While copyright law is the most important intellectual property law for the Internet, you need to know enough about patent, trademark, and trade secret law to avoid infringing intellectual property rights owned by others and to be able to take advantage of the protection provided by these laws. These three intellectual property laws are discussed in this chapter.

In chapter 26, we discuss ways in which you can use these three laws and copyright law to protect your own material. Ownership of intellectual property is discussed in Chapter 3. Choosing product names is covered in chapter 15.

**PATENT LAW**

Patent law in the United States is based on a federal statute, the Patent Act. States are prohibited from granting protection similar to that provided by the Patent Act.

**Types of Works Protected**

Patent law protects inventions (utility patents) and ornamental designs for articles of manufacture (design patents).

Inventions protected by utility patents include any new and useful process, machine, manufacture, or composition of matter. Inventions can be electrical, mechanical, biotechnology or chemical in nature. Examples of inventions protected by utility patents are a microwave oven, genetically engineered bacteria for cleaning up oil spills, a computerized method of running cash management accounts, and a method for curing rubber.

Internet-related inventions protected by utility patents include communications protocols, data compression techniques, interfaces, networking methods, encryption techniques, interfaces, online payment systems, and
information processing and retrieval technologies. In the area of e-commerce, patentable inventions and processes include electronic postage, electronic cash, and e-commerce business methods (discussed later in this chapter).

Examples of manufactured articles protected by design patents are a design for the sole of running shoes, a design for sterling silver tableware, and a design for a water fountain.

Standards

There are strict requirements for granting utility patents and design patents. We'll discuss the requirements in this section.

Design Patents

To qualify for a design patent, a design must be new, original, and ornamental. Design patents are generally not suitable for protecting elements of Internet-related software processes. Design patents are considered rather narrow intellectual property protection because they are limited to the ornamental appearance of an article. Owners of design patents rarely sue to enforce their patents against infringers.

Utility Patents

To qualify for a utility patent, an invention must be new, useful, and "nonobvious."

To meet the novelty requirement, the invention must not have been known or used by others in this country before the applicant invented it, and it also must not have been patented or described in a printed publication in the U.S. or a foreign country more than one year before the application date. The philosophy behind the novelty requirement is that a patent is issued in exchange for the inventor's disclosure to the public of the details of his invention. If the inventor's work is not novel, the inventor is not adding to the public knowledge, so the inventor should not be granted a patent.

Meeting the useful requirement is easy for most inventions. An invention is useful if it can be applied to some beneficial use in society.

To meet the nonobvious requirement, the invention must be sufficiently different from existing technology and knowledge so that, at the time the invention was made, the invention as a whole would not have been obvious to
a person having ordinary skill in that field. This requirement makes sure patents are only granted for real advances, not for mere technical tinkering or modifications of existing inventions by skilled technicians.

First to Invent or First to File?

Who gets the patent if two inventors, working independently of each other, achieve patentable results around the same time? In the United States, the patent goes to the first person who invented the claimed subject matter (even if the first to invent was not the first to file a patent application). Only the U.S. has a first-to-invent system. In other countries, the first person who files a patent application gets the patent, even if he or she is not the first to invent the claimed subject matter.

It is difficult to obtain a utility patent. Even if the invention or process meets the requirements of novelty, utility, and nonobviousness, a patent will not be granted if the invention was patented or described in a printed publication in the U.S. or a foreign country more than one year before the application date, or if the invention was in public use or on sale in the U.S. for more than one year before the application date. This rule is known as the “statutory bar.” If you think your technology might be patentable, you should contact a patent attorney before you display or distribute your invention. The one-year grace period following disclosure of the invention is available only in the U.S. In most other countries, the patent application must be filed prior to any public disclosure of the invention.

“Printed Publications” on the Internet

In applying the statutory bar rule, material is considered a “printed publication” if it has been sufficiently accessible to that portion of the public interested in the particular field. Presumably, material made available on the Internet could count as a “printed publication.” Contact a patent attorney before publishing information about potentially patentable material on the Web.

Abstract ideas and mental conceptions are not patentable. Discoveries of scientific principles, laws of nature, and natural phenomena are not patentable (although applications of such discoveries are). Mathematical
algorithms that have not been reduced to some type of practical application have been held to be unpatentable. However, a claim to a system or method that recites a mathematical algorithm and produces “a useful, concrete and tangible result” may be patentable. *State Street Bank & Trust Co. v. Signature Financial Group*, 149 F3d 1368 (Fed Cir 1998), *cert. denied*, 525 US 1093 (1999). The software process involved in the *State Street Bank* case was used by a computer system to recompute the share prices of a pool of mutual funds after each day’s trading activities ended, taking into account the day’s gains and losses and expenses attributable to each mutual fund. The final share prices were the “useful, concrete and tangible result.”

Until recently, methods of transacting business were thought not to be patentable. However, in the *State Street Bank* case, the court made it clear that systems or methods which implement business methods are patentable if they meet the requirements of novelty, usefulness, and nonobviousness.

You’ve probably read about new patents being issued for Internet-related methods of doing business. Here are a few:

- CyberGold’s patent for a method that rewards customers who receive online ads
- Netcentives’ patent for rewarding online purchasers with airline frequent-flyer miles
- Priceline.com’s patent for reverse auctions
- Open Market’s patents related to secure online credit-card payments
- Amazon.com’s patents on “one-click” technology and affiliate programs

Some people think that business methods should not be patentable. In *State Street Bank*, the Court of Appeals for the Federal Circuit, which reviews all patent appeals, held that processes which are otherwise patentable subject matter are not rendered unpatentable because they involve business methods. The Supreme Court, by denying *certiorari*, declined to review the position taken by the Court of Appeals. Unless Congress amends the Patent Act, processes involving business methods are patentable. However, they must meet the stringent requirements for patent protection discussed earlier in this section. The Patent and Trademark Office is now subjecting business methods patents to a second-level review.
Procedure for Getting Protection

Patent protection is obtained by demonstrating in an application filed with the U.S. Patent and Trademark Office, www.uspto.gov, that the invention meets the stringent standards for grant of a patent. The patent application process is an expensive, time-consuming process (it generally takes at least two years). Although you can file a patent application yourself, the application process is complex. You should consider using an experienced patent attorney or patent agent (a nonlawyer who has passed the special patent bar exam given by the U.S. Patent and Trademark Office).

If you want to be able to claim “patent pending” status without undertaking the expense and paperwork involved in a regular patent application, consider filing a “provisional patent application” (PPA). A PPA remains in effect for one year. The PPA filing date can be used to prove that the invention described in the PPA document predates other inventions in the field.

Exclusive Rights

A patent owner has the right to exclude others from making, using, selling, offering to sell, or importing the patented invention or design in the United States during the term of the patent. Anyone who makes, uses, sells, offers to sell, or imports a patented invention or design within the United States during the term of the patent without permission from the patent owner is an infringer—even if he or she did not copy the patented invention or design or even know about it.

Example: Developer's staff members, working on their own, developed software for manipulating images in multimedia works. Although Developer's staff didn't know it, Inventor has a patent on that method of image manipulation. Developer's use of the software infringes Inventor's patent.

Duration

Under current law (effective June 8, 1995), utility patents are granted for a period of twenty years from the date the patent application was filed but in many countries you need to pay “maintenance fees” to keep the patent in
force.

**Example:** Amazon.com, Inc. was issued a patent on its affiliates program on February 22, 2000. The patent application was filed on June 27, 1997. The patent will expire in June 2017.

Under prior law, patent protection lasted seventeen years from the date the patent was issued. Under the current law, if a patent application is pending for longer than three years, the patent’s term can be extended to give the applicant seventeen years to enjoy the patent.

**Example:** Inventor filed a patent application on June 15, 1997. She was granted a patent on December 15, 2000. Her term can be extended so that her patent will not expire until December 2017.

The extension is available only if the delay is not the fault of the applicant.

For utility patents in existence prior to June 8, 1995, the patent term is the greater of seventeen years from the date of issue (the term under prior law) or twenty years from the application filing date. Design patents are granted for a period of fourteen years.

The patent application must contain a written description of the invention and how to make and use the invention in such complete terms as to enable others to make and use it. Once a patent is issued, this information—known as the disclosure—becomes available to the public, as do the patent’s “claims” (patentee’s defined legal rights). Once the patent on an invention or design has expired, anyone is free to make, use, or sell the invention or design.

The Patent and Trademark Office maintains a free online searchable database of U.S. patents issued since January 1, 1976 at [www.uspto.gov/patbib_index.html](http://www.uspto.gov/patbib_index.html). Google has compiled a free searchable database of US patents issued between 1790 and 2006 available at [www.google.com/patents](http://www.google.com/patents). Commercial services such as Micropatent ([www.micropatent.com](http://www.micropatent.com)) include pre-1971 patents in their databases. Patents may also be searched at Patent and
Trademark Depository Libraries located throughout the U.S. Information on the libraries is available at www.uspto.gov.

Sample Specification and Claim Language

The specifications section of Amazon.com’s affiliates program starts with this description: “The present invention provides a software system and method for enabling an Internet sales entity . . . to efficiently market and sell goods in cooperation with Web sites or other network sites of respective business partners, referred to herein as “associates.” The first claim starts this way: “A method of selling items with the assistance of associates, the method comprising: providing a Web site system that includes a browsable catalog of items and provides services for allowing customers to electronically purchase the items . . .” This patent is Patent 6,029,141, “Internet-based customer referral system.”

While most countries publish patent applications, Congress has only recently changed the U.S. Patent Act to allow the Patent and Trademark Office to publish patent applications. Effective November 29, 2000, the Patent and Trademark Office will publish patent applications eighteen months after they are filed, unless the applicant certifies that foreign patent protection is not being sought in a country that requires publication of applications eighteen months after filing. The publication provision does not apply to applications for design patents.

Limitations on Exclusive Rights

There are two major limitations on the patent owner’s exclusive rights. They are discussed in this section.

Functionally Equivalent Products

A patent owner can exclude others from making, using, or selling products or using processes that do substantially the same work as the patented invention in substantially the same manner. However, a patent does not protect the patent owner from competition from functionally equivalent products or processes that work in different ways.
Example: Microco owns a patent covering a laser printer. While Microco can prevent others from making, using, or selling laser printers that work in substantially the same manner as Microco's printer, it cannot prevent others from making, using, or selling laser printers that operate in a different manner.

Invalidation
The validity of an issued patent is subject to challenge in an infringement proceeding or a re-examination proceeding. Defendants in infringement suits usually raise the defense of patent invalidity, asserting that the invention covered by the patent was not novel or nonobvious. It is not unusual for a patent infringement suit to result in a determination that the U.S. Patent and Trademark Office made a mistake in granting the patent.

Patent Validity
Patent invalidity is certain to be an issue in infringement suits to enforce e-commerce business methods patents. For example, when Amazon.com sued Barnesandnoble.com for infringing Amazon’s “One-Click Shopping” patent, Barnesandnoble.com’s defenses included patent invalidity. Barnesandnoble.com maintained that One-Click Shopping was not novel or nonobvious—and that the patent examiner who granted the patent to Amazon.com would have realized that had the examiner had all the relevant “prior art” available to him when he reviewed Amazon’s patent application.

Avoiding Infringement
New Internet-related and e-commerce patents are being granted in record numbers. If you learn of a patent and are concerned that your operations may infringe it, get advice from a patent attorney.

Consulting a patent attorney is particularly important if your potentially infringing operations are still in the planning stages. Based on the legal advice you receive, you may decide to modify your operations to avoid infringement—or you may decide to get a license from the patent owner. Avoid investing more money or time in
your plans until you get legal advice.

If you learn that a patent has recently been granted on a method of doing business you are already using, you may have an “early inventor” defense (also known as a “first inventor” defense). The early inventor defense was added to the Patent Act in late 1999, after the State Street Bank case (discussed earlier in this section) was decided. Prior to that decision, business methods were thought not to be patentable. Now thousands of business methods patent applications are being filed. The early inventor defense, applicable only to business methods patents, is a complete defense to infringement for those who meet two requirements:

- Commercially used the subject matter covered in the patent prior to the patentee’s patent application date.
- Acting in good faith, “reduced the subject matter to practice” (executed the invention) at least one year before the patentee’s application filing date.

“Submarine patents” have long been a concern in fast-moving fields. A submarine patent is one that remains secret until it is issued, by which time competitors and other companies have made substantial investments to use the technology covered by the new patent. There is nothing you can do to eliminate the risk of submarine patents. However, the fact that many patent applications will now be published eighteen months after they are filed helps to reduce the risk.

If you are concerned that someone else is going to apply for a patent on a business method they and you are already using on the Internet, take comfort in the statutory bar mentioned earlier in this section. No patent can be granted on an invention that was in public use or on sale in the U.S. for more than one year prior to the patent application date.

Trademark Law
Trademarks and service marks are words, names, symbols, or devices used by manufacturers of goods and providers of services to identify their goods and services, and to distinguish their goods and services from goods manufactured and sold by others.

**Example:** The trademark *FrontPage* is used by Microsoft Corporation to identify the company's Web development software and to distinguish its software from other vendors' Web development software.

For ease of expression, we will use "trademark” in this book to refer to both trademarks (used on goods) and service marks (used for services).

For trademarks used in commerce, federal trademark protection is available under the federal trademark statute, the Lanham Act. Many states have trademark registration statutes that resemble the Lanham Act, and all states protect unregistered trademarks under the common law (nonstatutory law) of trademarks.

**Types of Works Protected**

Examples of words used as trademarks are *Kodak* for cameras and *Burger King* for restaurant services. Examples of slogans used as trademarks are *Fly the Friendly Skies of United* for airline services and *Get a Piece of the Rock* for insurance services. Examples of characters used as trademarks are Pillsbury’s Dough Boy for baked goods and Aunt Jemima for breakfast foods.

Sounds can be used as trademarks, such as the jingle used by National Public Radio. Product shapes and configurations—for example, the distinctively shaped bottle used for Coca-Cola—can also serve as trademarks.

**Standards**

Trademark protection is available for words, names, symbols, or devices that are capable of distinguishing the owner's goods or services from the goods or services of others. A trademark that merely describes a class of goods
rather than distinguishing the trademark owner's goods from goods provided by others is not protectible.

**Example:** The word "corn flakes" is not protectible as a trademark for cereal because that term describes a type of cereal that is sold by a number of cereal manufacturers rather than distinguishing one cereal manufacturer's goods.

A trademark that resembles a trademark already in use in the U.S. so closely that it is likely to cause confusion or mistake is not protectible. Geographically descriptive marks—"Idaho" for potatoes grown in Idaho—are not protectible trademarks for products that originate in the geographical area (all Idaho potato growers should be able to use "Idaho" in connection with selling their potatoes). Geographically misdescriptive marks that are deceptive are not protectible.

**Example:** Hiromichi Wada, the owner of a Michigan leather goods shop, attempted to federally register the name *New York Ways Gallery* for leather goods. The Patent and Trademark Office refused to register the name because it thought the public would assume Wada’s goods were from New York. The Court of Appeals for the Federal Circuit upheld the Patent and Trademark Office’s decision. *In re Hiromichi Wada*, 194 F3d 1297 (Fed Cir 1999).

**Procedure for Getting Protection**

The most effective trademark protection is obtained by filing a trademark registration application in the Patent and Trademark Office, www.uspto.gov. Federal law also protects unregistered trademarks, but such protection is limited to the geographic area in which the mark is actually being used.

**Federal Protection**

Federal registration is limited to trademarks used in interstate commerce (or intended for use in interstate commerce). Before November 1989, a trademark application could be filed only after the trademark's owner had actually used the trademark in commerce. Under current law, a person who has a "bona fide" intention to use a
A trademark in commerce may apply to register the trademark.

For federally registered marks, the use of notice of federal registration is optional. A federal registrant may give notice that his or her trademark is registered by displaying with the trademark the words "Registered in U.S. Patent and Trademark Office" or the symbol ®.

State Protection
State trademark protection under common law is obtained simply by adopting a trademark and using it in connection with goods or services. This protection is limited to the geographic area in which the trademark is actually being used.

State statutory protection is obtained by filing an application with the state trademark office. Those relying on state trademark law for protection cannot use the federal trademark registration symbol, but they can use the symbol tm (or, for a service mark, sm).

Domain Names as Trademarks
The mere registration of a domain name does not convey trademark rights. However, if you use your domain name to identify your goods or services—using it in ads for your e-commerce site, for example—it acquires trademark protection. This topic is discussed in “Choosing a Strong Trademark,” chapter 15. Domain name registration is discussed in chapter 16.

Exclusive Rights
Trademark law in general, whether federal or state, protects a trademark owner's commercial identity (goodwill, reputation, and investment in advertising) by giving the trademark owner the exclusive right to use the trademark on the type of goods or services for which the owner is using the trademark. Any person who uses a trademark in connection with goods or services in a way that is likely to cause confusion is an infringer. Trademark owners can obtain injunctions against the confusing use of their trademarks by others, and they can collect damages for
infringement.

**Example:** Distributed Learning Company is selling a line of interactive training products under the trademark *Personal Tutor*. If Giant Multimedia Company starts selling interactive training products under the name *Personal Tutor*, purchasers may think that Giant's products come from the same source as Distributed Learning’s products. Giant is infringing Distributed Learning’s trademark.

One of the most important benefits of federal registration of a trademark is the nationwide nature of the rights obtained. For the registrant, federal registration in effect reserves the right to start using the mark in new areas of the U.S.

**Example:** In March 1999, Small Multimedia Company, a California corporation, obtained a federal trademark registration on the trademark *Abra* for computer games. Small Multimedia did not begin using the trademark on computer games in New York until 2000. In September 1999, Giant Company started using *Abra* on computer games in New York. Because Small Multimedia's federal registration gives it a right to use *Abra* throughout the United States that is superior to Giant's right to use *Abra*, Small Multimedia can stop Giant from using *Abra* on computer games in New York—even though Giant started using *Abra* in New York before Small Multimedia did.

Other advantages of federal registration are discussed in "Trademark Protection," chapter 15.

A trademark owner's rights under state trademark law (and the rights of an unregistered trademark owner under federal law) are generally limited to the geographical area in which the owner has used the trademark.
Example: (For this example, we changed just one fact from the previous example.) Small Multimedia Company did not get a federal trademark registration. Now Giant's right to use *Abra* on computer games in New York is superior to Small Multimedia's right to use *Abra* on computer games in New York, because Giant was the first to actually use the trademark on computer games in New York.

Internet Use

In the last example, what if Small Multimedia Company, the first company to use *Abra* on computer games, sold its games on a Web site? People anywhere in the world could view the Web site. Does that mean that Small Multimedia was using *Abra* throughout the world? We don't know the answer. It is unclear how the above rule would apply when a trademark is protected only under state or common law and is used on the Internet.

Duration

A certificate of federal trademark registration remains in effect for ten years, provided that an affidavit of continued use is filed in the sixth year. A federal registration may be renewed for any number of successive ten-year terms so long as the mark is still in use in commerce. The duration of state registrations varies from state to state. Common law rights endure so long as use of the trademark continues.

Limitations of Exclusive Rights

Trademark law does not give protection against use of the trademark that is unlikely to cause confusion, mistake, or deception among consumers, but dilution laws may provide such broader protection (see "Dilution," chapter 15).

Example: Western Software has a federal registration for the use of *Flap* on Web development tool software. If Giant Company starts using *Flap* on its desktop publishing software, Giant may be infringing Western Software's trademarks because consumers may think the desktop publishing software and the Web development tool software come from the same source. If Giant starts using *Flap* on fire extinguishers, though, Giant is probably not infringing
Western Software’s trademark. Consumers are unlikely to think that the Flap software and the Flap fire extinguishers come from the same source.

Avoiding Infringement

Tips on how to avoid trademark infringement in naming your products and services are in chapter 15. Tips on how to avoid trademark infringement when choosing domain names are in chapter 16. Rules for using trademarks owned by others are in chapter 24.

TRADE SECRET LAW

A trade secret is information of any type that is valuable to its owner, not generally known, and kept secret by the owner. Even negative information such as research options that have been explored and found to be worthless can be trade secrets.

Trade secrets are protected only under state law. The Uniform Trade Secrets Act, in effect in a number of states, defines trade secrets as "information, including a formula, pattern, compilation, program, device, method, technique, or process that derives independent economic value from not being generally known and not being readily ascertainable and is subject to reasonable efforts to maintain secrecy."

Types of Works Protected

The following types of technical and business information are examples of material that can be protected by trade secret law:

- Customer lists
- Designs
- Instructional methods
- Manufacturing processes
Document-tracking processes

Formulas for producing products

Inventions and processes that are not patentable can be protected under trade secret law. Patent applicants generally rely on trade secret law to protect their inventions while the patent applications are pending.

Standards

Six factors are generally used to determine whether material is a trade secret:

The extent to which the information is known outside the claimant's business.
The extent to which the information is known by the claimant's employees.
The extent of measures taken by the claimant to guard the secrecy of the information.
The value of the information to the claimant and the claimant's competitors.
The amount of effort or money expended by the claimant in developing the information.
The ease with which the information could be acquired by others.

Information has value if it gives rise to actual or potential commercial advantage for the owner of the information. Although a trade secret need not be unique in the patent law sense, information that is generally known is not protected under trade secret law.

Procedure for Getting Protection

Trade secret protection attaches automatically when information of value to the owner is kept secret by the owner.

Exclusive Rights

A trade secret owner has the right to keep others from misappropriating and using the trade secret. Sometimes the misappropriation is a result of industrial espionage. Many trade secret case defendants are people who have taken their former employers' trade secrets for use in new businesses, or new employers of such people.
Trade secret protection endures so long as the requirements for protection—generally, value to the owner and secrecy—continue to be met. The protection is lost if the owner fails to take reasonable steps to keep the information secret.

**Example:** After Sam discovered a new method for manipulating images in multimedia works, he demonstrated his new method to a number of other developers at a multimedia conference without requiring the developers to sign nondisclosure agreements. Sam lost his trade secret protection for the image manipulation method because he failed to keep his method secret.

**Limitations on Exclusive Rights**

Trade secret owners have recourse only against misappropriation. Discovery of protected information through independent research or reverse engineering (taking a product apart to see how it works) is not misappropriation. However, many software license agreements prohibit reverse engineering. This topic is discussed in “When You Don’t Need a License,” chapter 9.

**Federal Criminal Trade Secret Law**

The Economic Espionage Act of 1996 (EEA) makes stealing or knowingly buying trade secrets a criminal offense punishable by a fine of up to $250,000, imprisonment of up to fifteen years, or both. The EEA provides higher penalties for stealing or knowingly buying trade secrets for the benefit of a foreign government or agent.

**Avoiding Infringement**

To avoid infringing trade secrets, you should avoid using valuable confidential business and technical information you acquired while working for a former employer. When you hire someone to perform exactly the same duties he or she used to perform for another company, you run the risk of being sued for trade secret infringement. An individual is allowed to carry general knowledge or skill from one job to the next. Drawing the line between general knowledge or skill and protected trade secrets belonging to the former employer can be difficult. Consider
consulting an experienced attorney if you need to make this distinction.

Customer Contacts List

Haber worked in sales at North Atlantic Instruments. He left North Atlantic and joined Apex Signal Corporation, where he immediately began calling the customer contacts he had developed and used while working at North Atlantic. North Atlantic sued for trade secret misappropriations and won. The customer contact list was held to be a trade secret belonging to North Atlantic because North Atlantic had taken appropriate steps to keep the information secret. *North Atlantic Instruments v. Haber*, 188 F3d 38 (2d Cir 1999).

**INTERNATIONAL PROTECTION**

To obtain patent, trademark, and trade secret protection in another country, you must comply with that country’s requirements for obtaining protection. For these intellectual property rights, there are no international conventions that provide automatic protection for U.S. rights owners. However, the World Intellectual Property Organization has proposed a Patent Law Treaty which will, if adopted, simplify the filing of multi-country patent applications.

Some inventors file patent applications in other countries simultaneously with the U.S. filing. The Paris Convention and the Patent Cooperation Treaty allow an inventor who files a patent application in the U.S. to delay filing in member countries based on the earlier U.S. application date. The European Patent Convention offers a way to file a single patent application for a patent which will be valid in 17 European countries. The European Community Trademark system provides a centralized procedure for obtaining trademark rights in European Community countries. The Madrid Protocol permits United States trademark owners to obtain trademark rights in a number of countries by filing a single application.

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Source Initiative and he chaired one of the four committees which reviewed the new version of the GPL. He has a blog at http://lawandlifesiliconvalley.blogspot.com/ which frequently deals with open source issues and his contributions to the open source industry have been recognized in the press http://www.theregister.co.uk/2007/08/30/open_source_mark_radcliffe/.