MAKE AN IMPACT ONLINE USING WEB DESIGN SERVICES

In today's Internet economy, a company must have a web presence to be successful. A well-designed website will attract customers, promote products and provide a way for customers to communicate with your company. Most businesses recognize that having a website is critical for the growth of their organizations.

A well-designed website helps you get more clients and provides your firm with the ability to project a professional image. A poorly designed site may be difficult for customers to navigate, may not function the way you need it to, and may project a poor image or reputation of your firm. An important component of website design is determining the kind of image you wish to put forth. Color, aesthetics and content all play critical roles in consumer response.

Outsourcing your company's website design, development or management, can offer many advantages in addition to the most obvious – cost savings. Considering the expense associated with hiring and/or training internal talent, including the high level of expertise required to carry out typically complicated functions, it is no wonder that web development is one of the most commonly outsourced business services today.

One disadvantage to outsourcing your website development needs is contracting with a provider who turns out not to be such a great fit with your company or your online needs or plans. Rapid advancements in web technology can make it increasingly difficult for businesses to know exactly what to expect from a web development provider and what constitutes excellent service.

The criteria for determining a provider's qualifications can seem endless, and it can be difficult to know which factors should be given the most consideration. This guide is designed to help you weigh the most important factors and select the best provider for your business.

How to Select a Website Designer

It is important to educate yourself about how a good website looks and functions - even though you are not designing it yourself. With the variety of choices in companies and freelance designers, how do you choose? First, consider the following factors:

- **Design Portfolio:** The vendor should have a design portfolio that represents your aesthetic tastes. Some designers may only understand a few website formats, which are similar in appearance to a blog. Other designers have certain styles such as techie, corporate, artsy, mom-and-pop, etc. Make sure that you like the work in a designer's portfolio and it matches your needs before agreeing to work with them.

- **Price:** There can be a huge difference in the price of website design and development. Factors like experience, technological abilities and client base are considerations. Also, will you do any of the work yourself? Always put out a Request for Proposal (RFP) in order to analyze the options that are available to you.

- **References:** Whenever you hire a vendor, you must check references! Make sure that the web design company actually has live websites in their portfolio. When you call references, ask questions like: Did their website design vendor deliver the site as expected? What are the company's strengths and weaknesses? Would you use them again? How was the follow-up after the launch of the site and were errors quickly corrected? Was their company easy to work with?

- **Technology:** Web design firms have different technological abilities and specialties. Create a list of all of the things you'd like to have on your site (e-commerce, login, blog, RSS feeds) and address their abilities and any additional pricing for these features.

- **Customer Relations:** It's important that you're comfortable communicating with your designers and that they are responsive. If you choose to work with a team that is not local, the team should share files and progress updates efficiently and quickly. If you prefer a local company, make sure that they understand that they will need to make site visits to your office or meet with you at their office. Be ready to address problems quickly and professionally to ensure that your project is successful.

Understanding the importance of your online presence, you need to be very selective with the web design firm you contract with.

Why Outsource?

Although tighter company budgets have been a driving force in the recent surge in outsourcing, a recent survey by Gartner found that 85 percent of companies plan to increase or maintain their use of external service providers even after the economy has improved.

Outsourcing your technology requirements allows you to pay only for the specific services you need; this will often allow you to afford higher quality services. This factor alone can increase your bottom line by stretching your budget and enhancing productivity. Data network operations

Offshore vs. Onshore Outsourcing

Another decision you will face when choosing an outsourced web development provider is whether to use an offshore or onshore vendor. While there is no definitive answer to this question, there are several factors to consider and it is up to each company to decide what is best for their own organization's needs.

Offshore It is becoming increasingly common for U.S. businesses to outsource their website development needs to other countries such as China or India, due to cost advantages and lower labor costs in these countries. This practice is also referred to as global sourcing. Technology providers located overseas can produce excellent work for a fraction of the cost of hiring an web design team in a major U.S. city.

It's important to note, however, that cost is not the only consideration and there may be hidden expenses involved in using an offshore provider. Time zone variance and lack of proximity to your company's headquarters can make project management more difficult. Language and cultural differences can also be barriers to effective team management. One of the best ways to deal with these challenges is to send an experienced and reliable member of your team to oversee the launch of the offshore team.

Bear in mind that some of your initial savings may be consumed by travel expenses. Recent research by Gartner estimates that when hidden expenses and other factors are taken into consideration, the true savings most companies realize from using an offshore web design provider work out to be about 25 percent.

Another factor to note is that the U.S. has strict laws which protect intellectual property rights. In some countries such as China and Latin America, however, major concerns exist regarding the enforcement of intellectual property laws.

Onshore Many U.S. based web design providers are located in a region in the country where the cost of living, and therefore the cost of labor, is lower than in major cities such as New York and San Francisco. Most of the developers who work for these companies have been trained in the U.S. and are accustomed to the U.S. business culture, which can be a real advantage when communicating your business objectives with your team.

Of course your travel expenses will be reduced, and the centralized location will make it easier to work closely with your team. Additionally, most onshore resources have a streamlined development strategy that enables them to complete projects more quickly and efficiently than many offshore centers.

Most companies who choose an onshore website developer are pleased with the results, as revealed in a recent global outsourcing study by Diamond Cluster International in which 81 percent of participants reported that they were satisfied with their onshore outsourcing results. This reflected a 7 percent increase over the previous year.

Whether you choose an onshore or offshore provider, there are several steps your company can take to help ensure successful outsourcing:

- Present senior executives with a strong case supporting the decision to outsource.
- Gain a thorough knowledge of your existing website operations and decide exactly what your goals will be in contracting external services.
- Know and understand the costs involved with your existing service so you have an accurate point of comparison when evaluating the pricing model offered by the service providers you are considering.
- Evaluate which type of web design service will be best suited to meet your objectives.
- Know the details of third party licenses and contracts to ensure these allow use by your service provider.
- During contract negotiation agree on and prepare a comprehensive transfer procedure enabling the outsourced services to be seamlessly transferred back to you or onto a different service provider at the termination of the contract.
- Be prepared to legally negotiate the details of the outsourcing contract and have the terms documented in the services agreement.

Four Mistakes to Avoid When Choosing a Website Design Service Provider

1. **Making your choice based on price alone.**
   Some web design service providers may have a substantial amount of overhead in terms of products, leases, labor costs and continuing education. So while cost may be a consideration for you, bear in mind that if a provider's prices are extremely low, it is likely they are cutting costs somewhere, and their quality of service may suffer. A good provider will use quality products and employ highly skilled technicians with thorough and up-to-date training.

2. **Choosing a provider who does not offer a service guarantee.**
   Any reputable web design service business will guarantee all of their services as a standard practice. If a problem remains after your system has been serviced, the technicians should return, free of charge, to resolve the issue. Contracting with a provider who guarantees their work will eliminate any risk on your part; you know they will provide quality service and will communicate with you to ensure your satisfaction.

3. **Not inquiring about the training and background of the company's employees.**
   Your website is a vital part of your business. Don't be afraid to ask a web design service provider what type of certification, continuing education and experience their employees have. Since you will be putting your company's sensitive data in their hands, the provider should also provide you with a clearly written ethics policy to ensure they will take every precaution in protecting your data.

4. **Not asking for samples of the company's work.**
   A good web development services provider will gladly show you examples and case studies of their past work. If they don't have any available, ask for references and testimonials from other clients. The provider should be willing to let you call their references to ask about the quality of service the company provided.

Questions You Should Ask When Choosing a Web Design Service Provider

Good communication is an important part of selecting the best web or IT service company for your organization. Here are a few key questions to ask about any provider you are considering:

- **Will the provider spend time with you to understand your company's needs?**
  A web services provider who is interested in doing business with you should be willing to take the time to explain their services in terms you can understand.
- **What are the web provider's qualifications?**
  Most qualified vendors and their team hold degrees in computer software technology. Be sure to look beyond their certificates, however, and inquire as to the extent of the provider's real-world experience.

- **How many years has the company been in business?**
  A provider with several years of experience will know to handle older machines and software and be able to provide effective solutions when upgrading your existing website with the latest features and applications.
- **Does the provider have experience in your particular industry?**
  It's best to choose a provider who has a wide range of experience, but finding a vendor with experience in your industry is definitely a plus.
- **Does the vendor guarantee a reasonable response time?**
  Excess downtime can result in considerable expense to your business so you should be able to rely on your provider to show up with a reasonable length of time.
- **Does the provider have experience working with your type of system?**
  You will want someone who can provide unbiased analysis and service regardless of the type of computer system or website features your company uses or wishes to deploy.
- **Will the provider help you calculate and budget your expenditures?**
  Many providers have access to a wide variety of suppliers will pass any savings on to you. The vendor should be able to customize a plan that works within your budget.
- **Will the provider maintain contact with you and keep you informed?**
  A good web design provider will keep you abreast of any changes implemented within your system.
- **Does your provider understand how crucial continuity of service is to the success of your organization?**
  Occasional downtime is inevitable but your website development provider should do their utmost to keep your business up and running 99.9% of the time.
- **How well will the web design team interact with your managers and other employees within your company?**
  This is especially important if the provider will be training your employees in the use of newly deployed applications.

Three Key Attributes to Look for in a Web or IT Services Provider

1. **Flexibility** – This is one of the most important qualities a web design outsourcing company can have. A good provider will be willing to work with you to customize a plan based on the pricing and specific services you need. A small business, for example, may prefer to be billed on hourly basis, but a larger organization whose system supports many users may find it more cost effective to have unlimited service and maintenance with a fixed monthly fee.

2. **Responsiveness** – Down time due to technical problems costs your company more money with each passing moment. A major advantage of having a team of professionals at your disposal is their ability to respond quickly to any issues that arise. A provider should be able to clearly lay out their standards for responsiveness, and you should be able to expect them to meet those standards consistently.

3. **A Personal Relationship** – When using the services of an external website development provider, think of that company as a partner, rather than a vendor. This type of relationship will help your provider gain a thorough understanding of your business, which will help make their efforts and results much more effective for you.

Glossary

(Courtesy of ComputerUser.com)

Antivirus program or software
A program that will detect and remove computer viruses.

Application programs
Programs used directly by the end user, such as word processing and appointment scheduling.

Archival backup
1. A routine that makes it possible to back up only the files that have changed since the last backup, instead of backing up every file. Archival backup saves time and storage space. 2. A backup that will be stored for a longer period of time.

ASP
Application Service Provider. A third-party software distribution and/or management service. Generally provides software via a wide area network from a centralized data center. Allows companies to outsource and more efficiently upgrade software.

Automatic postback
A function of computer software that receives Electronic Remittance Advice from an insurance carrier and automatically posts the payments and adjustments and may queue secondary insurance claims or may mark them as crossed over. Also called automatic remittance.

Automatic remittance
A function of computer software that receives Electronic Remittance Advice from an insurance carrier and automatically posts the payments and adjustments and may queue secondary insurance claims or may mark them as crossed over. Sometimes called automatic postback.

Browser
A client program that allows users to read hypertext documents on the World Wide Web and navigate between them. Examples are Netscape Navigator, Lynx, and Microsoft Internet Explorer. Browsers can be text-based or graphic.

Cable modem
A cable modem is an external device that connects to the computer, and instead of getting an Internet connection through a telephone wire (or another system), the connection comes through a cable network (the same as that used for cable TV connections).

Capitation
An arrangement between the practice or provider and an insurer in which the insurer pays the practice or provider a certain amount of money per patient for a certain time period to cover the medical needs for a population of patients covered by the insurer. All procedures may be included in the capitation arrangement or only a specific list of procedures may be included with any others being fee for service.

***CD** – Compact Disk*
A small platter on which computer data can be stored and read.

***CD-ROM** – Compact Disk Read Only Memory*
An optical disc that is physically the same as an audio CD, but contains computer data. Storage capacity is about 680 megabytes. CD-ROMs are interchangeable between different types of computers.

CD-ROM drive
A disk drive that reads CD-ROMs and audio CDs. It may be installed in the computer or removable. Recordable CD-ROM drives can also record onto the CDs.

Client
The computer in a client/server architecture that requests files or services. The computer that provides services is called the server. The client may request file transfer, remote logins, printing, or other available services. The client also means the software that makes the connection possible.

Client/server
An architecture in which one computer can get information from another. The client is the computer that asks for access to data, software, or services. The server, which can be anything from a personal computer to a mainframe, supplies the requested data or services for the client.

Client/server network
A network in which one or more computers are servers, and the others are clients, as opposed to a peer-to-peer network, in which any node can be a client and server.

Cluster control unit
A device that manages the input and output of several devices. For example, a cluster control unit may control several disk drives connected to a main computer.

Coaxial cable
A cable consisting of a single conductor which is surrounded by insulation and a conductive shield. The shield usually is connected to an electrical ground and prevents the cable from picking up or emitting electrical noise. Coaxial cables are used in communications.

Computer cabling
Wires that connect peripherals to the servers, hubs, switches, modems, and routers within a building. A combination of cables, wire, cords and connecting hardware used in the telecommunications infrastructure.

Computer hardware
The hardware is the physical part of a computer system; the machinery and equipment.

CPR system - Computerized Patient Records system
Charting medical records via computer. Also called EHR and EMR.

Cross connection
A connection scheme between cabling runs, subsystems and equipment using patch cords or jumpers that attach to connection hardware on each end.

***DAT** – Digital Audio Tape*
A kind of magnetic tape originally designed for audio format, now also used in computers to back up data. DAT cassettes are about the size of audiocassettes and can store up to 24GB.

Disk cache
A section of RAM that provides a cache between the disk and the CPU. It enables the computer to operate faster. Retrieving data from the hard disk can be slow; a disk caching program or disk caching controller helps solve this problem by placing recently accessed data in the disk cache. Next time that data is needed, it may already be available in the disk cache; otherwise a time-consuming search of the hard disk is necessary.

Disk caching controller
A computer card which determines how data is read, written and stored for speed of access.

Disk drive
A fast storage device for computers containing spinning platters on which data is stored.

Disk drive array
Multiple disk drives which store data either for speed of access or for redundancy.

Distributor
A facility enabling the termination of cables as well as their interconnection or cross-connection with other cabling or equipment.

DLT *– Digital Linear Tape*
A type of 1/2" wide magnetic tape used for backup. One of the fastest backup methods that can backup very large amounts of data very quickly. Used mainly on larger system configurations.

Dumb terminal
Computer-like device that includes a screen and a keyboard for both display and input. It connects to the server. It is called “dumb” because it can do very little on its own. It is not a computer by itself. The programs it “runs” are located on the server. Also called a terminal.

EHR system *– Electronic Health Records system*
Charting medical records via computer. Also called CPR and EMR.

Electrical surge protection
A device that keeps computer hardware safe from electrical power excesses.

Electronic claims
Insurance claims that the computer system files either through a direct modem connection or through the Internet.

EMI *- Electrical Magnetic Interference*
Interference from electromagnetic waves that come from electrical and electronic devices. These forces can wreak havoc with computer cabling.

EMR system *– Electronic Medical Records system*
Charting medical records via computer. Also called CPR and EHR.

Enterprise network
A network for a large business enterprise. This kind of network may comprise a number of local area networks, which have to interface with each other as well as with a central database management system and many client workstations. The design and management of an enterprise network can be very complex.

***FFS** – Fee For Service*
A payment arrangement in which the provider is paid a fee for each service provided.

Fiber-optic cable
A cable that carries laser light, encoded with digital signals, rather than electrical energy. Made of thin fibers of glass, fiber-optic cables can transmit large amounts of data per second. Fiber-optic cables cannot be tapped by remote sensing equipment because they do not emit electromagnetic radiation.

Firewall
An electronic boundary that prevents unauthorized users from accessing certain files on a network; or, a computer used to maintain such a boundary.

***FRAD -** Frame Relay Access Device*
A combination of hardware and software that is used to convert communications packets from formats like TCP, SNA, IPX, and others into frames that
can then be sent over a frame relay network.

graphical browser
A browser that can display graphic images (pictures) in addition to text; examples are Netscape Navigator and Internet Explorer.

***GUI** - Graphical User Interface*
A type of screen display between the computer and the user in which pictures, drawings and text are used to help convey content instead of text only.

Hard disk
The main device that a computer uses to store information. Hard disks are rigid aluminum or glass disks about 3.5" in diameter in a personal computer and smaller in a laptop. They are coated with ferromagnetic material and rotate around a central axle. Data is transferred magnetically by a read/write head. A hard disk drive for a personal computer may contain as many as eight hard disks, rotating around the same axle. Most hard disks are permanently connected to the drive, but there are removable hard disks. Hard disk access time (the amount of time it takes to retrieve data) is measured in milliseconds.

Hardware
Computer equipment including servers, modems, workstations, terminals and printers.

Home-run cabling
A distribution method in which individual cables are run directly from the horizontal cross-connect to each telecommunications outlet. This configuration is also known as star topology.

Horizontal cabling
The cabling between and including the telecommunications outlet and the horizontal cross-connect.

Host
1. A computer connected to a network that provides data and services to other computers. Services may include data storage, file transfer, data processing, e-mail, bulletin board services, World Wide Web, etc. 2. A multi-user computer that has terminals attached to it.

HTML (*Hypertext Markup Language)*
Coding that is used to indicate how files should be displayed on the World Wide Web.

Hub
Equipment that serves as the centralized connection point for a network or portion thereof. Hubs are used for multiplexing, multi-port bridging functions, switching and test access. They can be either passive or active and are not considered to be part of the cabling infrastructure.

Incremental backup
Making a copy of only the files that have changed since the last backup, instead of backing up every file. Incremental backup saves a lot of time and can save storage space.

Intranet
A local area network, which may not be connected to the Internet, but which, has some similar functions. Some organizations set up World Wide Web servers on their own internal networks, so employees have access to the organization's Web documents.

Internet
The network connected around the world which allows users to send files, e-mails, and access all types of sites for information.

ISP *– Internet Service Provider*
Companies which offer users access to the Internet.

Jazz drive
A compact, removable-cartridge disk drive made by Iomega Corporation. A 540MB and a 1GB cartridge are available.

Knowledge base
The list of available symptoms and findings in Electronic Medical Records systems.

Live
Using your computer system while seeing patients in your normal routine.

Local area network *– LAN*
A network that connects computers that are close to each other, usually in the same building, linked by cables.

Modem
A peripheral device that connects computers to each other for sending communications via the telephone lines. The modem modulates the digital data of computers into analog signals to send over the telephone lines, then demodulates back into digital signals to be read by the computer on the other end; thus the name "modem" for modulator/demodulator. Modems are used for sending and receiving electronic mail, connecting to bulletin board systems, connecting remote offices, and surfing the Internet. There are standards to ensure that modems made by different manufacturers can communicate with each other. Modems communicating with each other must use the same speed.

Multiplexer *– (MUX)*
A hardware device that enables two or more signals to be transmitted over the same circuit by temporarily combining them into a single signal. On the receiving end, the signals are divided again by a demultiplexer.

Node
A computer in network.

Operating system
The program that runs behind the scenes on a computer. Application programs run on top of the operating system.

Packet
A unit of data formatted for transmission on a network. Data is broken up into packets for sending over a packet switching network. Each packet has a header containing its source and destination, a block of data content, and an error-checking code. All the data packets related to a message may not take the same route to get to their destination; they are reassembled once they have arrived.

Patch cord
A length of cable with connectors on one or both ends used to join telecommunications outlets/connectors.

Patch panel
Connecting hardware that typically provides means to connect horizontal or backbone cables to an arrangement of fixed connectors that may be accessed using patch cords or equipment cords to form cross-connections or interconnections.

PC *– Personal Computer.*

Peer-to-peer network
A communications network in which any computer on the network can be a client and/or a server. Any computer can access files on any other computer in the network.

Peripheral
Any piece of hardware connected to a computer; any part of the computer outside the CPU and working memory. Some examples of peripherals are keyboards, mice, monitors, printers, scanners, disk and tape drives, microphones, speakers, joysticks, plotters, and cameras. More common office peripherals are printers and modems.

Plenum
A compartment or chamber to which one or more air ducts are connected and that forms part of the air distribution system.2 Drop ceilings are commonly used as a plenum.

Power surge
A sudden rise of current or voltage in an electrical circuit that can last up to several seconds. A power surge can cause damage to a computer or its files if there is no surge protector.

Practice hosted system
A computer system where the server is located at the practice's office. Practice hosted systems are accessed through cables in the office or via telephone lines for satellite offices.

Practice management system
Computer programs that provide functions for the clerical, administrative and financial needs of a medical office.

RAID - *Redundant Arrays of Independent Disks (Originally "Redundant Arrays of Inexpensive Disks")*
The use of two or more disk drives instead of one disk, which provides better disk performance, error recovery, and fault tolerance, and includes interleaved storage techniques and mirroring of important data.

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Remote access concentrator
A remote access server that supports one or more T1/E1 lines. Remote access concentrators allow multiple ISDN and analog calls to come in over one port from the telephone company, allowing for higher call densities than remote access servers; they include dial-up protocols, authentication, and greater accessibility. See remote access server.

Remote access server *- RAS*
The host computer within a LAN that gives access to remote users using analog modems or ISDN connections via the host computer's modem. See also remote access concentrator.

Remotely hosted ASP
An ASP where the server is not located at the practice's office. Remotely hosted ASPs are usually accessed through the Internet.

***RFP** – Request for Proposal*
A list of questions sent to a vendor for his response. The response helps the sender gain information needed to make a decision on purchasing an item.

Robot or Spider
Special software used by search engines that crawls the web and pulls information from Web pages so they can be indexed.

Router
A device that finds the best path for a data packet to be sent from one network to another. A router stores and forwards electronic messages between networks, first determining all possible paths to the destination address and then picking the most expedient route, based on the traffic load and the number of hops. A router can be hardware or a combination of hardware and software.

Server
The computer in a client/server architecture that supplies files or services. The computer that requests services is called the client. The client may request file transfer, remote logins, printing, or other available services.

Software
Computer programs that tell a computer's hardware what to do. System software is the operating system that controls the basic functioning capabilities of the computer, network software enables multiple computers to communicate with one another, and language software is used to develop programs.

Spike
A sudden pulse of extra voltage, lasting a fraction of a second, which can cause the computer to crash and damage files or computer components if there is no surge protector on the line. A burst of extra voltage that lasts longer, perhaps several seconds, is called a surge.

***SPS** – Stand-by Power Supply*
An offline backup power supply system which automatically switches on in case of power failure.

Star topology
A method of cabling each telecommunications outlet/connector directly to a cross-connection in a horizontal cabling subsystem.

Surge
A sudden pulse of extra voltage, lasting a second or longer, which can cause the computer to crash and damage files or computer components if there is no surge protector on the line. A burst of extra voltage that lasts only a fraction of a second is called a spike.

Surge protector
An electrical device that protects a computer from spikes and surges in the power line. All computers have some surge protection built in, but this protection is not always enough. External surge protectors come in the form of a unit that plugs into the wall, with outlets for several electrical plugs. However, not all outlet bars have surge protection.

Switch
1. A communications device that controls the operation and routing of a signal path. 2. A circuit element which enables a device to be turned either on or off. 3. A networking device that can send packets directly to a port associated with a given network address.

Tags
An HTML code. The tags discussed in this article refer to HTML elements that allow the Web designer to supply search engines with extra information, such as key words associated with the site.

Tape backup
Using magnetic tape for archiving purposes. Half-inch tape, quarter-inch cartridges, and DAT tape are commonly used.

Telecommunications
The transmission of information over a communications line. Telecommunications can include use of a modem, fax, telephone line, etc. to send voice, data, text, images, or video over long distances. A common use of telecommunications is to connect remote office sites to the main office server.

Telecommunications outlet/connection
A fixed connecting device where the horizontal cable terminates. The telecommunications outlet provides the interface to the work area cabling. Patch cords are typically plugged into these outlets which then connect the computers. Phones are also plugged into these outlets.

Terminal
Computer-like device that includes a screen and a keyboard for both display and input. It connects to the server. It is called “dumb” because it can do very little on its own. It is not a computer by itself. The programs it “runs” are located on the server. Also called a dumb terminal.

Text-based browser
A browser that can only read text files, not images or multimedia.

Trojan horse
A program that appears to be useful and harmless but which has harmful side effects such as destroying data or breaking security on the system on which it is run. It is similar to a virus except that it does not propagate itself as a virus does.

Twisted pair cable
The type of cable used for most telephone wiring. It has pairs of copper wires twisted together to minimize electrical noise. There are shielded twisted pair (STP) and unshielded twisted pair (UTP) cables. In shielded twisted pair cables, each pair has a metal sheath around it for better protection against interference.

***UPS** – Uninterruptible Power Supply*
A backup power supply that works when electrical power to the computer is interrupted. A small UPS can supply battery power for a few minutes so files can be saved and the computer can be shut down properly; a larger UPS can supply power for much longer.

Virus
A program that infects a computer by attaching itself to another program, and propagating itself when that program is executed. A computer can become infected by files downloaded over a network, or by the installation of new software or floppy disks that are infected with viruses. Some viruses are only pranks, and perform harmless actions like displaying a screen with a joke message on it. Others can destroy files or wipe out a hard drive. To avoid damage from viruses, write-protect the boot disk and other important disks, check new software or disks for viruses, and have virus protection software installed on the computer at all times. Disinfectant programs must be updated periodically because new viruses get into circulation over time. There are some virus protection programs available on the Internet for free. Disinfectant for Macintosh, written by John Norstad of Northwestern University, is freeware; McAfee Anti-Virus for the PC is a shareware program. Knowingly spreading a computer virus is a crime punishable by law. See also Trojan horse and worm.

Virus protection program or software
See antivirus program or software.

Wide area network – WAN
A network in which computers are connected to each other over a long distance, using telephone lines and satellite communications. Contrast with local area network (LAN).

Workstation
A computer used by a worker that connects to the server. It may contain some programs that are not shared by other users, but it also can access programs and data from the server.

Worm
A computer program that can make copies of itself, and spreads through connected systems, using up resources in affected computers or causing other damage.

Zip drive
A 3.5" removable cartridge used with the Iomega Zip drive. Zip disks can store 25MB, 100MB or more, and are used to back up data or transfer data from one computer to another.