs run, and information is stored while it's being worked on. RAM is the microprocessor's playground, its wood shop, its den. The more memory your PC has, and the faster that memory is, the better your PC performs — especially if your operating system is Windows Vista (which comes pre-loaded with most off-the-shelf PCs) because Windows uses a great deal of memory.

- **The graphics processing unit (GPU):** The chipset used on your video card. The better the chipset, the faster and more realistic the 3-D graphics that your PC can produce.

So, if you do design or need excellent visuals, this component is important in your future PC.

You may have the choice between an integrated graphics processor (IGP) and a discrete graphics card. An *IGP* is a graphics chip that's integrated into a computer's *motherboard* (your computer's main circuitry board). It takes the graphics part of the processing load off the main CPU. However, IGPs tend to have small amounts of memory, and their performance might not be as fast as a *discrete graphics card,* which plugs into the motherboard and usually has more memory. An IGP is often enough for a starter PC or notebook computer.

- **Ports:** If you look at a PC, you probably notice a bunch of openings with little symbols associated with them. These are the *ports.* And they're what allow you to connect a whole bunch of extras (called *peripherals,* which we talk about in the section "Pondering Peripherals," later in this chapter) to your PC. Of course, you need a port for your mouse, your keyboard, and maybe your printer, but what about a universal serial bus (USB) port for PDAs (personal digital assistants) or portable external hard drives? Or a FireWire port (a port through which data transfers very quickly) for video equipment?

Shopping around for service and support

Crazy Omar and Discount Dave may have deals on computers, and you can pick up a computer at the massive warehouse or membership store, along with a six-month supply of soda and a vat of peanut butter — but what kind of support do those places offer? If something goes wrong with your PC, the support consideration far outweighs getting a deal or finding the cheapest computer in the land.

You can easily forget service and support because they're not mentioned prominently in most ads. Instead, you see prices, deals, and sales. Ignore the money talk and look into these two features:

- **Service:** The ability to fix your computer if something goes wrong with it. The best service is on-site, where someone comes to you and fixes your little electronic friend right where it lives. The worst service is when you have to pack up your computer and ship it to some factory.
- **Support:** Help in the form of classes, phone support, or training.

The trade-off for a low-priced computer may be little service and no support.

Buying for tomorrow: Future-proofing your PC

If you've ever owned a PC before, you may have found that it didn't always take kindly to the installation of new software or peripherals — it ran a little slower, froze up once in awhile, or maybe even refused to work with the new application or device. To avoid being stuck with a computer that seems old before its time, keep these ideas in mind when you're shopping:

- **Start with the most current versions of everything.** The salesperson says he can sell you a PC that has last year's operating system at a 50-percent discount! What a deal! Not really. If you start with an older system, you're setting your PC up to be obsolete pretty quickly. Technology moves fast. You can't stay on top of new technology all the time, but your PC investment can last longer if you start at the top.
- **Think about the possibilities for expansion.** Does the PC have more than one USB port? Dual drive bays (for DVDs and CD-ROMs)? Can it accommodate your PDA? No PC is an island these days, so make sure that it's compatible with all the extras you use (or think you might use in the future).
- **Get a decent amount of memory.** You can always add more memory later, but you can save time and money by simply starting with a PC that has an amount of memory a step or two above the most basic model.

Does this PC come in green?

The evolution of the PC has brought us super-fast computers, which make your business more efficient. However, better performance used to mean that the computer used a lot more energy. And with everyone concerned about the environment, what can you do to reduce your computer's environmental impact? Good news: Today, processors such as the Intel Core 2 Duo processor family deliver great performance and consume less energy. Ask your PC dealer about annual energy costs associated with any PC that you're considering.

Buying your PC

When you're ready to buy your computer, buy it. You know what you need the computer for, you know what software to buy, you know what hardware to buy, you know it can handle any peripherals you may get in the future, and you've found a proper dealer with service and support. So go for it!

Of course, you might feel a bit hesitant. Buying a computer is a big investment, and you want to be positive that you're getting just the right one. You might think about the rapid advancement of technology, which could make your computer obsolete in as little as three years.

But you can't keep waiting for the next generation. Sure, they'll be better, faster, and probably cheaper. However, waiting gets you nowhere. Would you not catch a bus because you assume that the next bus may be less crowded or cleaner? No. You catch the bus because you have somewhere to go.

So, the bottom line is when you're ready to buy, buy!

PC shopping 101: Helpful hints

Keep these pointers in mind when you're making your big computer purchase:

- **Decide on your software before you choose hardware.** Software controls the hardware by telling it what to do.

Don't be tempted by marvelous hardware features. Don't be lured into buying one brand or the other by some advertising campaign. Without software, the hardware is practically an empty shell. Buy your hardware to support your software.

- **Forget about brand names.** Don't think about brand names, look for what the computer can do. Remember, you want your computer to work for you, so don't get lured into getting one that doesn't fit your needs just because you've seen it advertised on TV.
- **Cheaper isn't always better.** When you buy a bargain system, you usually end up with a competent and functional computer. But when things go wrong, you want the dealer to provide service to get your system fixed. That bargain price often doesn't include service. Look for a dealer that you can grow friendly with. The dealer's reputation, which is more important than price, is how it stays in business.
- **Think about the future.** Many PC buyers take the stance that technology changes so fast, you might as well get a cheap one now and then replace it when it fails in a few months. But that's not always practical. Your PC is an investment for your business. A good machine with a lot of memory, a good processor, expansion capabilities, and a decent warranty can last you two years or more.
- **Consider a custom-built computer.** Your IT advisor might be able to take trusted brand components and create your dream machine for less than what you'd pay for a brand.
- **Do your research in advance.** Different computers have different jargon (in case you haven't noticed). Don't expect a computer salesperson to be able to explain to you all the subtleties of things such as GPU, scan rate, MHz, and IEEE. Some disreputable salespeople may even dupe you into paying more money for obsolete and unnecessary technology. Many Web sites (such as `www.techterms.com`) exist to help neo-technophiles figure out computer lingo. If you can, go online and do your homework.
- **Factor in the extras.** The ad says $600, and you have just a hair over that — enough to pay the sales tax. Alas, you didn't read the fine print: That $600 computer doesn't come with a monitor. Oops!

Make sure that you buy a complete computer system! Double- and triple-check the ads for any missing pieces. You need a monitor, a keyboard, memory, a hard drive, and operating system software to make a whole computer system.

- **Pay by credit card.** Never pay for a computer with a check. Never pay cash. Always pay with a credit card. Why? Because you can put credit charges into dispute if anything nasty happens between you and the dealer. Credit card companies support their clients. If someone sells you junk, the credit card company doesn't force you to pay for it (as long as you take legitimate steps to resolve the problem).

Most banks don't let you reverse the charges on a check. If you pay cash to a shady dealer, your money is gone forever. Computer-dealer scams aren't as popular as they used to be, but they do still exist.

- **Software can be expensive.** Contrary to what you may think, computer hardware is only half your cost. The computer software that your computer needs probably costs the same amount as what you pay for your computer (over time, of course). Piece by piece, package by package, software is expensive, so include that cost in your budget.
- **Start small.** If you buy too much stuff too quickly, you may go overboard and never find out all about your system. Start with a system that's well suited to your initial needs. After you master that system, upgrade slowly and figure out what new components you need as you go.

Pondering Peripherals

You may still be looking right now, but you might as well think about all the add-ons that you want to work with your hardware.

We highly recommend that when you actually buy your computer, you start with a basic system, master it, and then go out and buy any extras that you want. But think about what those extras might be in the early phases of computer buying so that you know your hardware can handle the peripherals — just don't buy those peripherals before you get to know your PC.

Peripherals can be hazardous to your wallet or purse, so always think about their cost when deciding whether you really need them.

Printers, scanners, and all-in-ones

The first stop in the world of peripherals is the most common (and, most folks would say, the most useful) device of all: the printer, which allows your PC to produce hard copies of documents, artwork, and photographs.

In the digital days of yore — in other words, more than ten years ago — making a choice between an inkjet and a laser printer was ridiculously easy. After all, laser printers were prohibitively expensive, and they couldn't print in color. Therefore, every PC owner picked up an inkjet printer and got on with his or her life.

These days, however, the line between inkjet and laser printers has blurred, so we present a list of the advantages of each so that you can shop with the right type of printer in mind.

Laser printers

Today's monochrome laser printers start at around $100 to $300. Advantages of the laser printer include

- **Speed:** A laser printer can print pages more quickly than an inkjet printer can.
- **Low cost:** Over time, the toner costs for a laser printer total far less per page than refilling or replacing inkjet printer cartridges.
- **Quiet operation:** A laser printer is generally quieter than low-cost inkjet printers — which is a big deal in a quiet office, in which the printer usually occupies a central location.
- **Best quality text:** No inkjet printer — no matter how much you pay for it — can ever turn out black text and line graphics as crisp as a laser printer.

If you can afford to spend more for a color laser printer, it offers better quality color output than most low-cost inkjet printers. But pick a monochrome laser printer if you print mainly text and don't need color. You'll be glad that you chose that laser model after you go three months without changing a single toner cartridge!

Inkjet printers

Inkjet printers are still cheaper than laser printers. You can find an acceptable color inkjet printer for less than $100 anywhere on the planet, and they're still the color printing solution for most PC owners. Other advantages include

- **Versatility:** A color inkjet printer can print on many types of media, including craft paper, T-shirt transfers, and even printable CD/DVD discs.
- **Smaller size:** Saves you space on your desktop.
- **Larger paper sizes:** If you have the money to spend, you can add a large-format inkjet printer to your system that can print 11-x-17-inch or larger items.

Photo printers

Photo printers are specifically designed to create photographs that rival any 35mm film print. They either use the best quality inkjet technology or rely on dye-sublimation (dye-sub) technology (also called thermal wax printing). A dye-sub printer transfers heated solid dye from a ribbon to specially coated paper, producing the same continuous tones that you see in a photograph produced from a negative.

Photo printers can often accept memory cards from digital cameras directly, so you don't need a PC to print your digital photographs (although, with this option, you typically can't edit your photos before printing to make changes such as correcting red eye).

Although you can find a number of different sizes of photo printers on the market, most are smaller than typical inkjet printers. (Photo printers can't use standard 8.5-x-11-inch paper, and they're lousy at printing black text, which makes an inkjet printer far more versatile.) Both photo and inkjet printers can produce borderless images (just like a film print), but a true dye-sublimation photo printer is far slower than an

inkjet printer, and the special paper and dye ribbon that it requires make it much more expensive over the long haul.

Label printers

These printers look a little like toys — they're not much bigger than the label tape that they use — but if you regularly need to print any of the following, a label printer is worth twice its weight in gold:

- Address and shipping labels, complete with your logo
- ID badges
- CD and DVD labels
- Bar codes
- File folder labels

Just as valuable as the output, however, is the sheer convenience that you get from one of these printers! A label printer frees you from the hassle of designing and preparing labels on your inkjet or laser printer, and you don't have to hunt for your label sheets every time you need to print a new batch. (Anyone who's fought tooth and nail to align and print bar codes or address labels on a standard laser printer knows just what we mean.)

Scanners

Scanners are interesting beasts — and, man, you can get a lot of bang for your buck! In fact, a perfectly serviceable USB scanner is waiting for you at your local Maze O' Wires store for less than $100, and it can do all the following tasks:

- Produce digital images from magazine and book pages, photographs, and just about any other printed material. You can edit these images to your heart's content, send them as e-mail attachments, or record them to CD or DVD.
- Read text from a printed document into your word processor. This trick is called Optical Character Recognition (OCR) and can save you hours of typing.
- Produce images that you can fax by using your PC's fax/modem.

- Produce images from transparencies or slides (with the right attachment).
- Create copies of a document (in concert with your printer).

Some scanners let you e-mail, copy, or even create PDFs from the original scanned file — or even run your OCR software with a single punch of a button. Sassy!

The all-in-one

A hugely popular option nowadays is a great tool for small businesses: the all-in-one laser printer, scanner, copier, and fax machine. These machines pretty much do it all (except your laundry), and you can find them very reasonably priced (anywhere from $150 to $500). With all-in-one printers, you can

- Print documents from your PC.
- Send a fax.
- Scan a document or image directly to your PC as a PDF or JPEG file.
- Make copies.
- Reduce clutter in your office.
- Save money. You can invest in one good piece of equipment, rather than several.

External drives

Consider how simply you can add fast storage to — or record your own CDs and DVDs on — today's PCs. If you're the least bit nervous about digging inside your PC's innards in order to add more hard drive space, you'll be pleased to know that you can easily connect a fast external hard drive to your system — providing that you have the FireWire or USB ports available on your PC.

Portable hard drives and CD/DVD recorders

Forget the huge external hard drives of just five years ago. Those doorstops have been replaced by slim, trim models that run faster, are more reliable, and yet are no bigger than a pack of playing cards. At current prices, you can pick up an external 80GB hard drive that's a mere 1 inch thick and shock

resistant, yet can connect effortlessly to PCs with either FireWire or USB 2.0 ports, for about $150.

On the CD and DVD recording scene, you can find five major types of drives:

- **CD-R/CD-RW drives:** Can store around 700MB on a CD
- **DVD-R/DVD-RW drives:** Can store 4.7GB on a DVD
- **DVD-RAM drives:** Can store 9.4GB on a double-sided DVD
- **DVD+R/DVD+RW drives:** Can store 4.7GB on a DVD
- **Dual Layer (DL) DVD+R drives:** Can store 8.5GB on a DVD

The *RW* in the drive moniker stands for *rewriteable,* meaning that you can reuse a CD-RW, DVD-RW, or DVD+RW over and over. All these recorders can produce audio CDs and standard data CD/DVDs, but probably only the drives that can record the DVD-R and DVD+R formats can create a DVD movie that you can play in your standalone DVD player. Unfortunately, the rewriteable DVD-RW and DVD+RW standards aren't compatible with each other, and they're not compatible with older standalone DVD players, either; so you have to use your PC to watch the discs that you create. (Insert sound of palm slapping forehead here.)

Backup drives

You have three choices to pick from when backing up your system:

- **DVD recorders:** Especially DVD-RAM drives, which can store over 9GB per double-sided disc.
- **Online backups:** You can use a commercial Internet backup service. You can really use this solution only if you have a broadband connection to the Internet; backing up a big hard drive takes too long over a dial-up connection with a pokey 56KB modem.
- **External FireWire and USB 2.0 backup hard drives:** Allow you to start a full, automated backup of your system by pressing the button on the front of the drive.

No matter what backup method you use, we strongly urge you to do your duty as your PC's guardian and back up your system!

USB flash drives

The final storage toy is a little something different: The *USB flash drive* is a keychain-sized unit that needs no batteries and has no moving parts! Instead, it uses the same method that digital cameras use to store images. Your files are stored on *memory cards* (either removable cards or built-in memory inside the unit).

Most flash drives now range anywhere from 64MB to 4GB of storage. After you plug one into your PC's USB port, it looks just like any external hard drive (or a whopping huge floppy disk), but you can unplug it and carry it with you in your pocket. A flash drive doesn't need any extra software, so it makes a great "digital wallet."

Surge protectors

One clear sign of a PC power user is at the end of the PC's power cord.

True power users use either a surge protector or an uninterruptible power supply (UPS) to safeguard their systems. However, remember that neither can protect your PC from a direct lightning hit on your home or office wiring! (That's just too much current for any commercial surge device to handle.)

Otherwise, using a surge protector or a UPS helps guard against less serious power surges. Both provide additional AC sockets for your rapidly growing system. If you can afford to spend $200 to $300, the UPS is the better choice for the following reasons:

- **Safety nets:** A UPS provides a number of extra minutes of AC power if your home or office experiences a power failure — generally enough time for you to close any documents that you're working on (such as that Great American Novel you've been slaving over for 20 years) and then shut down your PC normally.
- **Auto shutdowns:** More expensive UPS models can actually shut down your PC automatically if it experiences a power failure.

- **Current cleaners:** Most UPS units filter the AC current to smooth out brownouts and noise interference from other electronic devices.
- **Audible alerts:** Some UPS units sound an alarm whenever a power failure or significant brownout occurs.

The number of minutes that your UPS lasts during a power failure depends on the power rating of the battery.

Desktop versus Notebook

A *desktop* is a computer that has a separate monitor, keyboard, mouse, and system unit. It doesn't have to sit on your desk (you can put it on any stable surface where you work), but because of its size, you don't really move it around too often.

A *notebook* is a computer in which the main parts are all included in a neat little package. It opens or unfolds like a paper notebook, but some people call it a *laptop* because it's small enough to sit on your lap.

So, you're faced with the big conundrum: Do you buy a desktop or a notebook PC? We give you a few pointers on the pros and cons of both in the following sections.

Deciding on a desktop

We can think of many advantages to buying desktop computers to use for your business. Here are a few good ones:

- **Desktops are expandable.** Although you can hang plenty of peripherals off a modern notebook (using USB and FireWire ports), desktops are just plain easier to expand and upgrade (especially the processor and graphics card, which are practically impossible to swap on a notebook).
- **Desktops are easier and less expensive to repair.** If the sound card fails in your desktop, you can replace it yourself with a new, relatively inexpensive adapter card. However, if the sound hardware fails in your notebook, you can't fix it yourself — and, in fact, you probably need to replace the entire *motherboard* (your computer's main circuitry board) inside the unit. Get out your credit card.

- **Some desktops are less expensive.** A basic desktop system costs less than a comparable basic notebook. If budget is a huge concern for you, you can save some money by going with a desktop PC.

Noting points about notebooks

Desktop's little brother, the notebook, isn't to be outdone. Notebooks might be small, but they pack a serious PC punch. You might consider a notebook for a few reasons:

- **Portability:** This reason seems obvious, but the major advantage of notebooks is that you can pretty much bring your office with you everywhere. They're small and light, and you can fit one in your briefcase. You can even use your notebook computer on a long flight to pass the time playing games . . . uh, we mean working hard on the big report. Also, most of them have built-in wireless capabilities, so you can be online anywhere that has a Wi-Fi hotspot.

  

  Part of that portability stems from the fact that notebook manufacturers tend to put all the graphics and video hardware on the motherboard to save space. So, if one thing goes wrong, you probably need to take the notebook to a professional for major repairs.

- **Less clutter:** Notebook computers simply take up less space. If your workplace is really small or your employees need to share desks or cubicle space, notebook computers can really help cut the clutter of all those wires that come with desktops.

- **Cool factor:** You can't help but be a little concerned about image. Although some desktop computers have cool designs, notebooks just have that "it" factor. Some look so sleek that they practically double as fashion accessories, which is hard to resist. Just remember that often, the sexier the notebook, the higher the price.

Luckily, today's notebooks are as powerful as desktop PCs. So, you no longer have to feel like a second-class citizen, even when it comes to features such as high-resolution graphics, larger hard drives, and CD/DVD recording.

Avoid laptops that use standard desktop microprocessors. Those chips use battery power quickly and also tend to get too hot for the laptop's tiny case. If in doubt, ask the salesperson, "Does this laptop have a special laptop microprocessor?" (The numbers, names, and IDs for such microprocessors are too numerous to list here.)

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Small Business IT For Dummies®

Chapter 3

Covers everything you need to know about servers

A Reference for the Rest of Us!®

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Heather Ball

Small Business IT For Dummies®

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Chapter 3

Sussing Out Servers

In This Chapter

- Exploring servers
- Deciding whether you need a server
- Figuring out what kind of server you need
- Preparing for the server

You work hard for your business, investing your time, money, and talent. So, of course, you want computers that work for you, not the other way around. In this chapter, we talk about the benefits of getting a server to manage your PCs. It won't refill your coffee or tell you about the specials, but the functions it does perform are a whole lot more useful to your business.

Getting to Know Servers

A *server* is a computer that stores, manages, distributes, and processes data. A server can also do other useful jobs, such as run software for sharing files or hosting your business's Web site.

The relationship between PCs and the server

The server's job is to have a good relationship with every individual computer in your office and to help those office computers have good relationships with each other. When you set up your business with PCs that are just right for its needs, they must all work together. Remember, no PC in your office is an island.

Individual desktop computers are the workhorses of your small business's computer system. They store important data and run the basic applications that your business needs. However, PCs don't have the power to do it all. If they're overloaded with huge amounts of information, they slow down and can't work properly. Imagine trying to run a race with an extra 100 pounds on your back.

Also, these PCs by themselves don't have the greatest communications skills. They're not designed to collaborate with and talk to the other computers at your workplace.

The server is like the brain of a business's computer network. It allows all the individual computers to communicate with each other, and it remembers information that would otherwise slow down and overburden PCs. It also runs the larger programs that the PCs simply can't handle themselves. Think of it as an IT office manager.

Exploring how a server can serve you

When your business grows, so does the workload of individual PCs. They might start to slow down and drain your productivity. (Ever waited an eternity for a two-page document to open or a Web page to load? What a waste of time!) You might take a strength-in-numbers approach and add more computers to fix the problem. Or you may think that setting up a small *peer-to-peer network* (which lets individual PCs share files with each other without using a server) is a good idea, but that solution often costs more, is less secure, and gives you few possibilities to expand the network.

If you notice that the limitations of your desktop computers are affecting your business negatively — and you expect the PCs to run even more applications and store more data in the future — don't add more or flashier PCs. You need a server.

Checking out the benefits of the right server

Adding a server to your business's computer system has many benefits. Here are a few to remember. The right server can

- **Make operations more efficient.** A server that eases the burden on your PCs and allows them to communicate with each other makes your business more productive. That productivity can increase revenues, lower costs, and support growth.
- **Look to the future.** Because a good server lets you expand your network and add to its capabilities, it addresses your business needs now and for the future.
- **Give your computer system more power.** Servers are more powerful than desktop computers and can support more sophisticated software applications, more users, and more information.
- **Make your business more reliable and secure.** Servers can help you keep critical applications up and running. Plus, they can help prevent computer viruses and unexpected data loss.
- **Keep things simple.** A server lets you avoid the tangle of workplace connections by keeping everything in one place.

Busting server myths

A lot of rumors are floating around about servers, and we want to clear them up. Why? Because we want to convince you that they can really help your business. Servers are *not*

- **For large businesses only:** Businesses of all sizes can benefit from server-based applications that can offer centralized storage, enhanced security, and improved productivity.
- **Unreliable:** Servers help prevent major data loss, which can be a major cause of business failure.
- **Overpriced:** Servers are affordable, and many allow you to pick and choose features to keep costs down.
- **Complicated to own:** You don't need a full-time IT staff to implement or manage a server. Many servers are simple to manage, which saves you time and energy while increasing your business efficiency.
- **Disruptive:** Adding a server to your computing infrastructure isn't much more difficult than adding a new PC to your network, and IT advisors, sellers, or other experts can lend you a hand if you need help.

Knowing Whether Your Business Needs a Server

Getting a server for your business may sound like a pretty good idea, but before you invest in one, you want to be sure it's right for you.

Determining your business goals

Think about how your business is running right now. Most likely, you could improve in certain areas. If you find that the statements in this list apply to your business and where you want it to go, a server can probably help you get there:

- You need an efficient, reliable way for many computers to share information.
- You need to protect your business information and network from unauthorized users.
- You need to back up information on a regular basis.
- You can save money if employees can share equipment, such as printers and scanners.
- You and your employees need secure access to company information and resources when out of the office.
- You and your employees need to access shared files, e-mail, or applications simultaneously.
- You can improve service and relationships with your customers by using advanced software applications, such as customer relationship management (CRM) tools.
- You need to host your own Web site and e-mail system.
- You need to communicate more effectively with customers, employees, and suppliers.
- You want access to simple business data and information that shows you how your business is doing.

Deciding whether a server is right for your business

To know whether a server makes sense for your business, examine your current workload and envision where you want your business to be in the near future. If you work with large amounts of data, have employees who need to share files, and worry about protecting business information, then you can probably benefit from a server.

If your business has only a few employees and doesn't use large amounts of data, and your data isn't sensitive to theft or destruction, then desktop computers may work just fine for now.

But don't forget that in business, you always have to think about tomorrow. After all, that's why you have a business plan. A growing company must think about its future when it decides whether to deploy a server. Your current system might be okay today, but what about six months or a year from now?

Choosing Your Server Functions

So, you know that your company needs a server. Now, you decide what exactly you need the server to do.

Looking at kinds of servers

Here are some of the basic types of servers that are worth considering:

- **File and print server:** Most small businesses start with this type of server, which stores data and files, and manages printing services. It takes some of the burden off individual PCs, freeing the desktops so they can get back to their work while the server does the heavy lifting. And it lets more users share printers and other devices, which can save you money.

- **Web and e-mail server:** You may find this server useful if you want to host your company's Web site and make sure that it's secure. This server also runs software to send and store your company's e-mail.
- **Database server:** If you're dealing with large volumes of data that employees need to share, but that you also need to keep safe from unauthorized users, a database server allows you to store the information and helps you manage it.

A larger business may need multiple servers, but if your business is small, you can probably have a single server perform multiple functions.

One of the biggest mistakes that you can make is to combine a Web server and a database on the same computer. Web servers are notoriously easy to breach; a hacker can get into the database much more easily if the files are physically located on the same computer as the Web server.

Considering your business's specific needs

Thinking about five specific areas of your business helps you know what functions you need in a server. That way, you don't end up paying for server capabilities that you don't use or buying a server that can't handle your company's operations.

Software

Do you want to add additional software packages to your server, such as database software? If you do, find out how much memory and what processor speed the software requires. Talk to the software vendor or reseller about the type of server that works best with the applications you need to use, such as operating systems.

Software licensing fees may be per user or per server. Having employees share one server-based version of software among themselves might be cheaper than buying multiple copies for individual computers.

Equipment

How many scanners, printers, and other types of office equipment do you have now, and how many will you add in the near future? Your server needs to be able to manage them all and be flexible enough to accommodate more. How many desktops does your company have, and do employees need to share information or run applications on each other's desktops? Are any of the desktops overloaded with the applications they're running or the amount of data they're processing? If so, you need a server that can handle these applications, instead of leaving it up to the PCs.

When your business grows, you can add additional servers or expand your current servers to meet your changing business needs.

Safety and security

How much confidential or sensitive information does your business deal with? If you handle a significant amount of sensitive information, your potential server's security is very important. Also, think about what would happen if you had a major data loss. Would it ruin your business? If so, you need a server that backs up thoroughly and often.

Data and storage

How much data do you currently manage and store, and do you think the amount will go up in the future? Your server needs to be able to accommodate however much information you need it to, and the information must be easy for you to access.

Users and employees

How many employees do you have now, and how many do you expect to add in the near future? Your server needs to keep track of everybody's data, and keep it separate and organized, plus let them share it. Also, if you have a Web site, how many users do you have now, and how many do you want to have soon? Be sure that the server you get won't crash if you have a massive increase in Web site traffic, for example.

Planning for Your New Server

Adding a server to boost your business's efficiency is definitely a change for the better. But you can't make the switch quite as simply as you can snap your fingers. To make the transition from the old system to the new system go as smoothly as possible, a little planning goes a long way.

Financial effects

Decide how much your business can afford to spend upfront on the new server system and don't be taken in by paying for extra bells and whistles you won't even use. If you're not sure you want to buy the server (either because you're still thinking about what functions you need or you just don't want to make the financial commitment), try leasing one so that you can feel things out before you buy. Remember that after the initial cost, you also have to estimate any ongoing costs for operating and maintaining the server.

Effects on your current operations

If your office is in a brand new building, you probably don't need to worry about whether you have the power to operate the server. But you may want to check out how much power the server needs and if your office space can handle it, especially if you're located in an older building.

When you know that you can accommodate the server, power-wise, you need to decide where you want to put it. Choose an area away from day-to-day office traffic so that you can keep it physically safe. You probably don't want to house such an important piece of equipment next to the coffee maker. If you have an IT advisor, he or she could recommend a good spot.

You may want to do a little data housekeeping before the server arrives, too. Doing so lets you start with a clean IT slate and decide exactly what to transfer onto the server so that you don't have the same old useless files taking up space.

Anticipate a few glitches when you're making the transition to the server system. Try to schedule the deployment during non-work hours. And, if possible, don't do it during your month-end rush or busiest season.

If you do deploy the server during work hours, your operations may need to shut down for a few hours during that time. Talk with your IT advisor or whoever's performing the installation so that you know how long it will take and if you can do anything to speed the process along.

Effects on your staff

Your employees will use the server every day, and you may need to train them in the new system. For that training, you need to schedule time and decide on a trainer. The sooner you can get everyone up to speed, the better the effects on your business.

Also, you may have an in-house employee who's willing and able to take on routine server-related tasks, such as running backups or phoning the vendor for help with any problems. Make sure this person gets priority training.

Expect some short-term slowing while your staff figures out the new system.

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Chapter 4

Ensure that your network is secure

A Reference for the Rest of Us!®

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Chapter 4

Network Security

In This Chapter

- Prioritizing network security
- Noting potential security threats
- Implementing security

When you travel along the road to network security, the journey doesn't have to be a long and arduous one. Although many experts in the industry want you to believe that network security is complicated, expensive, and best left to their capable hands, the truth is that anyone with a medium level of experience with networks and computers can undertake many basic network security measures. FBI studies show that more than 80 percent of network security attacks could have been avoided if only the most basic steps had been taken. In this chapter, we help you to identify the important network security issues and tell you how you can keep your business's network secure.

Knowing Why Network Security Is Important

Many small business owners have the same misconception. They think, "I'm just a small business, a nobody. A hacker isn't interested in my company's computer network." But we can't stress enough that this is simply not true.

If you don't take the proper steps to keep your network safe, you're putting your business at serious risk. The upcoming sections take a look at the areas that can create problems for your network security.

Discovering Security Snares

Although networks are set up differently and have different uses, they're amazingly similar when it comes to their basic security requirements. You use passwords to access all networks, and all networks are vulnerable. (For example, your network could get infected by a virus, which we talk about in the section "Viruses," later in this chapter.) You need to put into place solid security measures for your network, run through all these issues with your IT advisor, decide whether you need protection, and figure out what sort of protection to use.

The method of protection, the strength of your protection, and your philosophy of protection determine your *security posture.* If you have minimal protections and don't really see the need for security, then you have a weak or passive security posture. On the other hand, if you implement strong protection measures, have a thorough training and education program, and monitor your security levels regularly, you have a strong posture.

Weak passwords

Passwords are often the only protection used on a system. A user ID is only a name and doesn't verify an identification, but the password associated with the user ID works as an identifier. Passwords are the keys to your network — and the easiest things to find. Just one insecure password can enable anyone to successfully log on to your computer — and access your network.

A hacker can get passwords off your network very easily. Passwords zoom over networks constantly, and with only a well-placed eavesdropping program (called a *password sniffer*), you can gather hundreds and thousands of passwords in a matter of hours. "Ah," you say, "but these passwords are encrypted!" Sometimes they are, but they usually use a very weak encryption method. Hackers can find *password crackers* — programs that crack encrypted password files — freely available on the Internet, and those programs can usually unscramble a network's passwords.

We highly recommend that everyone who logs on to your business's computer network change his or her password regularly.

Using strong, hard-to-crack passwords is an easy line of defense against a breach of security. You and your staff must create strong passwords. So, just what do we mean by a strong password? In general terms, a *strong password* is one that you can't find in any dictionary — English or foreign. It also means a password that nobody can guess easily. Longer passwords are harder to guess or crack than short passwords.

Follow these guidelines to help you and your employees set strong passwords:

- **Don't choose something personal as a password.** So, your cat's name, your favorite TV show, your birthday, or the name of your kid's soccer team are out. If the possibility exists that someone could guess it, don't use it for your password.
- **Use a nonsensical combination of letters.** The best passwords appear to be sheer nonsense. For example, if you take the phrase "Nighty night and don't let the bed bugs bite" and use just the first letter of each word, your password is nnadltbbb. That's a good one (and easy for the user to remember), but see the following bullet to make it even stronger.
- **Include a mix of upper- and lowercase letters.** Include an uppercase letter somewhere other than at the beginning and also include a number. Because the letter *l* looks like the number one, you could use a one rather than that letter; your password then becomes nnAd1tbbb.
- **Longer passwords are better.** Make your password at least eight characters long.

  

  System administrators with *root privileges* — that is, with no access restrictions and the ability to make any sort of changes — must have the strongest passwords and the most stringent rules about changing and reusing them.
- **Change your passwords regularly.** Change even the best passwords every 60 days or so. Many operating systems enable you to set this rule for each user. Some users find this practice inconvenient, but it's smart security.

- **Set new passwords, instead of reusing the same ones over and over.** Don't use the same password again within the same year, or even the same 18 months.
- **Don't use a set of characters straight off the keyboard.** Never use something like qwerty, 12345678, or asdfghj for passwords. Even though they look nonsensical, they follow a distinct pattern of consecutive keys on the keyboard, and password crackers can break them in seconds.
- **Treat your passwords as top-secret information.** Never share passwords. Don't write your passwords on a sticky note, then attach that note to your computer or put it under your keyboard where anyone can find it.
- **Don't be afraid to change your passwords.** If you or an employee suspects that someone has stolen or compromised a password, change the password immediately.

Bad passwords are just as bad as no passwords at all.

Viruses

E-mail is a wonderful tool. It increases productivity and lets you communicate efficiently. Unfortunately, e-mail is also one of the most common ways for viruses and malicious programs to wreak havoc on your network and damage data.

Viruses aren't the only problem with e-mail programs. Do you allow attachments to come in with e-mail? What about executable programs, such as screen savers and games? Many malicious programs enter a system this way. These programs, called *Trojan horses* (also known as *trojans*), can do direct harm (such as erasing a hard drive) or indirect harm (such as installing sniffers to gather username information and passwords).

Anti-virus software is the best protection. It's not 100-percent effective, but you'd be crazy not to use anti-virus software to protect computers on your network; otherwise, you're leaving your network open to infection. Anti-virus software consists of two parts: the scanning engine and the signature files. The *scanning engine* tells the software how and where to scan, and the *signature files* are essentially a database of known viruses and their actions. The scanning engine compares files on your

computer to the known viruses in the signature files. When anti-virus software vendors find new viruses, they issue updates to their data files to include the new strain.

You need to update both the scanning engine and the signature files on a regular basis, or the anti-virus software loses its effectiveness. The software program usually runs its own updates regularly. If it doesn't, you can use the software's Update command or check the vendor's Web site for updates.

For your anti-virus software to be most effective, you need to install it on all computers in your network, as well as on the server. That's the only way to catch viruses at all entry points.

Software loopholes

All operating systems and software applications have security holes. Some are more problematic than others, but all have the potential to give an unauthorized person access to your network.

Programs contain millions upon millions of lines of text, called *code,* and determining which sections of code leave security holes is extremely difficult and labor intensive. Most software companies say they can't justify the increased cost that securing their code would entail. However, the dedicated, sophisticated hacker examines code and program functionality for these flaws and then writes programs that exploit the holes. The sophisticated hacker often releases his or her exploitation software for free on the Internet so that anyone can use it.

Software companies know that security holes exist in the thousands, and they release fixes in a fairly timely manner. These fixes are known as *bug fixes, hot fixes, patches,* and sometimes *updates.* For the most part, you can easily download and install fixes, but the installation on many computers can take hours. *Firewalls* (programs designed to prevent unauthorized users from accessing your network) can block some of the security holes in software, but if you want to be properly prepared, we recommend that you install fixes when they become available. Talk to your IT advisor about regularly checking for updates and fixes for software that your business uses.

Scams

Your employees are probably one of your business's greatest assets. Unfortunately, they can also be one of the biggest weaknesses in your network security. But they don't mean to be. People are trusting souls, making them particularly vulnerable to social engineering. In simple terms, *social engineering* is just another phrase for a scam. People are scammed into giving away passwords and valuable data every day.

You've most likely heard of people being suckered in by those e-mails in which a prince from a distant country claims he'll transfer millions of dollars to you, if you only give him your bank account number. Maybe you wonder how anyone could be so gullible, but never underestimate the human element.

Say you have a new employee, Jack, and he receives a phone call. The person on the other end claims to be from your business's Internet service provider (ISP), and she wants Jack to change some of the settings on his computer and test his passwords. Of course, Jack wants to help. He doesn't think to verify that the call is indeed coming from your ISP, and frankly, he doesn't even know what ISP your business uses. A legitimate ISP employee may be on the other end of the line, or a hacker may have just gained entry into your network with a valid username and password.

Not only do you have to be able to stop intruders at the network level, you also have to be able to stop them at the physical level in order to have an effective security program. No firewall or software patch can stop this type of threat. Employee education and awareness is the only security mechanism that works, in this case.

Be sure that no employee gives out network information, such as usernames, passwords, or even the software you use, without knowing whom they're giving the information to and why they're giving it.

Hackers

Hackers are skilled computer users who gain unauthorized access to your network and cause trouble. Some people (often those affected by hackers) also think of hackers as computer

terrorists. Typically, hackers can write common attack programs and have an in-depth knowledge of how networks communicate. Hackers are a real threat: They know how to hack and can enter your network — almost any network — if you leave openings. Because they know a lot about your system, they may steal your organization's proprietary information.

All computers on a network — and the Internet is a network — are identified with a number, like a telephone number. A hacker can't tell by your computer's number whether you're a large network or a small one, so if you think they don't go after small businesses, you're wrong.

As far as the hacker knows, you're just another target; hackers probe anything that looks interesting. And if hackers don't find anything of interest in your network, they can possibly use your network to attack others.

If someone hacks into your network, he or she has access to all your company's data and other information, including information about your clients, staff, finances, and operations.

Hackers won't go away, so you have to do your best to keep them out of your network. Here are your best lines of defense:

- Have strong passwords and change them regularly.
- Be cautious whenever you open an e-mail attachment, even if it's from someone you know. If you aren't sure whether an attachment is safe, don't open it: Talk to your IT advisor.
- Download security fixes for software when those fixes become available.
- Be sure your operating system has a firewall and enable that firewall.
- Share files only with employees or other sources that you know and trust.

Former employees

People who move on from your organization can and do pose a real security threat to your system. Do your employees take company files with them when they leave? What keeps them

from doing it? Seriously consider these questions, and then answer yourself honestly.

Employees who feel your company has dealt with them improperly or unethically may leave and harbor a grudge. These employees may try to access your network to either do damage or steal important data. If the employee can't gain access to your system, he or she may try to find an accomplice within the company to help with nefarious activities.

The following list includes precautions that a company can take to safeguard network security in the event of employee termination:

- **Disable network access.** When an employee is set for departure, disable his or her e-mail and network access immediately. If administrators need access to any files on the user's home directory, the system administrators have commands and tools that they can use to get that data. Make sure you leave nothing that the old employee can use to gain entry to the system.
- **Recover keys and identification.** Many, but not all, companies have employees turn in keys and identification upon their termination, a practice that guarantees former employees can't later physically enter the premises.
- **Conduct exit interviews.** If your company conducts exit interviews upon employee termination, keep a record of the entire exit interview process. If the employee makes threats against the company, even veiled threats, you then have a record of what he or she said and to whom.

Securing Your Network

You can take many practical, easy-to-implement precautions to secure your business's network. The following sections give you some good advice worth following.

Changing your default configurations

Installing a system right out of the box and leaving it with the *default configuration* (the regular settings that the

manufacturer puts on all copies of the system) is probably one of the most common mistakes that people make when setting up a network. Default configurations often have default administrative accounts and passwords that hackers the world over know.

This mistake applies to routers, hubs, switches, operating systems, e-mail systems, and other server applications, such as databases and Web servers. We can't think of any software that's immune to this problem.

In addition to having known passwords on the computers, default configurations contain multiple security holes that you need to plug. Before you ever put any computer online, be sure that you change the default account names and passwords, and apply all security patches. Spending a little bit more time on a computer at this point saves you a lot of grief later. The fewer holes you leave on a network, the harder it is for someone to break into your system.

Installing security updates

Almost all software contains security holes. But places such as the Computer Emergency Response Team (CERT, at `www.cert.org`) and SecurityFocus (`www.securityfocus.com`) list dozens of new alerts daily. The person responsible for network security needs to be aware of these alerts. He or she should subscribe to one of the many services that send e-mail alerts on specific problems. Many of these services allow you to sign up for alerts that pertain to only your situation. And, as soon as the alerts appear, you can obtain the fix and apply it to your computers. Although a time-consuming and possibly inconvenient practice, it's one of the best things that you can do to ensure your network security. All the firewalls in the world can't help you if you leave back doors open to hackers.

As soon as software companies make their alerts public, hackers start searching for computers on the Internet that are vulnerable to the attack that made the alert necessary. As soon as hackers find those computers, they share the addresses with other hackers in chat rooms and on Web sites.

Backing up early and often

When an intruder trashes your system, the best recourse you have is to take your system offline and restore it from your backup. You *have* made a recent backup, haven't you? Good. Are you certain that the backup is a *restorable* backup? (We don't let up, do we?) You use some types of backups for archival purposes, only. Those backups aren't intended to restore a system to order. Also, sometimes people discover — too late — that their backup tapes are useless because of some corrupted data in the backup directories. You have to test your backups occasionally to make sure they're intact.

Backing up systems is like flossing your teeth: Everyone knows they should do it frequently and thoroughly, but few people do it often — and even fewer people do it properly. Hundreds of suppliers of backup solutions exist, but we can't discuss all of them here. However, there's a method to the backup madness:

- **The first day of every week:** Make a full backup of your system, including every file on every computer.
- **On subsequent days:** Make an incremental backup, which includes only files that have changed since the last full backup.
- **Once a month:** Store one of the full backups for archival reasons. This way, if you ever have to resort to restoring your system, you never have to go back more than one week.

Never keep your backup media in the same location as your backup computers. If the location in which you store your computers suffers a physical disaster, such as a fire or tornado, then you haven't lost the backup tapes, as well. If you keep your backups off-site, you can get your network back up and running in no time.

Backups don't prevent hacks or intrusions into your network, but they can help you recover in the case of such events. Because online vandals commonly target Web servers, many people keep a live backup (or *mirror*) in place just for that eventuality. If your Web site gets damaged, you can easily get the correct version running — that is, after you fix whatever problem enabled the intruder to access your system in the first place.

Protecting against surges and losses

Protecting against surges and losses goes hand-in-hand with making regular system backups. In networking, you need to keep your system available. If your network goes down, your business can be devastated.

If your business is located in Lightning Alley, you discover pretty quickly that *surge protectors* (devices that prevent electrical spikes from knocking out or harming your network) and *uninterruptible power supplies* (or UPSs, which keep your network up and running on battery power in the case of a power failure) are indispensable.

In any critical system, you need a certain amount of redundancy in place, in case parts your system start to fail — whether because of a hack attack or a natural disaster. For example, you can build a copy of your Web site on another machine. Then, if your main Web site suffers mechanical failures or a hack attack, you can unplug the bad one and plug in the redundant one.

Your redundancy plan doesn't have to include top of-the-line equipment. Equipment that you've slated for the dump can often serve you well in an emergency.

Remote connections

Do you allow *remote connections* to your network (in which users connect to your network when they're not physically in your office)? If so, you can add remote connectivity to your list of security issues. Remote connections via modems are a big a concern because you're trusting someone outside the physical confines of your building to use your network. The computer that you use to connect remotely must be as secure as your internal network; otherwise, you create additional problems for yourself.

Take a notebook computer, for instance. While they're on the road, many employees connect to the company's network by using their company notebooks. Because they use their notebooks frequently in this manner, these employees also allow their computers to store their usernames and passwords to

make the connection faster and easier. However, if someone steals the laptop and nothing exists to prevent the thief from using it, he or she can quickly and easily connect to your network. Almost worse, you can't tell that the connection is unauthorized because the thief uses an appropriate username and password. No alarm bells ring!

You need to protect all computers that you use for remote connections from unauthorized use, for example, by enabling the basic input/output system (BIOS) password. *BIOS* is the program that a PC uses to get its system started after you turn it on. If a computer needs a BIOS password, that computer doesn't boot up without it. In addition, you may want to consider encrypting the data on laptops because most thieves don't go to the time and trouble of trying to decrypt the data. They just reformat the drive and sell the computer.

Some remote computer connections use PCAnywhere or similar programs to allow the two computers to exchange data. These remote connection programs have their own security problems, so check with the vendors for any security fixes that have been released.

Telnet and FTP are two remote connections whose security issues folks tend to overlook. *Telnet* is a remote connection program that allows you to act as if you're sitting directly in front of the computer. System administrators frequently use it when they have to make important changes to computers that are physically located in another office or another building. Being able to use telnet saves them the time and bother of walking to the other computer. But because telnet allows authorized persons to access a computer located elsewhere, it can possibly allow malicious intruders to enter your system, too. If an intruder can guess or crack the password for telnet, he or she can telnet into your system to change configurations or install unauthorized programs.

FTP programs have a list of problems that many hackers have exploited of late. *FTP* stands for *file transfer protocol.* You use FTP to move, copy, or delete files. Like telnet, you use it to connect to a computer that's physically located somewhere else. You can download security patches and configuration advice online, and you need proper user accounts and permissions to secure these services. As always, you must have

strong passwords! (Refer to "Discovering Security Snares" for tips on how to create strong passwords.)

Knowing whom to trust

Of course, you know who's working with you in the office, but what about others on downline connections? (*Downline connections* are connections that go beyond the confines of your network to business partners or clients.) Ask yourself these questions to ensure that your network is properly protected:

- Have you set up your computers to trust computers in other companies so that you can share data?
- Are you sure that you have their correct IP addresses?
- Do you have a limit on the number of other networks you trust?
- Do you know who's remotely logging on to your network, if you allow such access?

Files exist on your network that list trusted connections. Make sure the addresses of those networks are correct. Also, make sure that your firewalls and routers have the correct address information about your trusted connections. Reviewing all this information regularly can help you make sure that you haven't made any mistakes and that all the information is up to date and accurate. If you terminate an agreement with another network, make sure that you delete that information as soon as possible and that you block all connections from that network.

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Small Business IT For Dummies®

Chapter 5

Keep your PC safe from viruses

A Reference for the Rest of Us!®

FREE eTips at dummies.com®

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Chapter 5

Your PC and Internet Security

In This Chapter

- Keeping your PC secure
- Discovering your enemies
- Preparing your defenses
- Backing up

The Internet may be a thriving community filled with information, but how safe is it for your PC? Nowadays, pretty much anyone can get online, and because the Internet is an open system, a lot of bad guys are prowling around out there. They make nasty programs that can do nasty things to your computer if you're not careful.

But never fear! You can do a lot to keep your PC happy and free from any unwanted programs. This chapter helps you figure out what your computer might be up against and tells you what measures to take to protect it.

Taking the First Steps to a Secure PC

You don't have to lock your computer in a bank vault, write the combination on a piece of paper, and then swallow it so that no one can find it. Don't chain your computer up in a safe and send it to the bottom of the sea, Houdini-style. The first

steps you can take toward having a secure PC are actually quite simple, and anyone can do them.

Trusting yourself

You can't download the first step to avoid any nastiness on your computer off a CD or the Internet. Your first line of defense is simply your good ol' common sense.

In fact, the most successful computer viruses have propagated simply because of human nature. Those bad guys and gals count on *human engineering* — your ability to be tricked into doing something you wouldn't do otherwise, such as opening a questionable e-mail attachment or clicking a Web page link because you're fooled into thinking that "your PC is at risk!"

If your gut tells you that a Web site looks suspicious, or you don't totally trust the address that sent you an e-mail attachment, listen to your instincts! You can avoid PC problems much more easily (and cheaply) than you can deal with them after they do their naughty jobs.

Using strong passwords

Not everyone enables the password feature on their computers that prevents just anyone from logging on. Well, we think you should. Though not foolproof, you can easily use a password on your PC to help keep your information from falling into the wrong hands.

Passwords are often the first line of protection on a computer. A user ID is only a name and doesn't verify an identification, but the password associated with the user ID works as an identifier.

Passwords are the keys to your computer — and hackers can find insecure ones easily. Just one insecure password can enable anyone to successfully log on to your computer — and access everything on it.

For guidelines on how to choose a strong password, check out Chapter 4.

Identifying Enemies and Lining Up Defenses

Your PC can often play host to a throng of bad guys. You probably recognize some of the names in the following sections. Like with everything about computers, malicious software *(malware)* is often named in either an overly technical or silly way. They sound cute, but the terms by themselves don't really help in understanding what the bad programs do. The following sections talk about these nasty or annoying programs that enjoy preying on your PC.

Phishing

Pronounced "fishing," this term applies to a Web page or e-mail that's designed to fool you into thinking it's something else, such as your bank's Web page. These fraudulent sites and e-mails fish for information, such as account numbers and passwords. The Web page or e-mail tricks you into providing that information because it looks legitimate. It isn't.

The phishing scam is quite popular, mostly because it effectively fools innocent people into doing something they'd usually never do. Happily, you can worry a bit less (but don't completely stop worrying) about phishing scams by using helpful little programs from your Web browser called phishing filters or phishing protection.

The *phishing filter* checks the sites that you browse against a regularly updated list of known phishing sites. If you come across a suspicious Web site, your browser alerts you that you may have surfed onto a phishing site.

If you use the browser Firefox, the phishing protection feature is automatically enabled. Check your Firefox security settings to see how high a level of protection you're using because you can increase or decrease it, if you want.

If you use Internet Explorer (IE) as your browser, you might have to enable the phishing filter. To check IE's phishing filter settings, follow these steps:

1. **Click the Tools button on the toolbar.**

   A drop-down menu appears.

2. **Select Phishing Filter.**

   The Phishing Filter submenu appears. Check whether the command reads Turn Off Automatic Website Checking. If it does, you're done; otherwise, continue to Step 3.

3. **Select Turn On Automatic Website Checking.**

   A special security dialog box, Microsoft Phishing Filter, appears.

4. **Click OK in the Microsoft Phishing Filter dialog box.**

   The phishing filter is now activated.

The phishing filter alerts you to any Web page link that, well, appears to be fishy. The link may claim that it goes to one Web page when it really goes to another. Or the link may go to a Web site known for doing naughty things with people's personal information. Either way, you get a warning.

If you suspect that a Web page isn't the real deal, click the Tools toolbar button in IE and select Phishing Filter: Check This Website from the menu that appears. After you click the OK button on the Phishing Filter pop-up window, IE does a specific and thorough check of the Web site to figure out whether you're being duped.

Don't lower your guard just because your browser features a phishing filter. The bad guys count on human engineering to make their scams work. No financial institution sends vital information over e-mail. None of them do! When in doubt, phone your banker to confirm the message. Often, the message is bogus. Even if it isn't, it's better to be safe than to be violated by a crook.

Pop-ups

A *pop-up* is a small window featuring graphics and text that suddenly appears when you go onto a Web site. Sounds kind of fun, doesn't it? Like a jack-in-the-box. Pop-ups aren't really nasty programs, but they can be annoying — especially when you're assaulted with several advertising pop-ups all at the same time. How any legitimate marketing person believes that

multiple, annoying pop-up windows can entice anyone to buy a product is beyond us, but it happens — and you can stop it.

You can banish the annoying pop-up window easily in IE. To confirm that IE is blocking pop-ups, follow these steps:

1. **Click the Tools button on the toolbar.**

   The Tools menu appears (pops up, actually).

2. **Select Pop-Up Blocker from the Tools menu.**

   The Pop-Up Blocker submenu appears.

3. **Select Turn On Pop-Up Blocker, if it appears, and then click the Yes button to confirm.**

   If the menu command is Turn Off Pop-Up Blocker, you're already set.

When you set it in action, the pop-up blocker suppresses almost any pop-up display window. So, you miss out on all those ads! Boo-hoo!

When IE blocks a pop-up window, a warning banner appears just above the part of the window in which you view the Web page. The banner reads "Pop-up blocked. To see this pop-up or additional options, click here." If you click the banner, a menu of options appears.

In Firefox, the pop-up blocker is turned on by default. If you want to turn it off, maybe because a site uses pop-ups for legitimate reasons, go into the Options menu, select the Content tab, and uncheck the "Block pop-up windows" box. By clicking the Exceptions button, you can also create a list of sites from which you want to allow pop-ups, so you don't have to keep enabling and disabling the blocker.

Blocking pop-up windows may disable some Web page features, such as a pop-up video window, a menu, or another informative display. In those cases, you can allow pop-ups for that window or Web page: Click the warning banner and choose Temporarily Allow Pop-Ups from the menu that appears.

IE's pop-up blocker can't block certain animated pop-up windows. For example, Flash animations can display pop-up windows, regardless of the pop-up blocker's settings. So, you may still get a few little surprises. (It seems like every time you gain some ground on the bad guys, they think of some new way to assault you.)

Spyware

Spyware, a rather broad category, refers to any program or technique that monitors, or spies on, what you do on the Internet. It's kind of like an electronic cyber-stalker. Some nefarious programmers create spyware so that they can sell the information they obtain about where you go and what you do online to advertisers.

If your PC uses the Windows Vista or XP Service Pack 2 operating system, you have Windows Defender, an excellent defense against spyware. Windows Defender isn't really a single program; it consists of multiple tools that you can use to help protect your computer from a hostile takeover. Specifically, Windows Defender helps protect your PC against nasty programs that attempt to monitor, or even control, your computer's activities.

To Start Windows Defender, open the Control Panel, double-click the Windows Security Center icon, and click the Windows Defender link in the window that appears.

The Windows Defender main window is rather boring — well, unless you have a problem. If you don't have a problem, it just lists a quick summary saying that your PC is running normally. Whew. For the real action, click the Tools button on the toolbar. The various settings and tools that appear can help you not only track down awful programs but also eliminate them.

Trojans

Trojans (as in Trojan horses) are programs that claim to do one thing but really do another. For example, a common Trojan is a special screen saver that does save the screen but also uses your PC to relay pornographic images on the Internet.

Your best defenses against these non-equine intruders are Windows Defender and a firewall. A *firewall* is a device that comes standard on most operating systems and helps close the windows and bar the doors that the bad guys try to use to infect PCs.

Viruses

A *virus* is a nasty program that resides in your PC without your knowledge and infects the computer. The program may be triggered at any time, and then the virus can take over the computer, redirect Internet traffic, use your computer to flood out spam messages, or do any of a number of nasty and inconvenient things.

The Security Center window, accessible from the Control Panel, has a space available for *antivirus software,* which you can use to help keep your PC safe from viruses. You can find a space for antivirus software in the Malware Protection area. But Windows itself doesn't offer anything to fill that space; you must find and use a third-party antivirus program to complete your PC's protection against nasty programs, especially those that infect your PC through e-mail attachments.

Worms

A *worm* is simply a virus that replicates itself. For example, a worm that infects your computer can then send out copies of itself to folks on your e-mail list. As we mention in the preceding section, you can install a reputable antivirus program to let your computer detect and remove worms before they, uh, worm their way into your system and, well, open up a big can of worms. So to speak.

Your Internet service provider (ISP) can really help when it comes to dealing with nasty programs on the Internet. Don't forget to use their assistance, especially if you first try to fix things on your own and it doesn't work.

If you have your own e-mail server, ask your IT advisor to add the proper antivirus filters to ensure that infected e-mails don't even get to your network. (Check out Chapter 1 for information on choosing an IT advisor.)

Backing Up Your PC

Say that your computer does get infected with a virus, which does serious damage. You could lose all your information. Backing up your computer is like flossing your teeth: Everyone knows to do it frequently and thoroughly — but few people do it often, and even fewer people do it properly.

When something goes wrong with your computer, you'll feel a lot better about the situation if you have a backup of every file that's on the PC. You *have* made a recent backup, haven't you?

Don't keep your backup media in the same location as your backup computers. If the location where you keep your computers suffers a physical disaster, such as a fire or tornado, you don't want to lose the backup tapes in the same event. If you keep your backups off-site, you can get back up and running quickly.

Checking out backup options

You can back up your computer in many ways. Here are some of the most popular:

- **External hard drive:** Your PC has its own hard drive, but you can also obtain a second one that attaches itself to your computer via USB. An external hard drive lets you keep a copy of all the files on your computer, and it's small and portable.
- **Online backup:** You can make an online backup by using a commercial Internet backup service. (This kind of backup is a viable solution only if you use a broadband connection to the Internet; backing up a big hard drive takes too long over a pokey 56KB modem.)
- **USB flash drive:** This little guy is a keychain-sized unit that needs no batteries and has no moving parts! Instead, it uses the same method that digital cameras use to store images. Your files are stored on memory cards (either removable cards or built-in memory inside the unit).

- **CD or DVD:** You can keep copies of your files fairly inexpensively by burning them onto disk. This backup method is a good choice if you're backing up only certain files, not the whole PC.

Having a backup plan

Depending on what you use your PC for, how often you back it up varies. The following list gives you a solid example backup plan for someone who uses his or her PC for a small business, but you can choose to back up more or less — whatever makes you most comfortable:

- **The first day of every week:** Make a full backup of your system, including every file on every computer.
- **On subsequent days:** Make an *incremental* backup, which includes only files that have changed since the last full backup.
- **Once a month:** Store one of the full backups for archival reasons. By setting up an archive, if you ever have to resort to restoring your system, you never have to go back further than one month.

Backups don't prevent hacks or intrusions into your computer, but they can help you recover in the case of such events.

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Small Business IT FOR DUMMIES®

Chapter 6

Set up a wireless network

A Reference for the Rest of Us!®

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Small Business IT For Dummies®

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Chapter 6

Wireless Networking

In This Chapter

- Working the wireless way
- Finding a good router
- Figuring out what wireless equipment you need

If you ask around, you'll find that pretty much everyone and their grandmothers are setting up networks for their small businesses. They're connecting their networks without actually physically connecting them at all. In a world without wires, to air is not only human, but also pretty darn cool.

Unless you like having holes drilled in your walls to accommodate cables and tripping on wires littering the floor, you may want to go with a wireless network. It spares employees the need to navigate over ugly blue Ethernet cables, and it turns your whole office into a giant Internet-ready hotspot.

Although going wireless typically makes installing a network much easier, wireless networks do have some issues of their own. Instead of formulating a battle plan for dealing with a mess of wires, you need to think about things such as signal barriers (for example, concrete walls) and potential sources of interference (such as cordless phones). Believe it or not, even the office microwave oven (you know, the one that nobody ever wants to clean?) can get in on the act and cook up an issue or two!

So, you need a plan. As luck would have it, we designed this chapter to help you through all the dirty details of planning for and then setting up a wireless network of your very own. Take some time to get your ducks in a row before you start.

Your Office: Unplugged

If you're thinking about setting up a wireless office network, you first need to figure out what you hope to accomplish.

The decision to set up a network almost always has something to do with sharing. Don't worry; we're not talking about sharing the leftover desserts from the stakeholders' meeting. We mean sharing computer stuff — taking a resource and making it available to more than one user simultaneously.

In fact, whether you're talking about a wired network or a wireless one, most small businesses set up a network so that they can share the following:

- **Internet access:** If you want to share Internet access, especially a high-speed connection, you may want to set up a wireless network. Cable or DSL connections have plenty of bandwidth (meaning they're fast), allowing more than one user to surf at the same time without issue.
- **Printers:** Buying a printer to attach to each PC in your office can get pricey in a hurry. Why buy four printers when you really need only one? After you share a printer on your network, any user can print his or her files without issue.
- **Files:** Back in the Pre-Cambrian period, people used to exchange files by using flat plastic squares known as floppy disks. With a network, users can exchange or share files from any PC.

Working without Wires

Switching to wireless is just as great as it sounds. Your computer and its peripherals transmit signals to each other. They communicate over a wireless network, so you don't have to connect them with cords in order to make them communicate with each other.

Benefiting from cutting the cords

If you think that true freedom is the first time you move out of your parents' house and get your own place, you're wrong. True freedom is going wireless. Here are a few benefits of wireless technology:

- **Less hassle:** By adding a wireless network to your business, you can share files, printers, your Internet connection, and whatever else you need to share, without the hassle of running wires and keeping track of what goes where. If you want to move a PC from one place to another (for example, from your desk to a meeting room), you can without having to worry about whether a network outlet is nearby.
- **No tangles:** You're probably sick of the wiry clutter at your desk. Cutting the wires to your keyboard and mouse sounds like a sure way to kill your computer, but you may find wireless peripherals so much more convenient than their wired counterparts — especially if your desk is such a mess that you haven't seen the top of it in years.
- **Easy expansion:** Adding computers to a wired network means drilling more holes and running more cables. In contrast, you can add wireless-enabled computers to a wireless network instantly. And even if a new computer doesn't have built-in wireless capability, you can install a wireless network adapter card — no fuss, no muss.

If the preceding list doesn't have you thinking about the possibilities for a wireless business, nothing will — but even this list only scratches the surface.

Overcoming obstacles

When all is said and done, the benefits of going wireless are hard to beat. But potential issues do exist. In particular, you need to think about the outer limits of your network and possible obstacles in your path.

In a perfect world, you wouldn't need to worry about the maximum distance your wireless network could span. In the real

world, however, wireless networks are subject to range limitations because of the technical details of the radio frequencies involved (but we spare you the physics lesson). You just need to figure out whether your wireless network can work from one end of your office to the other if you need it to.

As a general rule, the closer your PCs that have wireless network adapters are to your wireless *router* or *access point* (the devices that act like wireless hubs), the better they perform. (We talk about routers and access points in the section "Routing Around for Routers," later in this chapter).

Wireless networks tend to have an effective indoor range of anywhere between 100 and 150 feet, depending on the wireless standard you use. Keep in mind that this range represents the maximum distance between any single PC and an access point. If you need to span much longer distances, you probably need to add a wireless range extender to your network.

The biggest factor influencing your network's potential range is the wireless standard you choose. Wireless networks fall into the Institute of Electronic and Electrical Engineers (IEEE) 802.11 standard. So, you find wireless networking equipment designated as 802.11-something. That something will be the letter *a, b,* or *g*. The indoor wireless signals range anywhere from about 100 feet (802.11a) to about 150 feet (802.11b and g).

Although the ranges associated with a wireless networking standard are, well, standard, you have other factors to consider. In some cases, a wireless PC that uses an 802.11b device has no trouble contacting an access point 170 feet away. At the same time, another 802.11b device may not be able to connect from only 90 feet away. If you ask, "What gives?" right now, that's a great question with excellent timing.

The answer is twofold. First, not all wireless networking equipment is created equal; some devices are more powerful, and others are better engineered. Second, you have to consider the bane of wireless networks — the evil duo of obstacles and interference, which we talk about in the following section.

Checking for obstacles and interference

If you take away potential obstacles and sources of interference, most wireless devices can reach distances of almost double what you can expect indoors. Unfortunately, a smorgasbord of both obstacles and interference awaits you in most places. So, you need to work around these issues, rather than through them. Your employees probably wouldn't be happy to find exterior walls missing because of your wireless network problems.

When it comes to a wireless signal's range, the most common and problematic obstacles are just about anything heavy and solid. For example, you can't easily send radio waves through a solid concrete wall. Wood, on the other hand, doesn't cause as much of a problem because it's porous. Your wireless network most often needs to contend with these obstacles:

- **Solid concrete and brick walls:** Anything that's very heavy and solid presents a hearty barrier to wireless network signals. Because you can't usually knock those obstacles down (at least, not without a great deal of effort and a sledge hammer), you should concentrate on working around them.
- **Anything made of steel:** Expect issues anytime you position wireless networking equipment near a lot of metal — such as a furnace, steel beams, and so forth.
- **Windows:** We don't mean the operating system but the ones that let the sun in and keep the rain out. Glass does present a minor obstacle but usually isn't a very big issue.

A trusted IT advisor should be able to make recommendations about wireless-device placement that optimizes range while minimizing equipment costs.

After you or your IT advisor finishes figuring out a way through the maze of obstacles, you need to sort sources of interference. Like any electrical device, wireless networks are susceptible to electromagnetic interference — particularly anything that works in the same frequency range. For example, here are some of the common culprits:

- **Cordless phones:** In particular, 2.4-GHz cordless phones, which work in the same frequency range as both 802.11b and 802.11g devices. If you plan to install a wireless network based on either of these standards, you might want to consider using a 5.8-GHz cordless phone model.
- **Microwave ovens:** You might be surprised, but most microwaves work in the 2.4-GHz range, as well. So, you might run into connectivity issues if you're trying to surf and nuke at the same time. Keeping your laptop or PDA away from your running microwave solves the issue.
- **Other 2.4-GHz devices:** A host of consumer electronics devices, ranging from wireless speakers to wireless cable TV transmitters, use the 2.4-GHz frequency range. If you use these types of devices regularly, you can expect to run into interference issues.

Most wireless networking equipment is designed to contend with interference issues, so you typically have to deal with only a short loss of connectivity or degraded signal. If you want to gain better network performance, try to eliminate these sources of interference.

Routing Around for Routers

In a nutshell, the job of the *wireless router* is to act as an access point for wireless client systems on your network while at the same time functioning as the intermediary between your office network and the Internet. A wireless router typically sets you back anywhere from $30 to $200 or more.

Before we get too deep into all this router business, you should know that you don't necessarily need a wireless router. If you already have a wired broadband router in your possession, you can add a plain old wired access point to your network. However, you pay almost the same amount for a wireless router that you do for an access point. Because of the similarity in price, picking up a wireless router usually makes more sense. A wireless router does more stuff than an access point, and dealing with only one device helps reduce clutter.

Keeping your options open

After you get the wireless bug, you may be tempted to get rid of every cord. Just remember that you probably want to keep your options open. You might, for example, want to make sure that you have at least one wired phone in your office because cordless phones typically don't work if you experience a power failure — unlike wired phones, which generally don't need a separate power supply. (Even though a cordless phone's handset runs on rechargeable batteries, the base station that it uses to connect to the phone line must be plugged into a working power outlet to function.)

And just because some of your old, existing equipment is wired doesn't mean that it no longer serves any purpose. You don't need to go throwing out perfectly good equipment and wasting precious money on equipment that you don't really need.

When you're out shopping for a wireless router, make sure that you have a router in your hands, rather than an access point. Wireless routers and access points from the same vendor often look deceivingly similar.

The following sections give you a lot of information, but we don't want you to lose sleep worrying about what wireless router to choose. Any new wireless router that you purchase almost certainly includes all the features we talk about, along with another million more. When in doubt, the back of the product package (or the vendor's Web site) can give you the answers you seek. Go forth and route!

Figuring out router functions

So, what exactly does a wireless router do? A little bit of everything, of course! The router's primary job is to handle requests bound for the Internet on behalf of computers on your network. In other words, servers on the Internet think requests have originated from your router and know nothing about your network. The wireless part acts as a hub for your wireless systems, allowing them to communicate with each other and ultimately access the Internet.

Beyond these critical functions, wireless routers typically include a whole range of standard and value-added features. You can typically find these key features included on any wireless router:

- **A firewall:** You can safely bet that any router you pick up includes a built-in firewall to keep the bad guys out of your office network. However, not all firewalls are created equal. If possible, look for a model that includes a stateful firewall (a firewall that tracks the state of network connections running across it) because it offers a higher degree of protection.
- **A built-in DHCP server:** A built-in DHCP (dynamic host configuration protocol) server component is responsible for allocating IP addresses to clients on your network. So, your network administrator doesn't have to keep track of a bunch of IP addresses, and you can add a new computer to your network in a snap.
- **Web-based management:** Instead of having to install a separate management program, you usually configure a new router via a Web browser.

Going a step further, you may want to take a closer look at some of the cool bells and whistles included with certain wireless routers:

- **Integrated Ethernet ports:** If your office network will ultimately include both wired and wireless computers, look for a wireless router that offers a built-in four-port Ethernet switch. This feature saves you the trouble of needing to purchase a separate hub or switch for wired systems.
- **Built-in print server:** Newer wireless router models often include a built-in print server component that allows you to plug your printer into a USB port on the router. This easy and effective option makes your printer part of your wireless network.
- **Detachable antennae:** Just in case, look for a model that includes detachable antennae. Most wireless routers include antennae that you attach to the unit by using reverse SMA plugs. If you ever need to add larger antennae to deal with distance issues, you can simply unscrew the old ones and insert the new.

- **Sleek design:** It doesn't really matter what your wireless router looks like, but a sharp design is always cool and makes for a better conversation piece. You do want to impress clients, don't you?

Keeping router security in mind

Wireless networks are awfully convenient because you can simply fire up your PC anywhere within range and connect. This convenience has its dark side, too. As long as your wireless network is working, a neighbor or a stranger driving by can conveniently try to connect to your business network.

The fact that your wireless network doesn't require a computer to use a physical network cable to connect means that someone you don't want on your network can very easily gain access to it.

But never fear! Your wireless network isn't at the mercy of every Jane Doe with a wireless-enabled PC. Just be sure that the wireless router you choose includes support for each of the following features so that you can keep intruders at bay:

- **MAC security:** MAC is short for Media Access Control. Almost all wireless routers include this feature, which basically allows you to control exactly which wireless systems can connect to your network. MAC security takes advantage of the fact that every network adapter card has a MAC (hardware) address that uniquely identifies it.
- **WEP support:** Short for Wired Equivalent Privacy. Almost all wireless devices support this older wireless encryption protocol. We'd be surprised if you could find a wireless router that doesn't support WEP.
- **WPA support:** Short for Wi-Fi Protected Access. WPA is a newer and much more secure wireless encryption protocol than WEP. You may have to search to find devices that support WPA, but you definitely want it. If you find a wireless router that lacks WPA support, you may be able to add it via a firmware upgrade.

- **Ability to upgrade firmware:** No excuses here — you definitely want a wireless router that supports firmware upgrades. A router's firmware is like its operating system. Upgrading firmware typically adds support for new features (such as WPA), patches any security holes that the manufacturer may have discovered, and ultimately helps protect your investment in the long term. If you don't see support for firmware upgrades listed on the router's packaging, check for details on the vendor's Web site.

Creating a Wireless Shopping List

So, what kind of equipment do you need for a wireless network? Not too much:

- **One wireless router or a wireless access point:** We strongly suggest the wireless router because it makes your workspace less cluttered and easier to manage in the long run, but if you want to continue using a router that you already have, you can get a wireless access point.
- **One wireless network adapter for every computer on your wireless network:** You probably need one PC card (or mini-PCI card) for each notebook computer and either a PCI or USB wireless adapter for each desktop system.

You can save time and money by buying a notebook PC that has built-in Wi-Fi capability, such as Intel Centrino Mobile Technology, which makes connecting to wireless networks easier, improves the wireless connection's performance and range, and helps conserve battery power.

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Small Business IT For Dummies®

Chapter 7

Talk over the Internet with VoIP

A Reference for the Rest of Us!®

FREE eTips at dummies.com®

Timothy V. Kelly
Heather Ball

Small Business IT For Dummies®

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Chapter 7

Talkin' About (And with) VoIP

In This Chapter

- Reaching out with VoIP
- Getting your VoIP gear together
- Considering VoIP's pros and cons

Although VoIP doesn't stand for "very organized, important person," it kind of makes you feel that way because it's such an efficient, high-tech way of looking at your standard office telephone. Plus, we like it because VoIP (pronounced *voyp*) is really fun to say.

Checking Out VoIP

VoIP actually stands for Voice over Internet Protocol. (A *protocol* is a set of rules that allows devices to exchange electronic information in an orderly way, which sounds very official, we know.) So really, VoIP is a technology that sends your voice over the Internet, so you can make calls over a broadband Internet connection, rather than a regular (or *analog*) phone line. You might be a little wary of VoIP technology at first, but rest assured, VoIP feels familiar because you use it like a regular phone.

The person you're calling probably can't tell that you're using VoIP telephone service, rather than analog. Both sound the same.

In the beginning, there was POTS

Before digital networking took off, everyone had to use the one and only *POTS,* which stands for plain old telephone service (honestly, it does). POTS runs over a network called the *PSTN,* or public switched telephone network. These POTS telephone systems use the tried-and-true method of telephone service known as circuit-switched. For customers, the costs related to the regulated circuit-switched PSTN remain much higher than they need to be. Individual consumers, as well as companies that must rely on POTS on a daily basis, know what the POTS way of telephony means to their bottom line. But you can use VoIP, greatly reducing or eliminating your POTS-related costs.

Knowing How VoIP Works

So, how the heck do phone calls travel over the Internet, anyway? VoIP converts the sound of your voice into a digital signal that moves over the Internet at lightning speed. Just before the signal gets to its destination (that is, the phone of the person you're calling), it's converted back into sound, so it comes out just like a regular phone call.

VoIP technology allows traditional telephony services to work over computer networks by using packet-switched protocols. *Packet-switched VoIP* puts voice signals into packets, like electronic envelopes. Along with the voice signals, the VoIP packet includes both the caller's and the receiver's network addresses. VoIP packets can traverse any VoIP-compatible network. Because VoIP uses packets, it can carry much more information over the network to support and enhance your communication needs when compared to traditional telephony methods.

If you have broadband access and a high-performance processor, such as a dual-core processor (for example, the Intel Core 2 Duo), you can still surf the Internet, respond to e-mail, and all that stuff while you talk over VoIP. It doesn't interrupt your Internet usage.

Network gurus refer to the process of packetizing your voice telephone call as *encapsulation.* A good analogy for this fancy techno-term is putting a letter into an envelope for mailing. The difference is that these encapsulated packets contain the content of the telephone conversation in digitized form.

Who (and where) you gonna call?

Where and whom you call depends on the VoIP service you decide to use. With some companies, you can call only people who use the same VoIP company that you do. But other companies let you call pretty much anyone and anywhere: We're talking any person who has a regular land-line telephone, which includes local, long-distance, and international calls. You can even call someone on his or her cellphone.

If your VoIP provider enables you to call anyone (not just other people using the service), the person you're calling doesn't need to be signed up for VoIP service or have any particular equipment to receive your call. His phone rings (or plays a ringtone of "Killing Me Softly," whatever he's into), he answers it, and you talk. Pretty simple.

Having everything you need

Believe it or not (actually, believe it), you don't need to buy a whole lot of fancy equipment and spend a bunch of money to get started on VoIP. Here's all you need:

- **Broadband Internet connection:** Basically, *broadband* is just another way of saying high speed. You need a fast connection so that it can convert and reconvert the digital signals. You have two options for a broadband connection:
- **Cable:** High-speed Internet access that comes over your cable TV network. Your local cable company probably offers this service and can hook you up.
- **DSL (digital subscriber line):** This type of Internet connection comes through your phone line, but it's way faster than dial-up — and you can talk on the phone and surf the Web at the same time.

Unfortunately, if you're using dial-up it just won't do for VoIP.

You can get some seriously speedy Internet connections nowadays, depending on what you're willing to pay. (Usually, the faster the connection, the more expensive the service.) You can get cable Internet service that has speeds of anywhere between 256 Kbps (kilobits per second) to 25 Mbps (megabits per second).

- **Computer:** Depending on your VoIP service provider, you might have to make calls directly from your computer. This option requires that you have a microphone and speakers (or a headset), and you need to download the VoIP software.

  If you want to be able to multi-task while using VoIP, you need a computer powered by a dual-core processor, such as the Intel Core 2 Duo.

  or

- **Special VoIP phone:** Some services let you use a specially enabled VoIP phone that you plug into your Internet connection. It usually looks like a regular phone, and you dial it the same way, too.

  or

- **VoIP adapter:** If you don't want to get a special phone, you can continue to use your regular phone, as long as you buy a special adapter.

VoIP works by taking traditional voice signals and converting them to a form that can be easily transmitted over the Internet. Thus, the heart of VoIP is the same as traditional data networking with computers. Special VoIP-enabled phones handle the voice-to-data conversion well, but don't be misled — not everyone has to use VoIP-enabled phones.

The best providers implement VoIP in a manner that protects your investment in existing telephone equipment, even if you have analog telephone stations.

Weighing VoIP Pros and Cons

VoIP technology isn't perfect, but it's still pretty darn great. The following sections give you an idea of the advantages and disadvantages of switching to VoIP services, so you can figure out whether they make sense for your business.

Seeing the VoIP advantages

We can think of some good reasons to VoIP someone instead of calling them. Here are a few:

- **Excellent price:** Although you might pay hundreds of dollars a month for regular phone service, some VoIP service providers offer rates as low as one cent per minute on overseas calls. You can also check out special packages for small business that give you unlimited calling for around $50 per month.
- **Portability:** If you have access to a wireless Internet connection, wherever you are, you can use your VoIP phone to make calls.
- **Useful features:** VoIP offers all the same features that traditional phone service does, such as call conferencing, caller ID, call waiting, and voicemail. You do have to pay extra for these features.

Listing VoIP disadvantages

Before you run out and eschew analog service forever, hold the phone (so to speak). Keep the following considerations in mind:

- **No 411:** You can't always get directory assistance through VoIP providers.
- **No power, no VoIP:** Although you can usually use your analog phone service in an electrical outage, VoIP service could go down at such times.
- **No 911 service:** In case of an emergency, you might not be able to connect to 911 emergency services through certain VoIP providers.

Technology changes in the blink of an eye. Always check with VoIP providers to compare their services and rates so that you can find out what the advantages and limitations of any one company might be.

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Small Business IT For Dummies®

Chapter 8

Hit the Wi-Fi hotspots

A Reference for the Rest of Us!®

FREE eTips at dummies.com®

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Heather Ball

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Chapter 8

Hitting the Hotspots

In This Chapter

- Working from almost anywhere
- Finding hotspots
- Using Wi-Fi detectors
- Protecting your information on an open network
- Taking it with you: More mobile Internet options

You don't have to stay out dancing past 2 a.m. to enjoy the kinds of hotspots we discuss in this chapter. We don't mean the coolest clubs or the fanciest restaurants, we're talking about using the Internet outside of the confines of your office. So, grab your notebook computer, head out to your local coffee shop, and finish that report you're working on. Then, you can go out dancing.

Working from a Wi-Fi Hotspot

If you think that you're tethered to your office Internet connection and have no way to escape, think again. Anyone with a Wi-Fi-enabled notebook (*Wi-Fi* stands for Wireless Fidelity) computer can go online in many places.

What exactly do we mean by hotspot? A *hotspot* is basically a public wireless network, a location from which you can access high-speed Internet service without plugging into a modem.

Nowadays, pretty much any notebook computer you buy comes Wi-Fi enabled. But if you're working with an earlier model that doesn't have this feature, you can buy a Wi-Fi adapter.

Hotspots are great because

- **You can go online in many unexpected places.** Libraries, coffee shops, restaurants, bars, public outdoor areas, and airports are just some of the places where you can find a hotspot. For example, most Starbucks and even some McDonalds offer Wi-Fi access to their customers.
- **The number of hotspots is growing every day.** More and more of these Wi-Fi zones are popping up all the time, which means Internet users on the go can choose from a growing number of convenient locations.
- **Some hotspots are free.** Although some hotspots charge a per-hour fee or require a subscription, you can access some of them free of charge.

Spotting a Hotspot

Because hotspots have limited broadcast ranges, you can't just park anywhere and expect to connect to the Internet via Wi-Fi. You have to be in certain designated locations. You might, however, be surprised at the number of places that make wireless Internet access available to you. You just need to find those places, especially when you're traveling through unfamiliar areas.

Getting directions to a hotspot

When it comes to finding hotspots, you have several online choices. Online directories make perfect sense because the number of hotspots in the U.S., Canada, and around the world is growing so fast that a printed directory would be obsolete before it ever made it to the shelves. A few of the available online directories are

- **JiWire:** The JiWire search engine and database (at `www.jiwire.com`) powers several directories besides its own. The best among them are
  - **Wi-Fi Zone Finder:** Not long ago, the Wi-Fi Alliance partnered with JiWire to provide a directory of hotspots that are Wi-Fi Certified (meaning that because all the equipment used by the hotspot is Wi-Fi Certified, your Wi-Fi Certified equipment is guaranteed to be compatible). Find it at `http://wi-fi.jiwire.com`.

- ***PC World* Hotspot Finder:** Along with the hotspot locator powered by JiWire, PC World lists links to articles relevant to Wi-Fi users. Topics covered include buying guides and how-to articles. You can find it at `http://pcworld.jiwire.com`.
- ***USA Today* Tech wireless center:** This center includes links to current news and articles pertaining specifically to wireless technology, along with the JiWire hotspot locator. Head to `http://usatoday.jiwire.com`.

In true geek fashion, the word *JiWire* is a kind of acronym invented by the owners of this Web business. They couldn't find a verb meaning "to connect devices wirelessly," so they invented this one, which means "joining invisible wires."

JiWire is a great online directory because it's more than just a directory service. It offers a ton of advice and articles, ranging from new product reviews to a Wi-Fi user guide and discussion forum.

- **WiFi411:** This site doesn't offer as many services as JiWire, but it includes a lot of useful information, such as the number of access points and the wireless standard that each hotspot uses. Go to `www.wifi411.com`.
- **Wi-FiHotSpotList.com:** Billing itself as The Definitive Wi-Fi HotSpot Directory, this site is an offshoot of Wi-Fi Planet. We don't know whether it's the definitive directory, but it provides a wealth of wireless information tucked within the pages of `http://wi-fiplanet.com`. To find a hotspot, just click the HotSpots tab, enter the city and state where you want to find the hotspot in the appropriate fields on the page that appears, and click the Find a Hotspot button.
- **LS LocalSearch.com:** Although this site isn't technically a directory, you can use it as a traveling tool. This site, at `www.localsearch.com`, focuses on finding highlights and attractions, including hotspots, in various cities.
- **WiFinder:** This site provides the locations of over 38,000 (and growing) hotspots all over the world. Just go to `www.wifinder.com`, click the link for your U.S. state or your country, and you're off.

- **The Wi-Fi-FreeSpot Directory:** You can find more free access hotspots than you can shake a stick at, and this directory (`www.wififreespot.com`) focuses exclusively on them. It also provides some information and guidelines about etiquette and use of these free hotspots.

Using online directories

Most online hotspot directories use filters so that, by setting some parameter, you can narrow your search in ways that will return results that fit your particular situation. The amount of filtering available varies from one directory to another, but in most cases, the better you get at using these tools, the better your search results.

For example, at JiWire, the advanced search feature includes a filter that searches for cafes and campgrounds, as well as RV parks and travel centers. By specifying the type of business or venue you're searching for, you can narrow your search so that the results correspond nicely with your needs.

Free Wi-Fi? Sometimes . . .

To connect to some hotspots, you need to pay. Some charge you a per-hour fee, and others offer a subscription service that gives you a certain number of online hours per month or even unlimited access for a year. These fees can be pretty steep, so before signing up for a Wi-Fi subscription, make sure you're going to use it often enough to get your money's worth.

Other hotspots are what we call sort of free. The establishment doesn't charge you to connect to its wireless network, but you can't just waltz in, sit down, and fire up your e-mail. If it's a cafe, for example, you need to at least order a coffee or a snack to use the service. So, although you don't have to pay for the Internet usage, you may have to shell out for food or drinks.

Some hotpots are completely free. You can find these hotspots in places such as libraries and community centers. When you connect, you'll probably be asked to agree to a set of conditions (usually about using the network appropriately, meaning not surfing illegal sites or doing anything unethical online). If you agree, you're all set. The only drawback is that the speed of these connections usually isn't as fast as the paid hotspots — but if you're in no hurry, no problem.

As good as these directories are, they're definitely not perfect. Because of the number of hotspots opening up each day, you probably can't find them all listed in one directory. Online directories also rely on information provided to them by either the proprietors or users of the business or venue that makes the hotspot available. Most directories take great pains to verify that the information they provide is accurate, but if a coffeehouse goes out of business, for example, it may not be removed from a directory for quite some time.

Online hotspot directories are always on the lookout for new hotspots to add to their sites, and they often ask users to submit hotspots locations that the directories don't yet list. If you discover one, why not share the inside information with other hotspot users?

Using Wireless Network Detectors

Whether or not you have access to an online hotspot directory, wouldn't you like to be able to detect the presence of a wireless signal? You might, for example, want to connect to a particular hotspot, but you don't know whether you're too far from the signal source to make the connection. You could get out your notebook computer, boot it up, and find out whether you have a good signal at your current location — but you can use a Wi-Fi network detector much more easily.

Network detectors, sometimes referred to as Wi-Fi *sniffers,* are usually fairly small units — some can fit on a key chain. Before you rush out to buy one, know that owning one of these devices may put you in that group commonly referred to as geeks. (We recommend you put a piece of duct tape over the Star Trek insignia on your shirt when you use one so that some doubt about your geek status remains.)

Shopping for a Wi-Fi detector

Several wireless-product manufacturers include one or more Wi-Fi detectors in their line of offerings. But you don't really have a wide choice of products. In some ways, a small selection is good because you don't have to choose from a confusing

array of devices, but in other ways, it's not so good because fewer manufacturers means less competition-driven innovation.

When you're shopping for a wireless detector, consider these features:

- **Accuracy of network detection:** Not all detectors can detect the presence of a wireless network with a high level of accuracy. Some inaccurate detectors indicate the presence of a network when, in fact, you're near only a microwave oven or cordless phone. In other cases, the detector fails to recognize the existence of one or more networks in a given area.
- **Signal strength indication:** Most detectors offer only a few lights to indicate relative signal strength, but some of them use a bar graph displayed on an LCD screen.
- **Additional features:** The two features in the preceding bullets can give you a good idea about the presence and relative strength of a signal, but consider these features, as well:
  - **SSID (Service Set Identifier):** The SSID is simply the name of the network. If you're trying to connect with the *For Dummies* hotspot while you're in an adjacent parking lot, you want to know whether your detector is picking up the *For Dummies* signal or a signal from a nearby home or business wireless network.
  - **Security status:** Because you're looking for open networks, you probably want to know whether detected networks are open or secure. By the way, just because a network is open doesn't mean the owner wants the general public using it.
  - **Channel:** This feature tells you how much interference you might encounter when you connect with a nearby hotspot. If several other networks are in the area and on the same channel, you might have a bit more interference than if the nearby networks' channels were spaced apart.

Sniffing around for signals

To use a wireless network detector, you need to master the art of pushing buttons.

If you have a key-chain detector, you just push the button. The detector's LEDs light up if it detects a hotspot or wireless network, indicating relative signal strength. By turning a total of 360 degrees, 90 degrees at a time, you can get a good idea of where the detected signal is coming from. Just don't turn too fast, or you might get dizzy.

With each push of the button, these devices detect a single network. If you're in an area that has more than one hotspot, you might have to push the button several times — and face a different direction with each push of the button — to find the strongest signal. You might think that the detector would find the strongest signal first, but for some reason, that's not always the case.

The detector-adapter combo units work in a similar fashion, but because they detect all the available networks with one push of the button, you need to push buttons only when you make each 90-degree turn.

Hotspot Security

Unfortunately, hotspots do have a few problems — namely, security issues. So much information is whizzing through the air around you, and a super-savvy computer user could find a way to capture some of your information or even find his or her way onto your PC. When you connect your computer to a hotspot, which is a public wireless network, other network users could see valuable information, such as

- The Web sites that you visit
- The usernames and passwords that you use
- Any other information on your computer

By taking a few simple precautions, you can keep your PC safe while you use a hotspot:

- Don't visit any private Web sites or access any private information when you're using a hotspot. Do you really have to do your online banking at the coffee house?
- If you don't have to use the Internet for a few minutes, just disable your wireless connection. Disabling your wireless connection completely closes off your PC from sending or receiving signals.
- Use a VPN (virtual private network). You create a VPN based on a public network, and the VPN encrypts your data and information to keep it safe from prying computers. Most new operating systems, such as Windows Vista, come with this feature built in. To configure a VPN connection, choose Control Panel➪Network Setup Wizard. This application walks you through the process.
- Look out for spies. You're out in public, not the privacy and security of your office. If you're not careful while you're working from a hotspot, anybody could look over your shoulder to see what you do, what passwords you type, and what Web sites you visit. Be alert!

No Hotspot? No Problem!

If you want a wireless Internet connection but aren't within range of a Wi-Fi hotspot, you can still go online via one of the methods we describe in this section.

Aircards

You can use an *aircard,* which is a cool little device that you connect to your notebook computer (through the USB port, in many cases) to get high-speed wireless Internet without a hotspot or telephone line.

Aircards (also known as *mobile broadband cards* and *connect cards*) use the same signals as cellphones, and you can usually get one through your cellphone service provider. To use an aircard, you have to pay for both the card and a service plan,

just like you do for your cellphone. Do your homework, choose the service plan that's right for you, and then buy the aircard that works with that service.

Sometimes, cellular service providers even offer special pricing on the aircard because they know that after they hook you, you're probably going to spend a lot of money on your monthly service plan.

Portable Internet

If you find yourself hotspot-less, you can use a portable Internet service to take your Internet connection with you.

A *portable Internet* service uses a small wireless modem that you can plug in any power outlet. Your notebook computer connects wirelessly to the modem, and *voilà* — you're online.

If you use this type of connection, you usually pay for the modem and then pay an additional monthly fee that gives you unlimited hours of Internet access. Connection speeds are a lot faster than dial-up, but they're not always as fast as regular high-speed Internet.

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Chapter 9

Set up your Web site!

A Reference for the Rest of Us!®

FREE eTips at dummies.com®

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Chapter 9

Setting Up a Web Site

In This Chapter

- Knowing what makes a good Web site
- Making your Web site sticky
- Checking out Web hosting and design options
- Creating your site's index
- Thinking about Web site names
- Testing your site before you go live

So, you're ready to create — or redesign — your Web site for success. Many business owners err by viewing their Web site as a separate project, independent of marketing and sales, even when they have an online store. In reality, site design is intricately intertwined with every marketing decision you make.

In this chapter, we explain the critical importance of selecting the right providers to bring your business vision to cyberspace. We talk about the characteristics of a site that attracts visitors and keeps them with stickiness and how to select a good domain name. We also introduce the three characteristics of successful Web design.

Knowing How a Great Web Site Can Benefit Your Business

All businesses have to face it: The world, particularly the business world, is online to stay. Having a good-looking, informative, user-friendly Web site is now one of the best marketing

tools a business owner can have. A great Web site benefits your business in a number of ways:

- **Accessibility:** Anyone with a computer and Internet access can find your Web site and get more information about your business. It's that easy.
- **Credibility:** The Web site may be the first thing a potential customer looks at to find out about your business, product, or service. If the site is well designed and has good information, you make a positive first impression and come off as professional and trustworthy.
- **Financial savings:** Instead of putting a lot of cash into physical space of the business and staff to answer questions, you can make your Web site actually work for you to help sell products and allow customers to self-serve.

Setting Goals for Your Web Site

After you decide that a Web site could really benefit your business, you need to determine what your Web site must accomplish and how to make it work for you.

Business Web sites generally have one of the goals that we discuss in the following sections as a primary goal — although large, sophisticated sites now address several categories.

Don't depend on your Web site being all things for all people, especially not right away. Unless you have a large enough budget and staff to handle the demands of marketing to multiple audiences, select only one or two of these goals. You can add other goals later after benefits from your site start flowing to your bottom line.

No matter what the primary goal of your business's Web site, always make sure that you provide easily accessible contact information. Make it quick and convenient for visitors to go beyond the site and ask questions about your business or get help with services.

Informing customers

Brochureware, or business card sites, are an inexpensive way to tell customers what they need to know about your business. These sites, which contain no more than the minimal information included in a small tri-fold brochure, might be all the Web presence a small business needs. For example, your business might need only a two-page interior design site on which the main page briefly describes services and links to a second page with contact information and an inquiry form.

Of course, you can create an information-based site that's much more extensive. Medical, technical support, or news sites may contain hundreds or thousands of pages in a searchable, linkable, static format.

Branding your company or product

Some Web sites primarily serve a branding function. Branding sites may include games, coupons, entertainment, feedback sections, interactive functions, and corporate information, but they generally don't sell the product online. They generate leads or sales only indirectly. For instance, a soft drink company's Web site may allow consumers to buy a key chain or other branded paraphernalia on their site, but consumers can't actually buy the drink there.

Generating leads or qualifying prospects

Some sites, especially those for services and expensive products, allow potential customers to research their offerings, but customers must call, e-mail, or visit the brick-and-mortar establishment to close a sale. For instance, a car company's Web site might show photographs, provide technical specifications and options, and let site visitors create a virtual customized model of a vehicle they're interested in buying.

These Web site features generate the customer's interest and give him or her concrete information about the product so that he or she feels informed and motivated enough to go out and make the purchase.

Generating revenue through sales

Transaction sites, which may be the most familiar type of site, are used to sell goods or services online. Travel reservations, magazine subscriptions, organizational memberships, B2B (business to business) sales, and even donations fall into this category, as do retail sites from large corporations to the smallest home-based micro-store. Good transaction sites also take advantage of the Web to gather information about customer demographics, needs, and preferences, as well as to test response to special offers.

Providing self-service features to customers

Beyond selling goods on your Web site, you might also provide customers with some interactive features regarding the sale. For example, you can ask customers to create individual logins to their accounts, which allow them to track their product shipments online, view their order history, and provide you with feedback on their experience with your Web site and business.

You may even want to consider software that enables you to share documents or to collaborate on projects with your clients through your site.

Generating revenue through advertising

A business model that calls for generating revenue by selling ads operates in a fundamentally different marketing mode. When you sell advertising on your Web site, the primary product is the audience you deliver — either the number of

eyeballs that view an ad or the number of click-throughs to an advertiser's site.

You can also generate advertising revenue on your site through an *affiliate program,* which is an online referral system that offers a commission to the source of the lead. When prospective customers click a link or close a sale, the originating site receives a payment.

Finding business leads

Sites in this category attract investors, identify strategic business partners, locate suppliers, recruit dealers, or solicit franchisees. The audience for these sites is quite different from the audience for a site targeted at customers or clients.

This type of Web site might include stock information, your company's corporate reports, and information about key figures in the company's management.

Getting Your Web Site on People's Radar (and Keeping It There)

A business site has to succeed on multiple levels to pull a prospect or visitor into your marketing orbit. Without initial curb appeal, your site doesn't have a chance to establish itself in visitors' minds. Without strong content, visitors don't have a reason to stay on your site long enough to find out what you have to offer and how wonderful you are. And without a reason to return, visitors might never establish enough confidence to purchase your goods or services.

Catching the visitor's attention

You have only four seconds — that's right, four seconds — to make a first impression! That's not enough time for a visitor to read your content. It's time enough only for our emotion-based lizard brains to react to color, layout, design, navigation

(maybe), and perhaps a headline. If you haven't caught people in your cyber-net by then, they're gone, probably never to return.

Fonts, images, activities, everything on the site must appeal to the target audience that you're trying to reach. You wouldn't put bright colors on a site selling urns for pet ashes or pastels on a site aimed at teenagers. A high-tech site in silver and black has a very different look and feel than one selling country decor with gingham and duckies. A site selling high-priced goods needs a lot of white (empty) space to look rich; a discount site does well with crowded images.

Getting visitors to stick around

Stickiness is the technical term (no, really!) for keeping people on a Web site. If your average viewers visit fewer than two pages of your site or stay less than 30 seconds, most of them see only your home page and flee! You need more cyber-glue. Ideally, you want the average visitor to stick with the site for a minimum of three pages and at least a few minutes. Otherwise, they haven't spent enough time to figure out what you have to offer.

Lay down a sticky trail with content, calls to action, actions to do, media to download, and interaction with site elements. Every action users take, every click they make, binds them kinesthetically to your site.

Research shows that many people don't buy on the first visit to a site. Some use the Web simply for research before making a purchase in a brick-and-mortar store. Others research multiple sites for comparison shopping and return to a site only if they have a reason. Spending the time and money on a good Web site is well worth it, if it gets visitors to come back and (hopefully!) buy.

Finding the Host with the Most

One of the many decisions that you make when you're starting a Web site is where to host it. You might be wondering what a host does and why you even need one. A host site provides a place (a *server*) for your Web site and all the files that make up

your site to reside. That host provides an address so that others can access your site by using the Internet.

In the upcoming sections, you can discover the differences between a host and an Internet service provider (ISP), the different types of hosts and what they have to offer, and the decisions you make about whether or not to become your own host.

Figuring out the differences between an ISP and a host

Try not to confuse a host with an Internet service provider. You need both! Allow us to explain the difference by using a car analogy.

Think of your Web site as a car. The color, interior materials, CD player, and sunroof are all visible parts of a car — and those visible elements are comparable to your Web site. Although the car's engine might be hidden away under the hood, it gives the car its power. You can get a lot of horsepower to provide that extra oomph, even though the only folks likely to see this part of the car are you and your mechanic! Those under-the-hood works are like your hosting service. You can choose more disk space and other extras that give your site more power. If your engine isn't running, your car doesn't work; similarly, if your host's server is down, so is your Web site.

Where does Internet access enter this picture? That's your driving lane, of course! You can stay in the right lane (the equivalent of dial-up access) or hit the left lane for speed (broadband service). A tollbooth is the equivalent of the service provider that sells you access to the Web.

Most ISPs provide both Internet access and Web hosting.

Finding the host with the most

When you're gearing up for a high-performance Web site, you must decide how much horsepower — er, hosting power — you really need for the site. Hosting power translates into fast

loading speeds, video and sounds playing without interruption, and images loading quickly. Consider these hosting options:

- **Disk space:** The size of your Web site files dictates how much disk space, or storage, you need from a host. If you use Flash, or plan to have a lot of pictures or graphics, count on needing more storage space. Typically, disk space is measured in megabytes (MB), and 500MB is enough for a basic site. But even a low-end hosting package can start out offering a minimum of 1 gigabyte (GB) of space.
- **Bandwidth:** This capability controls how much data, or information, a server can send and receive at any given moment. The higher the amount of bandwidth your host's server has, the more traffic (visitors) your site can support at one time.

  If you exceed the site's available bandwidth, the site crashes, and you have many disappointed customers!
- **Performance:** In addition to bandwith, the server CPU also has an impact on keeping up with the traffic it receives. Customers will soon become ex-customers if they see "Web server busy" errors when they 're placing online orders. To prevent such errors, make sure you ask about the proecessor and processor speed available with the server hosts you consider. Low processor speed can greatly affect the performance of even the best servers.
- **Data transfers:** Every time someone views information from your site (including text, images, and video), it's considered a transfer of data. Think of it as traffic (or data) leaving your site. You can generally count on 1GB of data transfer being the same as 40,000 to 50,000 page views. Hosting plans generally allow for a specified amount of transfers per month and then charge additional fees if you consistently exceed the limit.
- **Database access:** If you plan to incorporate a database on your site (for inventory management, for example), the server must allow for it. Typically, you should ensure that MySQL or SQL (Standard Query Language) is available, which means that the server is set up to use this language to access and transfer information from your database. Don't be surprised if you're asked to pay extra for this feature.

- **E-commerce enablement:** If you're planning on selling products directly from your site, confirm that your hosting plan supports e-commerce software, such as a shopping cart program, and that it supports the one you want to use. Many companies bundle hosting with a specific e-commerce solution (because they get a cut of the fees from those merchant programs). Regardless of whether your e-commerce solution is part of a bundle, you're likely to pay more in hosting fees when you add an e-commerce feature to your site.

  In addition to obtaining e-commerce software, you need an SSL (Secure Socket Layer) certificate. It ensures that you can safely transmit data over your Web site when customers make purchases. Check to see whether your hosting plan offers a shared SSL certificate, which covers all Web sites located on its server. Otherwise, expect to shell out more bucks to purchase an individual SSL for your site.

- **Redundancy and backups:** If your server crashes, you're up a creek without a paddle! You must back up your Web site, which means that your data is copied and saved to another location so that if one server goes down, your data is still available from the second source. Your hosting plan should include frequent (preferably daily) backups to derail any impending crisis. To prevent server crashes in the first place, you need a reliable server — not to mention a responsible host.

  When you're purchasing a hosting plan, ask what type of precautions a provider has in place to prevent its server from going down. Don't forget that the problem isn't always a matter of equipment failure. Power outages, maintenance checks, and other conditions can cause a server, along with your Web site, to go out of commission. *Redundancy* is the best contingency plan because it means that your host has dual systems in place, allowing information to remain accessible from a secondary source, even if the primary source goes out.

- **Web analysis:** To understand who your customers are and how they're using your site, chances are good that you need to know how many people visit your site each day, what parts of the site they frequent, and maybe even what other sites these visitors came from (based on IP addresses). To find out, you need some type of Web

analysis software. If this feature isn't included with your hosting plan, ask whether any restrictions exist on what type of software you can use with the site and whether you pay an additional charge for using it. Although many free tools are available for Web analytics, you may decide to pay for tools that help you decipher the data. (For more about Web analytics, see Chapter 10.)

- **Support:** No matter who you are, sometimes you need a little help. Although determining the quality of a host's support before you experience it isn't easy, you can compare some basic features.

  Is support offered 24 hours a day and seven days a week? If not, what are the hours of the host's customer service center? Are both online support and phone support available? (If online support is offered, make sure that it offers access to answers in real time, as opposed to waiting as long as 24 to 48 hours for a response to e-mail!)

  

  Always confirm whether you're charged for live tech support and whether the charge is based on use by the minute, hour, or month. Those bills can rack up fast, even for a seemingly simple question!

- **Other:** A host can choose to make a lot of extra features available with your plan. If all other factors are equal, don't hesitate to compare this assortment of small prizes to find the host with the most! Mailboxes (for your e-mail) are a common feature, although the number of mailboxes offered varies greatly. Mailboxes might not even be a big deal to you.

  On the other end of the scale, though, competitive hosting plans now offer free tools that allow you to set up blogging, chat rooms, or discussion boards; easy content-management programs; polling or voting features that allow you to take surveys of your customers; calendars; and more — a lot more!

Sorting through the host of options

Although choosing a hosting plan can be overwhelming, after you begin researching all the options, you find that most hosts make comparing apples to apples easy. To ensure

competitiveness, hosts often break down their plans into several categories. With a quick glance, you can determine whether a plan has all the elements you want.

Basic, or starter, hosting packages offer bare-bones necessities — enough to get, and keep, a simple site that has minimal images up and running. When this level is all you need, you end up making your decision strictly on price.

When you require e-commerce capabilities, no matter what, you have to choose a plan that provides for this need. (Typically, no more than one e-commerce hosting plan is available from one source — so you need to shop around to get the best deal.) Again, when you're selecting among providers, your decision comes down to price and which e-commerce program is partnered with (or offered by) each host.

Mid-level plans usually leave the most room for uncertainty. These hosting options vary the most by both price and available features. To overcome indecision, make a list that prioritizes which items you need and which you're most likely to set up and use in the first three months of your site going live. Then again, budgetary decisions might rule in the end!

The geographic location of the host can influence your decision about whether to use them. Although your site can be hosted by a company located anywhere in the world, its proximity offers a few advantages and disadvantages, according to its scope:

- **Local:** Consider signing up with a company right in your backyard. Among the pros of this arrangement are that you can schedule an on-site appointment with the provider and check out its facilities for yourself. Because you also typically get assigned to a specific salesperson, you have a primary point of contact who ends up knowing a lot about your business and its needs. This arrangement can be helpful, especially in the beginning, when you're making decisions about which features you do and don't need.

  The biggest disadvantage of this arrangement is price. Local hosting companies are often smaller than their larger, national online counterparts and can't be as competitive. Additionally, if you live in a rural area or a small

city, you might not have many — or any — locals to choose from.

- **National:** Although you might not get personal attention or an up-close look at the facilities of a company that isn't located near you, you can get some real deals. Not only are you likely to find palatable prices, but researching your options is also a breeze. Visit a host's Web site, click the link to show pricing, and — bam! — you have the 411 (that's information) to make a quick decision.

One word of advice for when you're shopping nationally: If the company isn't a large, recognized provider, take extra precautions. When you're thinking about using any online service you're not familiar with, do your homework first. Check with the Better Business Bureau for complaints, search online for user reviews, and call a sales rep to get a better feel for how the company operates.

Self-server: Hosting the site yourself

One decision you eventually have to make when you're selecting a host is whether you want to skip a hosting plan and rent or buy your own dedicated server. In that case, your partnership with a particular hosting plan might require you to sign a contract — or two. To help you better understand what you might be getting into, we explain the different types of server options:

- **Shared server:** The hosting plans we explain in this chapter are examples of how you use a shared server. In essence, you're using the same computer (or server) along with many other Web sites. Although that arrangement translates into lower costs, you have less flexibility in the types of applications you can run because the server is configured with the same settings and applications for all who use it.
- **Dedicated server:** Gaining complete control over the type of server you use and what programs you install on it requires that you have a dedicated server. As its name implies, the bandwidth, memory, and storage space on this computer are dedicated entirely to you. You also typically gain root access, which means that you can

configure the server to your specifications. You might use this more expensive option when you need to run special programs, or when you have multiple or extremely high-traffic sites.

The downside to using a dedicated server (in addition to the expense) is that you're responsible for installing software, handling regular maintenance, and fixing any unexpected problems or system failures that occur. We recommend tackling this server arrangement only if you're an experienced Web master or computer technician, or you've hired staff to look after this role.

- **Co-location:** Maybe you like the idea of owning a server but aren't in a position to manage or repair any problems that arise. If that's the case, co-location might be the answer. You provide the hardware (or the computer) and lease space (rack space) for it with a host company. The host company then installs the server and makes sure that you have consistent access to the Internet, which is a big advantage of co-location.

Depending on your physical office space, this situation is ideal for another reason. A server requires certain environmental conditions, such as being kept in a dry, cool (or temperature-controlled) room, and co-location providers maintain data centers that meet or exceed these conditions. Because you own the equipment and are responsible for all other aspects of maintaining it, this option also requires that you have advanced skills.

- **Managed server:** Sometimes referred to as a virtual server, this option is a compromise to a dedicated server. Unlike co-location, you lease the equipment, and the hosting company takes care of most server functions, including installing software and updates, handling security and maintenance, and acting as a troubleshooter for problems. If you have specific needs for your site and aren't proficient in maintaining a server, managed servers work well.
- **Virtual dedicated server:** Another take on limited maintenance but increased flexibility is what some hosts refer to as a virtual dedicated server. Like with shared hosting, others use the server with you, but access is limited to a small number of customers. You gain dedicated space and control because the host uses virtual walls or

partitions in the computer to separate it into several virtual dedicated servers. Although your site is on a shared server, it has been configured to appear as a standalone dedicated server with no other users.

Like with hosting, the price and the exact services offered with each server package vary.

Because you're usually required to sign a long-term lease agreement, make sure that you understand what the price covers and what the responsibilities are for both you and the host company. Also, make sure that cancellation terms are clearly spelled out so that you can get out of the agreement if you're unhappy with the provider.

Deciding on a Web Designer

The Oracle at Delphi was famous for the saying "Know thyself." Web design reinforces the importance of self-knowledge. Be honest about your skills. Are you a programming geek? A gifted photographer? A colorful writer? Do you dream in Web-safe colors, JavaScript, or Flash animation? No? Then designing your own Web site is probably not your forte. Don't be hard on yourself. With the possible exception of Leonardo da Vinci, should he be reincarnated in the 21st century, everyone needs help of some sort with Web site development.

As the owner of a business with a passion for excellence, or the person delegated to oversee the company Web site, your job is that of *producer,* not creative director or technical manager. You show wisdom, not weakness, when you play to your strengths as a business owner and leave the implementation to someone else. As producer, you select the team and coordinate their efforts, cheer them on when the inevitable problems arise, answer their marketing questions, resolve conflicts based on your business acumen, and arrange the celebration when the site goes live.

Ruling out doing your own design

As a business owner or manager, stop for a second and take a look at your list of responsibilities. We're betting it's a lot

longer than your arm! Besides overseeing the content, managing the money, hiring and helping staff, and handling the marketing, are you going to educate yourself in HTML, PHP, JavaScript, database programming, Dreamweaver, FrontPage, marketing communications, copy writing, photography, and graphic design in the next six weeks? Are you also fantasizing about winning the Tour de France, or are you just a victim of some misbegotten belief that doing all the Web site creation yourself will save you money? Forget about it!

Unless you're already a professional Web designer, don't do it all yourself; going it alone is the biggest mistake you can make. Playing with your personal Web site is one thing, but creating a successful business Web site is a job for the pros.

Would you let someone without experience design your ads, dress your store window, serve customers, buy goods from vendors, or negotiate contracts? Then why trust your Web site to a novice? Novices might include your friends, neighbors, children, or siblings (unless they have experience creating business sites for a living). Even if you do have a Web designer among friends or family, treat him or her like you would any professional — write up an agreement so that you make your expectations clear. Believe us, an agreement saves you aggravation and disappointment, not to mention your relationship.

Time is money! A nonprofessional who does Web sites on the side and takes three or four times as long as a pro can end up costing you marketing opportunities and sales, as well as money.

Deciding who you want to design your site is a strategic marketing decision. How will your site measure up to your competitors' if yours is obviously made by an amateur and has links that don't work, but your competitors' sites look professional and run smoothly? Don't waste an obvious opportunity to get an edge.

Using a professionally designed template to create your site

Do you remember when desktop publishing software first came out? Unskilled users distributed newsletters that looked

like font catalogs, using every imaginable typeface and style. The resulting newsletters were almost unreadable. You can avoid the Web site equivalent of desperado design by using a professionally designed template.

Templates aren't as flexible as a custom site, but they can save you money while maintaining graphic integrity. You can launch a template site very quickly and be confident that navigation will work. With a template to take care of design and programming, you can focus on content.

Think of templates as the equivalent of buying business stationery from an office supply store. You can hire a graphic designer for custom work, or order letterhead and business cards from a store catalog, customizing ink colors and paper stock. In terms of the Web, you select a template and customize it with your corporate colors, logo, text, and photographs.

If you can't afford a custom design when you start, use a template as a strategic placeholder. Put your money into marketing until you build a Web presence and set aside the revenues. Later, you can redesign the site with your profits.

You can choose templates at three different levels — cost, customizability, and skills required:

- Select a package solution that includes your choice of template design, hosting, and a variety of other options, based on your needs. This is the simplest and usually the least expensive option. On the downside, package solutions are usually the least flexible. If you want, you can hire a designer to advise you on color choice or to tweak the template a bit.
- Buy a template design that's specific to your industry and upload it to a host that you've selected separately. This option requires more knowledge and skill.
- Hire a company that specializes in a particular industry, with a selection of templates that they customize for you. This option is more expensive than the other two solutions, but it's still less costly and less time consuming than a fully custom design.

Hiring a professional designer

If you decide to invest in professional Web design services, you need to find the right designer for your objectives.

Deciding what expertise you need

For most business sites, you want to select designers who come from a marketing communications background, not a pure programming or art background. Your developer must have the ability to design with an eye towards your target market, be knowledgeable about achieving business objectives, and be skilled enough to do the programming tasks required.

The designer is only one of several professionals you might need. This list shows some of the other folks you might need to hire:

- Web developer/designer
- Graphic designer
- Illustrator
- Photographer
- Copy writer
- Merchandising expert
- Videographer
- Audio engineer
- Animator (Flash, virtual reality)
- Advertising expert
- Online marketing specialist

Developers who have enough staff might be able to help with all tasks usually handled by the people in the preceding list, or they might subcontract these services out, saving you the trouble of finding providers yourself. At the very least, they probably have a list of people they recommend.

Most small businesses can't afford all these professionals. Decide which aspect of the site is most important to its marketing success. For instance, online stores and tourist sites depend on high-quality photography. A content-rich site

inherently demands good writing, and a multimedia site might need an animator, videographer, or audio engineer. Prioritize by outsourcing the most critical element. Do the best you can with the rest.

Finding good providers in your area

Locating qualified professionals is like finding any good service provider. A recommendation can't be beat. Take the time to review designers' and other providers' portfolios online to ensure that you like their style and to assess their talents.

Always check references — not only those that providers give you, but also several others randomly selected from their portfolio.

Here are a few ways to find good Web professionals:

- Bookmark a list of sites that you love and approach the designers responsible for those sites.
- See who designed your competitors' sites.
- Ask others in your local trade association for names of providers that they use.
- Look at Web sites for regional or statewide associations of Web professionals.

Generally, you get what you pay for. You can pay a lot for someone who isn't capable, but you can't pay a little for someone who's really good at what they do.

Creating a Site Index

A preliminary site index helps you gather your ideas in one place. Drafting this index allows you to plan what information and what pages your Web site will contain so that you can be sure it's useful to visitors.

Outlining — like you had to do in junior high — is one easy way to organize and track potential site content. Begin with your top-level navigation content, the big-picture headings. Then, work your way down to second-level pages and third-level pages, if you need to. The more complex your Web site, the deeper your index will drill down. If, however, you have a

very simple site, your plan may have only top-level navigation headings.

Organize your site index strategically, with the most important information for each level at the top of that level's section. Then review the site index against your site goals. Keep rearranging the index until it reflects the goals that you want to accomplish. When you've (more or less) settled on the index, you can later convert it into tables for your own reference, to track which pages need to be written, which pages need photographs, and which pages are complete.

Be sure to include any special functions that the user might need to access, such as a Contact Us page, newsletter signup, or audio/video players. The site index might change after discussion with your developer and during the development process.

The order in which navigation items appear on the screen is crucial. The viewer's eye goes first to the upper-right corner. Place there the most important action you want your audience to take. The top of the left navigation is the second most important spot. The less-important activities go in the middle of the list of activities on the left side or in the middle of horizontal navigation across the top.

Naming Your Web Site

Selecting (or changing) a domain name (sometimes called a *URL* for *uniform resource locator*) is a critical decision. The right domain name makes it easy for users or customers to find your site, which is always good business. The wrong name can frustrate users, and as a consequence, you could lose business! We give you the lowdown on how to choose the right name for your site.

A good domain name is

- **Easy to say in person:** We think that saying "digit" before a number in a URL, or the word "dash" or "hyphen" is cumbersome; besides, people have a hard time finding the dash character on a keyboard.

- **Easy to understand over the radio or on the phone:** Words that include the *ess* and *eff* sounds are often confused when listening, as are certain consonant pairs such as *b/p, c/z,* or *d/t.* If you're selling in other countries, confusion between English consonants is different, such as *b/v* in Spanish or *r/l* in Japanese.
- **Easy to spell:** Using homonyms might be a clever way to get around a competitor who already owns a name you want to have; however, you're just as likely to drive traffic to your competitor as to gain some for yourself. Also, try to avoid foreign words, words that are deliberately misspelled just because they're available (for example, *valu* rather than *value*), or words that are frequently misspelled.
- **Easy to type:** The longer the URL, the more likely a typo will slip in. Your domain name can be as long as 59 characters, but unskilled typists average an error every seven keystrokes!
- **Easy to read in print and online ads:** You can insert capital letters or use a different color for compound domain names to make them easier to read. Be sure that your domain name can also be read easily in black and white, and in a logotype, if you design one.
- **Easy to read in the address toolbar:** You can't use colors or capitalization to distinguish parts of a compound name or acronym in address or search engine boxes. Depending on the browser fonts that the user sets, the letters *m, n,* or *r* next to each other (mrnrnm) are very hard to read, as are the characters l/i (lilllil) or the similar digit/letter combination of 1/l.
- **Easy to remember:** Words or phrases are easier to remember than a stream of letters in an acronym, unless your target audience already knows the acronym from extensive branding (for example, AARP). Your domain name can be, but doesn't need to be, your business name, unless you enjoy a preexisting brand identity.

Stick with the original top-level domains (the primary categories into which Internet addresses are divided): `.com` for businesses, `.org` for nonprofits, and `.net` for network providers. Avoid top-level domains such as `.info`, `.biz`, or odd countries just to get the name you want. People won't remember them and therefore won't be able to find your site.

Don't bother taking the same name with multiple top-level domains unless you think your audience might be confused. You probably won't want to spend money branding your URL with several extensions; generally, one site redirects to the other. The one exception is international selling. You might want to register the same domain in different countries that have a large target market, such as members of the European

Renaming your site: Pros and cons

Renaming a site that doesn't have a great URL is always a challenge. The upside — new traffic from word of mouth and advertising — must offset the downside to be worth the trouble. You face the following risks:

- Losing repeat visitors
- Losing search engine ranking
- Losing inbound links
- Losing brand recognition
- Incurring added costs for reprinting, packaging, or signage

Change your domain name only if you have little to lose. A site with poor search engine rankings, little traffic, and few inbound links is a pretty safe candidate for a change. However, if you have significant offline brand-name recognition and your brand appears in your URL, stick with what you have.

If you decide to abandon your primary domain name, ask your developer to redirect your old domain name to your new one for at least four to six months and consider including a transition screen informing users of the new URL. Don't forget to submit your new name to search engines and request inbound links again. Essentially, every domain name requires its own online promotion campaign.

community or Japan, so that you can get into search engines restricted by national registration.

With tens of millions of domain names registered, finding a name might seem impossible. Take comfort in knowing that nearly as many domain names are expiring as new ones are being registered.

Testing, Testing

After taking the trouble to find the perfect place for your site, design that site, and fill it with quality content, you might think that your Web site creation job is done. We don't want to disappoint you, but you have to deal with another major phase before you launch. You need to test, test, and test again — then, and only then, blast off!

Before you start uploading

Launching and *uploading* your site are both terms used to represent the point when you finally make a site viewable by the public over the Internet. Before you upload your site to the Web, though, make sure that it's fully functional. Complete your site design and content, get your navigation tools working properly, and put all parts of the site (even the smallest pieces) in place.

A haphazardly constructed and prematurely launched Web site makes your business look bad and loses potential customers who might never bother coming back. You should know about a few other helpful concepts before launching:

- **Little details count.** Bring out the magnifying glass when you're reviewing your site before launching. Check for misspellings, broken links, and other problem points.
- **Some functions are limited until after the launch.** A few features might function fully only after your site is live. For instance, forms can frequently be activated only after the site is up permanently.
- **Third-party data takes time.** If you use a newsfeed, syndicated content, or other data from third parties, it might not be instantly available when the site launches.

Sometimes, a delay of several hours, or even a full day, occurs before you're entered into a customer database, the switch is flipped, and you go live.

- **Rankings aren't immediate (or guaranteed).** After your site goes live, you can submit it to be reviewed and possibly included in various search engines. It takes a while for a search engine to scan and rank your site after it's up, so don't expect your site to show up in the search engines right away. Initially, only people who are purposefully looking for your site by typing the exact URL or your company name in a search will find it.
- **Automated Web builders are different from designers.** If you launch (or your Web designer launches) your site, it's immediate. In other words, all the files are uploaded to the server at one time. Within minutes, you're finished, and the site is on the Web. With automated Web builders or template programs, you might be required to publish your site page by page to the Internet, rather than upload a complete file. (You can remove a page later if you see a mistake.) Be careful, though: Correcting problems with buttons or the site's menu bar is sometimes difficult after the site is published.

Here's one last thing you should know: Sites look different to different people. We're not talking about personal style preferences. Instead, realize that the code or language used to design your site appears differently when it's viewed with various browsers. Your job is to test your content with every browser you can get your hands on and minimize the differences so that the site looks its best in any browser. In the following section, we suggest ways you can test for optimal conditions before launching your site.

Testing browsers and screen resolutions

Compatibility testing is the fun part of launching a site. Any slight variation between the code and the way each browser interprets the code makes a noticeable difference on the screen.

Even a single command code can create different looks when it's displayed in different browsers. For example, Internet Explorer 7 might open a new window for each Web site you want to view simultaneously. Firefox, on the other hand, might use the concept of tabs so that you have only one Firefox window open but view multiple Web sites by using a tabbed format.

How do you check for browser discrepancies? The obvious answer is to install every possible browser (or, at least, the mainstream ones) on your computer and run a trial version of your site in each one. Because you can download browsers for free, the only cost to you is your time. Some Web sites and free shareware programs check quickly for cross-browser compatibility. For starters, you can try the tools available at AnyBrowser.com (`www.anybrowser.com`).

What should you check for? Try to find glaring inconsistencies that make your information difficult to read, prevent images from loading, or omit information completely.

You can also test screen resolution, or how your site looks in different resolution settings. (Don't confuse this term with the physical measurement of your monitor's screen.) By resolution, we mean the number of pixels (or miniscule dots) that make up an image on the computer screen. Standard resolution settings are 640 x 480, 600 x 400, and 1024 x 768. Each resolution contains a designated amount of viewable space, which can affect how your Web site looks on a computer.

Computer users can choose which resolution they want their computers to display. Now is the time to check your work! Adjust your screen to each standard resolution to see how your site appears to visitors using each resolution.

Testing on different operating systems

If checking for browser compatibility and screen resolution (which we talk about in the preceding section) isn't enough already, you need to deal with one other major element when testing your site. You have to test your site on different operating systems. Do you wonder what your site looks like on a computer that uses Macintosh OS X, if you designed it on a PC that uses Windows Vista? And, we haven't even mentioned Linux!

Not everyone has access to multiple computers and operating systems to test for this feature. Instead, use a site that offers this service remotely (over the Internet) for free or for a minimal fee. BrowserCam (`www.browsercam.com`) uses screen captures to let you see your site on any operating system and in any browser.

Although you might not want to hear this advice right now, you should routinely test your site for these and other issues, long after you pass the initial launch stage. Keeping your site current and easy to use for the largest possible number of people is standard in the world of online business.

Taking a trial run

When a major company releases a software program, game, or Web site, it often has a limited distribution in a beta version. *Beta* means that the work is in test mode and is subject to change. A beta test, or a product in beta mode, is typically released to a large segment of the general public. As for your site, we suggest showing a beta version to a limited group of users in a trial run.

These users include (ideally) friends, family, and a few prospective customers who are willing to provide you with honest feedback. Upload the site and run a live trial version of it for a day or two. Everyone then has a chance to visit the site several times before you take it down again for final changes.

Your beta users should be on the lookout for common errors you might have missed, features or links that don't work correctly, graphics that load improperly (or not at all), and the general appearance and overall ease of use of the site. (For instance, is the site intuitive to visitors, or do the names of the page links and buttons make no sense to anyone but you?)

Taking Your Web Site Live

NASA launches its space shuttle missions at certain times of the day and under the most forgiving weather conditions. Although we guarantee that the weather outside isn't a concern for your launch, certain times are better than others for sending your site out on the Web.

Particularly if you're using a freelance Web site designer, you should have input about when your site launches. Because that person usually sends the files to the server on your behalf, request that your site be launched early in the week. That way, if a problem surfaces, you have plenty of time (during the workweek) to fix it.

Frustration is quick to set in when you launch a site on Friday afternoon and discover a problem shortly thereafter that you have to live with for the whole weekend.

When you use an outside developer, you're asked to sign a waiver when the project is finished. The waiver says that your site is accurate and that all requested changes were made. You get a sense of finality when your site comes off a project-management list. Sign the waiver only when you're completely satisfied! The Web developer is then released from additional work after the site is launched. If your provider charges for maintenance (or changes) to the site, the signed waiver signals that the provider can switch you from the development stage to the maintenance stage, which can cost you.

Avoid launching the day before a long holiday weekend begins, regardless of whether you or someone else designs your site. Of course, larger Web sites might find that launching a site over a holiday is advantageous. The slower period gives the company an extended shot at a trial run — and one more opportunity to correct errors. If a site has been well marketed, the opposite effect can occur: It can be a hit by a large amount of traffic because more people are home and spending time on the Web. However, unless you spend a lot of money and effort investing in prelaunch publicity and advertising, high traffic flow shouldn't be an issue for you at the beginning — holiday or not.

Nothing has to be forever on the Web. If you discover a mistake after your Web site goes up, don't panic. You can easily and instantaneously make a correction. The Web is certainly not static, so updates are usually a snap.

Plenty of excitement should accompany your site's send-off to the World Wide Web. This major accomplishment is the start of something potentially lucrative. Celebrate!

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FOR DUMMIES®

Chapter 10

Ensure your Web site's success!

A Reference for the Rest of Us!®

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Chapter 10

Setting Your Web Sites Higher

In This Chapter

- Developing online marketing techniques
- Getting the words right
- Updating your Web site content
- Creating an online community
- Doing self-promotion
- Keeping track of Web site statistics

You know that your business's Web site is an important element to helping your company be successful, and you're prepared to spend the time and money to make it good. But what about great? This chapter gives you some pointers on ways that you can make your Web site better for your visitors and also for your business.

Marketing to Attract Web Traffic and Repeat Visitors

Everything your company does affects customers somehow. Everything contributes to the impression they have of your business and affects their expectation of the quality of service they'll receive. That, in a nutshell, is marketing.

For your Web site to be successful as a business tool, it needs to

- Attract new visitors.
- Keep them on your site.
- Bring them back as repeat visitors.

Alas, no rules exist that say, "Do a blog or interactive media only if you have a young audience" or "Men respond more to testimonials than women." You can implement many different combinations of the marketing features described in this chapter to create a site that grabs your audience and pulls them back for future visits.

When it comes to choosing those initial online marketing techniques, consider these factors:

- What you're trying to accomplish with your site
- Your target market
- How much money you have budgeted for site development
- How your server is configured
- What your developer knows how to do
- How much time you have before site launch
- If your site is already online, how much and what kind of data you've collected
- How much time you have to maintain the marketing initiative
- How much staff you have for site maintenance
- How much interest you have in the online marketing technique
- Whether the potential payoff to the bottom line makes the online effort worth it

Talk with your Web developer about what special features you want to include on your business's Web site. You need to know what features you want so that the Web developer can give you an accurate price estimate and schedule work on your site. Even if you don't implement the ideas all at the same time, let your developer know what you're considering

in the future. In some cases, a developer can make provisions so that he or she can add a feature later on easily. Otherwise, you might face major programming costs to integrate a feature that you didn't plan for.

Writing Web Copy That Customers and Search Engines Will Notice

For your Web site to achieve your business goal (we help you determine your goal in Chapter 9), you need to find the right words. Don't worry: When you're creating content for your own site, you don't have to hire a professional writer. However, you do have to understand what turns ordinary words into good Web copy — turning plain words into ones that sell.

How do you know what works when it comes to describing your products, welcoming your customers, and communicating in any other way that requires the written word? Effective Web copy helps you accomplish these four objectives:

- Get your site noticed by search engines.
- Convince customers to visit your site.
- Encourage your customers to act (buy stuff!).
- Entice customers to come back and do it all over again (buy more stuff!).

Now that you know what earns the official stamp of approval on your Web copy, start writing. But not all words are created equal. With millions of words in the English language, picking the right ones for your Web site might seem daunting. Not so. Writing for the Web is easy if you use words, phrases, and sentences that are

- **Attention-getters:** Visitors to your Web site are unforgiving. If you don't catch their attention quickly, they desert you in a heartbeat. Make your words meaningful and easy to read.

- **Self-explanatory:** Abbreviations, catchy product names, and industry lingo are fine. Don't assume, though, that customers understand them on the first read-through. When you use these types of words, define them in parentheses. Be clear.
- **Simple:** Say what you mean. Don't make your customers read between the lines or try to guess what you intend.

Just like you use industry buzzwords to talk to your customers or clients, you can use these same types of words to "talk" to search engines. Think about how search engines work to help promote your site. A search engine starts by *classifying* your site, putting it into a group of similar sites. Then, it ranks your site based on how relevant the site is to that particular category of sites. That level of relevancy makes the search engine useful when potential customers search for particular terms.

When you're writing content that's search-engine friendly, remember these two brief rules:

- **Think like a customer.** Scatter buzzwords, industry-specific phrases, and words that specifically relate to your type of business throughout your site's content. Incorporate words that customers would use when conducting a search.
- **Avoid saturation.** Keywords should be a natural part of your content and not overly obvious. For instance, if you write just three relevant phrases repeatedly, the search engines flag your site as a problem and probably lower your ranking or throw you out of the listings.

Before writing your content, do your own online search by using a popular search term for your product or service. Then, visit the top five sites that appear in the returned rankings. Notice what words or phrases your competitors use and consider finding a logical place for those words or phrases in your content.

Keeping Your Content Fresh

Fresh content is a must. If you visit a Web site marked Last Updated March 14, 2005, you're likely to immediately take off for another site. Why waste your valuable time looking at old, irrelevant content when you can find dozens, if not hundreds, of more recent Web sites? Even if you're looking at a simple information-only site whose URL you entered from a business card, you can't be sure that the hours of operation or location are still correct. If you need to call the company for confirmation, you're more likely to just visit another Web site instead.

Updated content impresses customers and prospects. It demonstrates your commitment to your Web site and, even moreso, your respect for customers' time. An updated site helps attract new customers in the first crucial seconds after they arrive at your site and brings them back for repeat visits.

In addition, updated content is one of the factors that some search engines consider when ranking your site in search results. The more often a site is updated, the more relevant search engines consider that site to be.

Following an update schedule

Your content update schedule depends on the nature of your site. At the very least, review all site content at least once a year and budget a complete site overhaul every few years. During that time, viewers' expectations of a contemporary site change while technology improves and graphic styles evolve. Updating some content at least once a month makes your site rank higher with search engines and is very doable for most businesses.

Paying a developer for updates can get expensive, although some developers sell a hosting package that includes monthly update services. As a last resort, someone in-house who's already familiar with HTML or various Web publishing software tools can make changes to your site and upload them via file transfer protocol (FTP).

However often you decide to update your site, decide who's responsible for doing those updates and who confirms that they've been done. In other words, plan!

Knowing what content to update

A simple rule exists to decide what parts of your site to update: anything and everything! Even small changes can keep your site current; you don't need a complete overhaul of the copy. For instance

- Your home page might need changes, perhaps because you've introduced a new product or want to promote a special offer.
- Your About Us page might need to reflect changes in staffing. Perhaps you've updated summer hours, a new location, or new e-mail addresses for your Contact Us information.
- You might need to amend your product pages with price changes, additions, or deletions.
- If you have a media page, you might want to add new press releases, newsletters, or mentions in other media.

Remember that your viewers are interested in what affects them, not what's important to you. Although you might be very proud of your latest contract, that news probably doesn't belong on your home page unless your target audience consists of investors or business press.

Some people create a What's New page specifically to collect all the changes between site updates. What's New pages are helpful when you have a constant stream of changing news, but you get more search engine mileage by changing multiple pages on your site.

Your developer can also create a linkable, changing headline that's fast and easy for you to modify with your latest news or product promotion. Drawing a blank? Try some of these ideas:

- New products and services
- Seasonal specials or page appearance, especially for retail

- Sales and special offers
- Product modifications or deletions
- Price changes
- Trade shows you're exhibiting at, especially if you have passes for the show floor
- Planned speeches, signings, performances, or other public appearances where you can meet customers
- New distributors or retail outlets where customers can shop
- Schedule of classes or activities
- Changes in hours, phone numbers, addresses, and locations

Using automatic updates

If you want to be just a little sneaky, use an automated service that feeds your site such information as the date, weather, or news and stock tickers. You can also find sites that provide rotating words-of-the-day, jokes, or quotations to make it appear that content on your site has changed — and it has, as far as visitors know!

Automated updates are a reasonable option for businesses that have information-only sites that remain fairly static, as long as the content is relevant to the purpose of your site and appropriate for your audience. For instance, a stockbroker might want to include a stock ticker, but a joke of the day could be quite inappropriate. Be cautious about using religious or political quotation services unless you're sure your audience won't be offended.

Automated updates might help with your search engine ranking, but they're no substitute for reviewing your own content on a regular basis.

Some content services are free, some require that you link back to the source, and others charge a monthly rate for their service. Your developer can select the code that's right for your site and place a date, stock ticker, or weather script directly into a server-side include (SSI) or footer so that it appears on every page. Rather than use scripts, you can now

use Really Simple Syndication (RSS) feeds to provide news, weather, or other information to your site, but search engines might not see these feeds as site updates.

Don't use a visible automated page counter on your Web site. Although a search engine may consider a counter as a content update, a page counter can provide negative information unintentionally. For example, if viewers stumble across a counter that reads 56 visits since 1999, they might wonder why they should bother reading the page. The page counter becomes a "reverse testimonial," in effect bad-mouthing your site.

Building an Online Community

Human beings not only need, but also want, to communicate with one another. The Web offers a seemingly endless stream of techniques to do just that. Virtual online communities establish a give-and-take exchange with and among viewers who share a specific interest. Communities have sprung up on almost every subject, from movie star fan sites to do-it-yourself advice, from computer technical support to online investing.

Supporting an online community on your Web site is one of the most reliable ways for you to ensure that visitors return to your site again and again. Online communities can also increase traffic, time on site, sales, and return on investment (ROI).

Keep in mind, however, that any online community requires a commitment of time, people, and attention to keep it from degrading. If you don't have time to oversee these communities, you're probably better off selecting other methods of onsite promotion. The size of the community, the number of participants, and the nature of the topic determine the amount of time required and the level of liability exposure you incur. On medical topics, in particular, consult your attorney for disclaimer language to include on the site.

You might also find that you need to promote the site feature itself online and offline to generate traffic and recruit members until you reach a self-sustaining number of participants.

Knowing how online communities communicate

Online communities have two forms of communication styles: They use either a many-to-many communication style or a top-down, one-to-many communication style. Either style might occur *synchronously* (where everyone is online in real time) through chat rooms, or *asynchronously* (where messages are posted at different times) through message boards, blogs, or guest books. Here's a closer look at these two communication styles and how much time you need to commit for each type:

- **Many-to-many:** You don't have to do all the work with many-to-many communities. Community members help each other find desired products, exchange opinions, resolve problems, and give advice. On a regular basis, you still need to pay attention to what's transpiring. You can choose to stay in the background with a member-to-member community, if you want.
- **One-to-many:** In one-to-many communities, an authority figure responds to queries and comments from multiple users, although others might chime in with their opinions. However, one individual is clearly in charge. That expert might be you, an outside content expert contracted to answer questions, a tech support employee, or a guest "speaker" who appears at a specific time.

All online communities require a commitment of time and talent to manage them. It takes skill and judgment to monitor the messages, correct technical inaccuracies, remove offensive language before it posts, avoid liability, keep an eye out for online stalkers in a social network, write content for a blog, and recruit participants. Online communities are such a sponge for energy that some communities ask members of the community to monitor each other and notify the administrator of objectionable postings. Reality check: Do you have the long-term interest to keep the community ball rolling? Does the content of the community fit well into the purpose of your site? Does the community feed into your business goals, either directly or indirectly?

Managing message boards and chat rooms

Message boards — sometimes called *bulletin boards, discussion boards,* or *forums* — allow asynchronous communication on your site. Bulletin boards were one of the earliest uses of the Internet, predating the development of the World Wide Web. The computer scientists working on the Internet originally created these boards to encourage open discussion of technical issues.

You can use message-board software to host one discussion topic or many, allow limited or unlimited participation, and select whether the boards are *moderated* (someone reviews the posts to filter them for propriety) or *unmoderated* (a posting free-for-all).

Chat room software operates in a similar manner, except that everyone who participates is online at the same time. It can be more challenging to manage real-time chats, so an expert often handles the content response, while a separate moderator manages and edits the question flow.

Buzzing in the blogosphere

Blogs (Web logs) are supplanting message boards as the preferred technique for asynchronous discussion. A *blog* is a form of online journal that allows you to wax eloquent (or tongue-tied) about any subject and solicit comments from responsive readers. Unlike message boards, blogs look like Web pages, complete with links, graphics, sound, and video.

Many business sites now feature blogs to solicit user opinions and pinpoint trouble spots. On business, financial, retail, and professional service sites, blogs are something of a chameleon. In addition to the community-building function of a message board, a blog might take on characteristics of an online e-zine or newsletter. You can use yours as an opportunity to educate your prospects on different aspects of your business or product while soliciting questions and comments.

Business marketers have discovered that an onsite blog provides creative opportunities to

- Attract and retain traffic on a site.
- Obtain positive and negative feedback from customers.
- Generate links to other pages on the Web site.
- Announce new products and test price points.
- Build brand awareness.
- Recruit beta testers.
- Seed product promotions.

Blogs can bite! Although blogs might be a great way to position yourself as an expert, they have a way of producing challenging feedback. You might want to monitor how people respond to your postings, but don't get defensive if your customers (and perhaps your competitors) make negative comments online.

Like other forms of community building, blogs take a lot of time. It helps if you like to write. You need to post at least twice a week to keep a blog lively and encourage feedback.

Depending on your marketing strategy, you might prefer to host your blog on another site, such as `www.blogger.com`, so the links to your site appear to be coming from another source. Google, in particular, ranks inbound links from blogs highly.

Writing with wikis

Wikis are related to blogs, but they're more of a democratic community. *Wiki software* allows multiple users to add, delete, and edit each other's Web content quickly without much technical knowledge, making wikis especially suited for collaborative writing. Wikipedia (`www.wikipedia.org`), a free online encyclopedia, is a great example of group content that reflects many views.

Like with blogs, you need to monitor a wiki regularly to check for offensive content, false information, or anything participants may include that you don't want associated with your business's Web site.

Making friends with social-networking software

You can install social-networking software on your Web site, which allows your visitors to form their own groups of motorcycle riders, science fair participants, or whatever else makes sense for your target audience. Social networking is a great ice-breaker application to help people get to know each other quickly: You could help unite fans of a particular product you sell, for example, or connect people who plan to attend a professional conference related to your business. You might password-protect this section of your site to assure privacy.

Ideas for community building are limited only by your imagination. People like to be asked their opinions and then return to see the results of a poll or survey. You can easily add script to conduct a simple poll or take a survey of attitudes toward any topic of interest to your audience. These customer opinions can help you divine possible new business ideas or product improvements.

As always, the choice of software depends on your audience, how they use the site, and your developer's technical assessment of the best software for your needs.

Tooting Your Own Horn

Your Web site is no place to be shy! You have only one chance to make a first impression, so make it a good one. Consider using tried-and-true techniques on your site for shameless self-promotion: advertising (internal banners), testimonials, reviews, and awards. These tools can help you increase the time that people spend on your site.

Displaying internal banners

You know all those banner ads that litter the Web? You can take advantage of similar banners within your own site. Rather than paid advertising that links to someone else's site, however, link your internal banners to pages within your own site. Driving viewers to additional pages increases the time

they spend on your site and the likelihood that they remember your business or buy your product.

Although special features on your site should be easily accessible through navigation, the user's eye doesn't go to the navigation menu initially. Grab viewers' attention with an eye-catching banner that promotes a monthly special, takes them to the newsletter signup page, or accesses a community-building page. Internal banners are one of the no-brainers for onsite marketing, so plan them as part of the overall site layout and graphic design.

Collecting testimonials

Offline testimonials reassure prospects about the quality of the product or service you offer. Testimonials can come from an objective press rating, a celebrity, experts in the field, or other customers. Collect testimonials from satisfied customers and media mentions at all times, not just while you're working on site content. (The testimonial from your mother doesn't count. Sorry.) Although these recommendations take some effort to collect initially and keep fresh, they cost nothing.

If you have a business-to-business (B2B) site, get permission from your customers before using their names, titles, and company names. Some firms don't permit their names or their employees' names to be used in an endorsement; you don't want to risk losing their trade. Sometimes, you can get the same effect by using a job title and a description, such as Director of Engineering, Fortune 500 Company. The same principle applies if you have a recognizable celebrity or expert whose name carries cachet with prospective customers: Get permission first. Although the situation is less sensitive with "ordinary" customers, you're still better off requesting permission. If you can't locate the source, you can use a first name and last initial, or vice versa, and their city or state: J Zimmerman, Albuquerque, NM or Jan Z, Albuquerque, NM. If your customer comes from a small town where he or she might be recognized or has an unusual name, use only the name or only the state or country: P Tchaikovsky, Russia. However, the less specific the attribution, the less potent the testimonial.

Don't paste a long list of testimonials on a single Web page — no one will read it! Instead, try these suggestions for getting the most out of this onsite marketing technique:

- Scatter the testimonials throughout the site.
- Judiciously select short phrases or single sentences that are relevant to the content of a particular page. Web media differs from print in that an online testimonial carries more punch when it's short and to the point.
- Break a long testimonial into several endorsements on different pages of the site.
- Consider rotating testimonials as part of your content update. You can do this manually or ask your developer to set up a quote database that posts a different testimonial every day or every time your site is accessed. Testimonials can be effective on almost any site, as long as you don't overuse them.

Soliciting product reviews

Some people prefer to believe that they make rational purchasing decisions rather than emotional ones. For these buyers, product reviews from a third party offer a perceived objective rating. Sometimes, you can get reviews by submitting your products or services to magazines, trade journals, or other press outlets. Or you can include your site for a fee on comparison shopping engines such as BizRate (`www.bizrate.com`) to solicit reviews.

If you're confident in your products, open your site to ratings from customers by including a link such as Review This Product. If you solicit ratings from customers, don't post only the good ones. If all reviews are uniformly excellent, viewers won't trust them.

Many sites that offer product reviews are actually distributors, rather than creators, so they face no risk. For instance, users rate movies on Netflix (`www.netflix.com`), and they can rate or review absolutely anything on Amazon.com (`www.amazon.com`). These large sites compile the results or reviews, as well as what other people rent or buy, to recommend new rentals and purchases based on what a viewer has already bought.

Incorporating Freebies and Fun

You can use the following onsite marketing techniques to attract new traffic to your site and to increase your ROI:

- **Coupons and discounts:** Bargains work both online and offline. All customers like to believe that they're getting a deal. Even though most coupons are never actually used, they improve branding and name recognition. The online execution of a discount occurs as a promotion code that users enter during the checkout process on your Web site, and customers can print out a coupon for use at your own or other brick-and-mortar stores. You need to figure how the cost of such discounts will affect your gross revenue and the average dollar value of a sale.

  

  Not all shopping carts can accept all forms of discounts. Ask your developer what your software can handle before you establish your discount plan. For instance, some sites can discount a total price by a flat dollar amount or percentage, but can't discount on a specific product. Some can't tie two purchases together to execute a complex instruction such as "Buy one at full price and get the second at half off." Some carts can't handle promotion codes at all.

- **Free:** Marketing's four-letter word. You can tie a free offer to another purchase, such as a two-for-one deal, or a product that's paired with a purchase, such as "Free socks when you buy shoes" or "Buy one shirt and get a second free." Or free can mean a separate promotional item shipped as a reward for taking an action, such as "Free bracelet when you sign up for our jewelry newsletter." In either case, remember to include in your marketing budget the cost of promotional goods and their differential shipping expense.

- **Online games and contests:** These games often carry an age and/or gender appeal. The right game matched to the right audience can result in significant traffic to your site and many repeat visits. For a game or contest to pay off beyond traffic, you might want to sell advertising on your site or provide another business rationale for the game. You can also tie the award, if any, to the audience. Many games don't include prizes, but most contests do. Some contests are games of skill (for example, trivia or

interactive contests); others, such as sweepstakes or drawings, are simple matters of luck.

Whenever you include a contest or sweepstakes on your site, be sure to include a detailed page of rules and legal disclaimers. Consult your attorney if you have questions; some states and provinces have very strict rules.

Using Web Analytics to Your Advantage

Web analytics is the art of using traffic and sales statistics to understand user behavior and improve the performance of your site. In the best of all possible worlds, analytics is part of a continuous spiral of feedback and quality improvement.

The basic principle "You can't manage what you don't measure" applies doubly to Web sites. You must know whether your site is losing or gaining traffic; whether visitors boogie away after less than a minute; or whether anyone is bothering to call, e-mail, or buy. Otherwise, you don't have a clue what problem you need to solve, let alone how to solve it.

Fortunately, computers are good at counting. In fact, that's what they do best. All sites need traffic statistics; if you sell online, you also need sales statistics. Unless you have a huge site, you need to pay attention to only a few key statistics.

Ask your developer or Web host which statistical packages are offered for your site. If your developer or Web host tells you that statistics aren't available or that you don't need them, find another developer, host, or storefront package.

Tracking the important stats

Of the many, many statistics that are available, the following key parameters provide valuable information for every business. Compare them by month or week, depending on the statistical package you use. Sites with heavy traffic justify review by day or even by hour.

Some packages might use slightly different terms but measure the same things. (These definitions apply to whichever time frame you choose.) Here are the key statistics to track:

- **Visits:** The number of distinct *user sessions* that take place (in other words, how many times your Web site is viewed) is your total traffic to the site. Stat packages might define a new visit after different time periods expire; many users go back and forth among Web sites several times.
- **Unique visitors:** The number of user sessions from different computers. (Stats can track users' IP addresses but not who's sitting at the machine.) This number is smaller than total visits; the difference represents repeat visits, which are extremely valuable. To assess your success in drawing people back to your site, you might want to track visits per visitor or repeat visits as a percent of all visits.
- **Page views:** The total number of distinct Web pages *downloaded* — that is, seen on the screen.
- **Page views per visit:** The number of pages seen divided by total visits. The more pages seen, the longer the user is on the site and the *stickier* your site is. If more than half your visitors leave before viewing two pages, you have a problem capturing viewers' attentions and interests. This key parameter correlates roughly to time on site. Time measurement can be misleading, however, because it doesn't take into account what happens if people leave a browser window open when they go to lunch or leave at the end of the day.
- **URLs viewed:** How many times each individual page of your site is viewed (downloaded). That way you know not only which pages are popular, but also which ones aren't. Some pages might get little traffic because of a lack of interest or perhaps a lack of contextual links or calls to action that pull someone to that page.
- **Referrers:** The Web sites or pages that generated a link to your site. Some statistical packages include links between onsite pages in this list. If you have an active inbound link campaign, you can easily see which links are driving traffic your way. You might also discover links from previously unknown sources.

- **Search engines:** Which search engines generated a link to your site based on your site's appearance in natural search results.
- **Conversion rate:** This number is calculated as a percentage. The denominator is total visits. You decide on the numerator, whether it's number of sales, contact forms, e-mails or calls generated from the site, newsletter subscribers, and so on.
- **Bounce rate:** The percentage of visitors who enter your site and immediately leave without visiting any other pages. This number tells you whether you need to make changes or updates to your site.
- **Search words:** Which search words directed visitors to your page.

Unless you have a very large site, monitoring statistics monthly or quarterly is usually sufficient. You might check more often when you first open your site and whenever you initiate a specific Web marketing activity.

You may also want to compare your site's traffic to that of your competitor's. You can find free tools available at sites such as `www.compete.com` that can help you see how your site stacks up against your competitors' sites.

Scanning other stats

The following statistics are less critical than the ones we discuss in the previous section but still helpful when you make decisions about your marketing program, site development, or timing of newsletters:

- **Time of day:** The time of day that people visit your site lets you know whether they're visiting from work or from home. Watch for a bulge around lunchtime, which is often a good time to release a newsletter. Unless you're publicizing your site locally only, your hours of use extend across time zones.
- **Day of week:** The days of the week also let you know patterns of use, from work or home. Anecdotal evidence shows shoppers browsing from home on weekends and buying on Monday from work. Compare your own patterns of traffic versus sales.

- **Browsers and OS:** Most statistical packages can identify a user's browser, version, and operating system. This information is valuable during development because you can infer some characteristics of your user base: The more current these items, the more likely your users also have faster Internet access and higher-resolution monitors. Let this information guide the features you include on your site and the screen size for which your site is optimized.
- **Length of visit:** Some analytics packages offer length or duration of visit in minutes and seconds. Set a goal to have more than half your visitors stay more than 30 seconds.
- **Search strings:** Also called *search terms,* these are the words that users enter into a search engine before they find your site. If these terms aren't already in your keyword list, add them. You might also want to use them in your keyword list for pay-per-click (PPC) ads. Some advanced packages analyze search strings by search engine. Different people use different search engines, and they often use different terms.
- **Countries:** Whether you're already shipping internationally or thinking about it, watch these statistics. They can indicate either your success penetrating another market or where interest exists.
- **Hosts or sites:** This is a list of host IP addresses of visitors to your site, sometimes sorted by state. If you're curious about an address that seems to generate many visits, you can find out to whom it belongs. This data is sometimes used to track someone hacking your site.
- **Entry pages:** Some packages display how users first arrived at your site. Although your home page is probably the most frequently used entry page, users might enter on other pages: from a bookmark, from a link provided by someone else, by clicking another URL that shows up in natural search engine results, by clicking a landing page URL in an ad, or by entering a promotion-specific URL that you created (so, you can quickly track entries from offline ads).
- **Exit pages:** The last page that users view can provide insight into when they've had enough of your site.