

The Business Manager's E-Business Glossary

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A

Acceptable Use Policy

A written agreement, that should be signed by employees, which sets out the permissible workplace uses of the internet. In addition to describing permissible uses, the policy should specifically set out prohibited uses, rules of online behavior, and access privileges. Penalties for violations of the policy, including security violations and vandalism of the system, should also be covered. Anyone using a company's internet connection should be required to sign an Acceptable Use Policy, and know that it will be kept on file as a legal, binding document. There are many reasons an employer may want to institute such a policy, for example to stop the internet being used as an entertainment facility during work hours or to prevent a drain on limited computer resources caused by frivolous use.

Active advert

A web advert that generates some form of graphical activity which, in turn, floats over the web page itself rather than opening in a separate window.

Active tag

An *RFID* tag that has a transmitter to send back information to a reader, rather than simply reflecting back a signal from the reader as a passive tag does. Most active tags use a battery to transmit a signal to a reader and have practical ranges of tens of metres, and a battery life of up to ten years. They are typically used for tracking expensive items over long ranges. See also *passive tag*.

ActiveX

Microsoft's open technology platform, comprising a set of object-oriented programming technologies and tools, that enable developers to build interactive e-commerce applications. ActiveX is Microsoft's answer to the Java technology from Sun Microsystems. An ActiveX control is roughly equivalent to a Java applet. However, the fact that ActiveX is run as a native code on the user's machine means that there are no restrictions on what the code can do. This has resulted in many *malware* attacks using it for their activation and propagation. Microsoft has recognised these problems and has addressed them in the later .NET platform.

ADSL (Asymmetric Digital Subscriber Line)

A standard for providing high bandwidth data and voice connection through existing copper telephone wires. It provides fast internet connection to homes and small businesses. It is asymmetric in that it uses most of the channel to transmit downstream to the user and only a small part to receive information from the user. Downstream rates are typically between 512 kilobits per second to about 6 megabits per second. This makes it particularly attractive for applications where customers expect to receive more data than they transmit, such as web access and the reception of digital audio-visual material.

Adware

Software that is integrated with a computer program and results in advertising banners being displayed when the program is run. However, adware can often go beyond the reasonable levels of advertising that might be expected from shareware and can take the form of *spyware*, as it may include code that tracks and reports upon the user's online activities.

AES (Advanced Encryption Standard)

A symmetric 128-bit block data *encryption* technique that the U.S. government adopted in October 2000, replacing the DES encryption technique it previously used. AES is based upon the Rijndael algorithm that was developed by two Belgian cryptographers, Joan Daemen and Vincent Rijmen.

Affiliates

A partnership between a host site and other web sites, whereby the affiliate sites assist the host site by promoting it and helping it to sell products. Many companies offer affiliate schemes as a way of generating both visitor traffic and sales, typically paying commission on the traffic they receive from links placed on the affiliate sites. Perhaps the best known affiliate scheme is that run by Amazon.

Affinity group

Term used to describe people with a common interest. On the web this may be a subject-oriented mailing list, a newsgroup, or a conference on a web site. In e-business such groups can represent attractive options for highly targeted e-marketing campaigns.

Agent

A type of software program that is instructed to go out onto the internet and perform a requested function on behalf of the user. Examples include identifying specific updates on web sites or searching for specified information (for example the lowest price on something you want to buy such as a book).

Aggregation

The gathering of products from multiple suppliers so that the customer can have more choices from the convenience of a single location. Examples in e-business include shopping agents who bring together products from multiple manufacturers in a virtual environment and display the results of a customer's search in a neatly arranged table with comparative product information and direct links to the manufacturers' individual websites.

Ajax

Ajax, which stands for 'Asynchronous JavaScript and XML', is an approach to using existing web-based application tools. An Ajax-based application uses standards (XHTML and CSS), undertakes data interchange and manipulation using XML and XSLT, and uses JavaScript to bind everything together. The key benefit of an Ajax-based application is that the web page does not have to be refreshed from the server in response to each of the user's interactions with it. Consequently, there are far fewer HTTP requests to the server, so the application responds far more quickly.

Apache

One of the most widely used of all Open Source products. Developed in early 1995, Apache is a freely available web server that runs on most Unix-based operating systems. It is estimated that some 60% of all web sites on the internet are using Apache, making it more widely used than all other web servers combined.

Its name comes from 'A PAtCHy server', since it is based on existing codes and a series of patch files. For more information on the latest developments, visit the web site www.apache.org

Applet

Small applications, written in Java, that are intended for use within a web browser and cannot be run as stand alone applications. Typically applets extend the capabilities of the browser or provide web site-specific functionality. All up-to-date web browsers contain Java interpreters, which enable web sites to use applets in a very flexible fashion. Many web site designers extend the impact of their sites by adding such applets.

ASD (Agile Software Development)

A methodology for undertaking software development projects. Agile software development focuses on keeping code simple, testing often, and delivering functional bits of the application as soon as they are ready. The software is developed in short timeboxes referred to as iterations, with each iteration building small client-approved parts as the project progresses.

ASP (Active Server Page)

A scripting language for programming a web site, where the programming is executed by the web server and not the browser. This gives increased performance and allows for the creation of dynamic forms which can return informative feedback to the web site visitor as well as enabling the site to be customised depending upon who is viewing it.

ASP (Application Service Provider)

A company that provides software application capabilities to individuals or enterprises on a rental basis according to a service level agreement. The service is delivered on a one-to-many basis via a wide area network, usually an IP network. The ASP model can be differentiated from the facilities management model in that the ASP never operates on the client's premises; services are provided remotely and accessed online. The cost effectiveness of the ASP model is best highlighted where it delivers a custom business solution that meets the shared requirements of a set of customers operating in a particular industry sector and is able, therefore, to provide a solution that is less expensive than a one-to-one customised solution.

Attachment

File attached to an e-mail that may contain text, spreadsheets, audio data, pictures, animated graphics and video. Attachments should be encrypted in order to avoid viruses. Equally the use of e-mail attachments is a favoured method of maliciously spreading viruses. However it is not possible to be infected simply by reading a plain text e-mail, so good security policies should educate employees against opening attachments to unexpected mail items, or mail items on unexpected topics, whatever their apparent source.

Auction site

A web site that supports online auctions and subsequent payment for auction transactions. Auction sites provide similar services to the conventional auction rooms, with the major advantage that anyone in the world can be present in a 'virtual auction room'. The auction site acts as an intermediary, typically taking a commission on sales, with transactions taking place between the buyer and the seller. Auctions take place in both consumer to consumer and business to business environments (see [Reverse auction](#)). In a business to business environment, auctions should not be confused with [Exchanges](#).

Augmented reality

Term used to describe the concept of superimposing graphics, audio and other sense enhancements over a real-world environment in real-time. The components needed to achieve this are a head mounted display, a tracking system and mobile computing power. Augmented reality attempts to not only superimpose graphics over a real environment in real-time, but also change those graphics to accommodate a user's head- and eye- movements, so that the graphics always fit the perspective. It is still in an early stage of research and development at various universities and high-technology companies, with the first mass-marketed augmented reality system unlikely to be available until the end of this decade.

Authentication

A vital part in the process of verifying an e-business transaction. It may involve confirming the identity of a user attempting to access a system, ensuring that a cardholder is actually the person authorised to use the card, or verifying that a message or document does in fact come from the person who has claimed to send it.

Autoresponder

A facility that enables e-mail users to send automated responses when they are not able to respond personally to incoming e-mail. The autoresponse will usually explain that the recipient of the e-mail is out of the office and give the date when they are expected back in the office.

Avatar

Commonly used in chat rooms and web forums, an avatar is a graphic illustration or visual 'handle' that the user chooses to represent themselves when posting messages. The intention is to give the user some form of identity and make the virtual environment a friendlier place.

B

B2B

An acronym for the business to business model for e-commerce, which incorporates the networking of businesses and their respective suppliers to exchange information, execute orders and obtain supplies. EDI, offering the structured exchange of trade data, was the forerunner of the current B2B models and still plays an important role in many industry sectors.

B2C

An acronym for the business to consumer model for e-commerce, where products and services are marketed to the end consumer. In turn it is the individual consumer who accesses a merchant's web site for the purpose of buying merchandise or requesting services.

B2E

Refers to business-to-employee, an approach in which the focus of business is the employee, rather than the consumer. It is frequently used to describe the B2E portal which is a customised home page and desktop for all employees within an organisation. It differs from the concept of an intranet in that its focus is on the employee's requirements rather than the organisation's. The B2E portal is designed to include not only all of the typical components of an intranet, but also the personal information and links that the employee will require. The intention is to increase not only efficiency, but also employee satisfaction and a sense of belonging within the organisation.

B2G

A variation of the **B2B** e-business model, that relates to business to government transactions. This can range from specific forms and services being made available to business from government web sites, through to formal e-procurement sites that provide information on departmental purchasing requirements and facilitate online tendering from businesses.

Backbone

The major pathway in a network that offers the highest possible speed and connects all major nodes. In internet terms they are the high-speed networks that carry internet traffic around the world. Internet Service Providers (ISPs) connect either directly to a backbone, or they connect to a larger ISP with a connection to a backbone.

Backdoor Trojan

A **Trojan Horse** program that provides a remote user or hacker with the means to bypass the normal access control of a computer and gives them unauthorised control over it. Typically a **virus** is used to place the Backdoor Trojan onto a computer, and it then monitors the computer's usage until it is connected to the Internet. Once the computer is online, the person who sent the Trojan can run programs on the infected computer, access personal files, modify and upload files, and send out spam mail.

Balanced scorecard

A management technique that enables an organisation to focus upon the important metrics that drive success. It translates an organisation's mission statement and overall business strategy into specific, quantifiable goals and monitors their performance in terms of achieving these goals. In order to achieve this, the balanced scorecard focuses upon organisational performance in four key areas – financial, customer, internal processes, and employee learning and growth.

Bandwidth

Describes the amount of data that can travel through the internet or a communications network in a specific period of time. This is usually measured in the amounts of data per second (e.g. megabits per second).

Cobwebhealer - the web can be simple!

Banner

Space on a web page used for advertisements by third parties. These are the long thin boxes with an advertising message in them. The majority are clickable – by clicking on them you are taken through to the advertiser's site. These are known as click throughs.

Barnacle

A generic term used to describe data collection or advertising software that is downloaded or installed unintentionally without the computer user's knowledge. Barnacles can have a detrimental effect on the computer's performance and can be very difficult to uninstall. The term comes from the marine crustacean that attaches itself to rocks or ship bottoms. See also [adware](#) and [spyware](#).

Bastion host

The only host computer on a network that is outside the demilitarised zone (DMZ) and which can be addressed directly from the public network. Its role is to defend against attacks aimed at inside the network by minimising the chances of a security penetration.

Biometrics

Refers to technologies for measuring and analysing human body characteristics such as fingerprints, eye retinas and irises, voice patterns, facial patterns, and hand measurements. This analysis is usually carried out as part of an authentication processes and is likely to play an increasing role in e-business security. Fingerprint, facial, or other biometric data can be placed on a smartcard and users can present both the smartcard and their fingerprints or faces to merchants, banks, or telephones for an extra degree of authentication.

Bit

A single binary digit, the smallest unit of information that a computer can process, a '1' or a '0'. It is also the basic unit in digital communications.

BizTalk

BizTalk is an initiative headed by Microsoft, and supported by many other vendors, to develop a common data exchange language for e-business using the Extensible Markup Language ([XML](#)). The BizTalk group is promoting a common XML message passing architecture to tie e-business systems together. In order to assist in this the group is providing guidelines, known as the BizTalk framework, on how to publish schema in XML. For more information on Biztalk visit the web site at www.biztalk.org

Black hats

Skilled hackers who illegally use their abilities and knowledge of the vulnerabilities of IT systems for private gain. They seek to exploit these vulnerabilities rather than revealing them to either the general public or the manufacturer for correction. See also [white hats](#).

Blammer

Term that is short for 'blog spammer' and refers to someone who posts unwanted comments or [spam](#) to a [blog](#). Blammers take advantage of the 'comment' features that many blog users make available for constructive feedback, and frequently include links back to their own websites, with the intention of increasing traffic and raising their site's search engine rankings.

Blog

Short for weblog, a blog is a diary (or newsletter) that is posted on the Internet. This diary is updated regularly, commonly on a daily basis, and is intended for general public consumption. The blog is usually posted by an individual person, but is also increasingly used by companies to share current news and views.

Bluetooth

A technology which provides a short, reasonably capacious link between say, a mobile phone and a laptop. It is similar to the infrared links that already exist but it is not directional, is capable of discovering other Bluetooth devices and is able to automatically create small wireless LANs. The reach is about 10 metres. It is already included as part of the first Ericsson GPRS phone and many laptop suppliers are committed to its incorporation. It has many business applications, ranging from simple file transfer between PCs, to distribution of a slide show to all the members of a meeting, to wireless rail ticketing.

Boiler room scam

A type of investment fraud promoted over the telephone. This type of fraudulent telemarketing operation is run from a high pressure sales operations from which sales people call unsuspecting investors with the intention of persuading them to invest in worthless offshore trading ventures. Typical characteristics of a boiler room scam are high pressure sales tactics, outrageous promises of high profit at little or no risk, a demand for an immediate decision, and a reluctance to provide information about the sales firm or the investment.

Bookmark

Provides the ability for the internet user to define and save a list of their preferred web sites. The bookmark essentially consists of a list of saved links which enables the user to get quickly back to specific web sites and home pages without having to type in the whole URL. The sites bookmarked will usually be those accessed on a regular basis or those containing particularly valuable information that might prove useful in the future. Different browsers have variants on the bookmark concept with, for example, internet Explorer using the term 'favourite'.

Boot

Abbreviation of 'bootstrap', it is the term used to describe the process of starting up a computer. When the computer is switched on, it loads the operating system into its main memory or random access memory (RAM). Once this has been performed, the computer is then ready to run software applications. The instruction to 'reboot' simply means to reload the operating system.

Bot-infected computer

Bot is derived from the word 'robot' and is a program that operates as an agent for a user or another program. In addition to being used as *spiders* or *crawlers* on the Internet, bots can also be used to perform malicious activities, in particular as a launching pad for Distributed Denial-of-Service attacks. In such cases malicious software is installed on user's computer without their knowledge, and these bot-infected machines are able to pass the control of the machine to a remote attacker and act as per instructions from the attacker. Such computers are popularly known as *zombies*.

Bounced message

An e-mail that is returned to the sender because it was not delivered. The bounced e-mail will usually include a message explaining to the sender why the original e-mail was not deliverable. Examples can include the fact that the intended recipient is unknown to the ISP to which it was sent, the recipient's mailbox is over quota, or the e-mail address has been misspelled.

Broadband

A transmission medium capable of supporting a wide range of frequencies, typically from audio up to video frequencies. It can carry multiple signals by dividing the total capacity of the medium into multiple, independent bandwidth channels, where each channel operates only on a specific range of frequencies. One of the main attractions is the download speed – currently this can be up to 2MBps which is 40 times faster than a normal dial up connection and 30 times faster than 64KBps ISDN. A further benefit is that the connection is 'always on' giving unlimited internet access. Broadband access can be gained through a range of technologies. In the UK this is likely to be through cable or ADSL. The problem with ADSL is that until recently the connection had to be less than 3.5 km from a BT exchange, although technology has now extended this to 5.5 km. This has increased ADSL's reach in the UK to more than 90 per cent.

Brochureware

The act of putting a company's corporate literature in basic static form directly on to a web site. Because of the lack of any interaction with the visitor and the fact that the content has not been originally designed specifically for display on the web, it is generally not well received by visitors and is criticised by web designers.

BS 7799-1:2000

See [BS ISO/IEC 17799:2005](#)

BS ISO/IEC 17799:2005

Code of practice for information security management that is a revised and re-issued version of BS ISO/IEC 17799:2000. This international standard on information security management is intended for use as a reference document by employees who are responsible for developing, implementing, and maintaining information security within their organisation.

BS ISO/IEC 27001:2005

An international standard, replacing the British standard BS 7799 part 2, that sets out the requirements for an information security management system (ISMS). Released in October 2005, the standard is designed to ensure the selection of adequate and proportionate security controls that protect information assets and give confidence to interested parties including an organisation's customers.

BTP (Business Transaction Protocol)

An XML-based protocol for managing complex B2B transactions over the internet currently being developed by the Business Transactions Technical Committee of OASIS. Business to business interactions on the internet pose unique challenges not least because the information systems of the individual businesses typically employ different equipment, technologies and business practices. One way to side-step this problem is to establish mechanisms that are not specific to existing technologies. The intention of the BTP protocol is to create a standardised internet-based means of managing complex, ongoing B2B transactions among multiple organisations. The BTP criteria specifies that the protocol should work in conjunction with current business messaging standards, especially those in development by the ebXML Initiative.

Bulletin board system

A host computer and associated software that can be reached by computer modem dialling for the purpose of sharing or exchanging messages or other files. Messages are usually split into topic groups similar to the newsgroups on Usenet (which is, in effect, a distributed bulletin board system). Any user may submit or read any message in these public areas. Apart from public message areas, a bulletin board system may provide archives of files, personal electronic mail and any other services or activities of interest to the bulletin board's system operator. Bulletin board systems originated and generally operate independently of the internet. However, an increasing number have web sites and many bulletin boards are currently operated by government, educational, and research institutions. In addition many internet access providers and local computer user groups have bulletin board systems enabling users to download software including both shareware and freeware, as well as providing various online information and services.

Business intelligence

Generic term that describes the processes used to collect and analyse business information, and the application software used in these processes. The intention is to provide business users with access to intelligent information on their company's data and thereby enable them to make better informed business decisions. Business intelligence applications include decision support systems, online analytical processing (OLAP), forecasting and data mining.

Buyer co-operative

An Internet-based business model that involves the bringing together of many buyers to drive down the price on selected items. This provides the individual buyer with the price benefit of volume buying and the more buyers that join the co-operative, the lower the price usually drops.

Byte

Generally refers to a computer value of 8 *bits*. For example ASCII code makes use of an 8 bit byte, comprising 7 information bits and 1 parity bit for error control. However, a byte can actually consist of more than 8 bits, as is the case with Unicode which utilises 16 bit bytes. Computer storage space is measured in bytes.

C

C2B (Consumer to Business)

A type of e-business transaction facilitated by an intermediary where the consumer is proactive and initiates trading with a business, perhaps by making an offer to the business, for example by stating the price that they are prepared to pay for an airline ticket.

C2C (Consumer to Consumer)

A type of e-business transaction facilitated by an intermediary where consumers deal directly with other consumers. This type of transaction is increasingly common with the growth of online auction sites.

CA (Certification Authority)

A trusted entity that confirms that the private key received as part of a *digital signature* does in fact belong to the person who is claiming to have signed it. The CA confirms this fact by signing a Public Key Certificate with the associated public key. The degree to which you trust the CA to underwrite information prior to certification will define the risk to you of accepting the associated signature. Thus an internal CA for use by trusted employees is totally within your control (even if it is outsourced as a service). B2B companies are increasingly creating closed groups, where members establish mutual trust by signing legal terms for use of specific CAs within the group. B2C companies are most at risk as customers can present certificates from anywhere internationally, and the associated CA may be unknown to you.

Cache

Place to store information or a web page temporarily on your computer. The files you automatically request by looking at a web page are stored on your hard disk in a cache sub-directory. When you return to a web page that you have recently looked at, the browser can get it from the cache rather than the original server, saving you time and the network the burden of some additional traffic. The size of the cache can be specified, depending upon the browser being used.

CCITT (Consultative Committee on International Telegraph and Telephone)

An international standards organisation that issues recommendations and standards for communications. It is now known as the ITU-T (International Telecommunications Union – Telecommunications) Telecommunications Standardisation Sector.

CGI (Common Gateway Interface)

A standard that describes how a web browser passes on information to a web server. CGI programs are able to read the information, process it and pass the results back to the web browser. The two most common uses for CGI are to facilitate the use of forms for data entry and to link a web server to a database. The most common programming language for CGI is PERL.

Churn

Term used to describe the acquisition of new customers compared with the loss of existing customers. A high churn rate indicates a high turnover of customers and is a characteristic of e-business, particularly B2C, where it is becoming increasingly easy to switch between suppliers in an online environment.

Ciphertext

Term used to describe data that has been encrypted. The result is a scrambled, unreadable message which is converted from plaintext using an encryption algorithm and which can be transformed back into the readable plaintext with an appropriate decryption key.

Click through

The rate at which viewers of a web page click on a banner advertisement and are transferred to the advertiser's web site. Typically the advertiser will pay the host of the web page an agreed fee for each click through.

Client

A PC or workstation in a network, on which a user runs applications. The client relies on a server for resources such as files and devices, and has to make a request to the server to use these resources. This is known as a client/server relationship. It is a commonly used term in the web environment where any user of a web browser is effectively making client requests for pages from servers all over the web. The browser itself is a client in its relationship with the computer that is getting and returning the requested HTML file. The computer handling the request and sending back the HTML file is a server.

CODEC

An acronym that describes a program or device that Compresses and DECompresses any kind of file, in particular digital video. Compression works by eliminating redundancies in data and can reduce the size of a file by a factor of 100 or more in some cases. In this way, files that would be far too large to download from the web in their full form can be compressed and the download speeds improved immeasurably. In order to view such files a decompression algorithm has to be used. There are numerous standard codec schemes. Some are used to minimise file transfer time, whilst others are intended to maximise the data that can be stored in a given amount of disk space.

Co-location

Hosting equipment of several clients (who can, in fact, be competitors) in the same facility. Internet Service Providers (ISPs) often provide such a service. In addition to maintaining the equipment, they test it periodically for the client.

Compression

A method by which data of any type is scaled down in size, eventually consuming less space for storage and requiring a narrower bandwidth for transmission (without any subsequent loss of information). Data compression techniques have played an important role in the development of e-commerce, with the increasing need to transmit large volumes of data (in particular image and video data) to web users where there are limitations on the bandwidth available.

Compound document

A document that may integrate different document types and media types which emanate from different sources.

Computer forensics

The use of specialised computer investigation and analysis techniques for gathering potential legal evidence. A structured investigation is carried out in response to a wide range of computer crime or misuse, with a variety of techniques used for discovering data that resides in a computer system, or recovering deleted, encrypted, or damaged file information. Any evidence found is carefully documented and verified in preparation for legal proceedings.

Content blocking

A security measure that blocks access to websites based upon keywords that are contained in their content. This is used increasingly by parents to block offensive online material from their children. The actual blocking of the content can be undertaken by the ISP, or more commonly by the home user installing software to perform this task locally.

Content filtering

Term used to describe the use of a program to screen or exclude unwanted or undesirable content from web users. Both business and home users are able to take advantage of such features to ensure that their employees and children are not able to access web content that they feel would be objectionable. Examples of products aimed at the home market to protect children include Cyber Patrol and Net Nanny. At the business level, content filtering is often incorporated as part of the corporate firewall. It works by specifying character strings that are likely to indicate undesirable content, and blocking any content that matches these. The use of content filtering is also being adopted for e-mail systems in attempt to overcome the serious problems posed by *spam*.

Contextual advertising

Term used to describe the adverts that appear on a website where those adverts are selected and served by automated systems based on the content displayed or requested by the user. A contextual advert system scans the text of a web page for keywords and returns adverts to the web page based on what the user is viewing. These adverts are either placed on the page or appear as pop-ups. An example is the Google AdSense program that provides webmasters with JavaScript code which, when inserted into web pages, calls up relevant adverts from the Google inventory of advertisers.

Cookies

Files downloaded from a web server to the PC of a visitor to a web site. They can be retrieved by the server that placed the information there. The text file that is created contains information on the user's preferences. In addition, cookies can also save information such as the date that the web site was visited, what purchases were made, what files were downloaded and the information viewed.

Corporate portal

Refers to the approach now being adopted by many organisations who are rebuilding their web site to serve as a single gateway to all of the company's information and knowledge base. This can be exploited by the company's employees and also, providing appropriate security safeguards are built in, customers, business partners and even the general public. The term is sometimes shortened to corportal.

Cracker

Term used to describe a technologically skilled person who breaches the security of a computer system or network by breaking into the system and gaining unauthorised entry. A cracker is usually doing this for malicious purposes or for personal gain, and should not be confused with a *hacker*.

CRM (Customer Relationship Management)

An information industry term for the overall strategy, incorporating methodologies, software, and internet capabilities, that helps a company manage customer relationships in an organised way. For example, a company might build a customer database that enables its marketing department to identify and target their best customers, manage marketing campaigns with clear goals and objectives, and generate quality leads for the sales team. Subsets of the same data might assist in the formation of personalised relationships with customers, with the aim of improving customer satisfaction and maximising profits. Identifying the most profitable customers and providing them the highest level of service is at the core of CRM.

Cryptography

Greek word meaning 'hidden writing'. It is the name given to the science of scrambling data in such a way that renders it totally unintelligible to the unauthorised viewer, but which enables the intended recipient to unscramble it sensibly. In the e-commerce world it is typically used to protect data as it travels along communications links between different systems.

CTI (Computer Telephony Integration)

The integration of voice and data networks and their associated applications. An example of its use within the e-commerce world is the integration of a web site with a call centre. This would enable a call centre agent to provide further information to the web site visitor or help them complete a transaction if they are experiencing problems.

Cybermediaries

Term used to describe intermediaries who use the web to facilitate transactions between consumers and suppliers. Typically cybermediaries are of three different types: physical – handling inventory and physical distribution, as with e-tailers; virtual – resellers who do not have inventory or physical distribution, as with online stores; and facilitators who direct traffic or perform niche merchandising, as with aggregators to large portals.

Cybersmearing

Refers to the practice of ex-employees using internet message boards and e-mail to besmirch the reputation of their former company. In order to safeguard against this, companies are increasingly reviewing their specific employment terms and conditions which cover employee conduct when leaving a firm.

Cybersquatting

Term used to describe the situation where domain names reflecting recognised brands are registered by someone else in order for them to be sold off at a later date to the brand owner for a profit.

Cybervandalism

Generic term used to describe attacks on websites. These can range from the simple electronic defacing of an existing web page through to major *denial of service* attacks where attackers bombard the website with a huge number of demands for information, with a view to slowing or completely halting its operation.

D

Data mining

Tools to create applications that access information a company has gathered on customers and products. Typically these applications are intended to identify patterns and establish relationships. When used within Customer Relationship Management (CRM) it is sometimes referred to as Web Mining, since it seeks to exploit the huge amount of information gathered by a web site in order to look for patterns in the behaviour of visitors.

Deep linking

Deep linking is the practice of providing hyperlinks to interior pages on a website, rather than the front page of a site. Deep links enhance usability because, unlike generic links, they specifically relate to the visitor's needs, as they are likely to contain information that matches a specific query or search for information.

Denial of Service Attack

The intention of such an attack is to deny access to authorised users of a web site, usually as a result of the implementation of malicious procedures by hackers. Denial of service is achieved by attacking network components, such as routers and computer systems, by attacking applications or the operating system. The result is an inoperable condition that may cause the web site to offer a reduced level of service or, in some cases, may result in the web site ceasing operation until the problems are resolved. This can result in a financial loss for the company and has, in some instances, actually resulted in the company going out of business, particularly if it operates exclusively within an e-business environment.

Deperimeterisation

Term coined by the Jericho Forum, an international group of IT customer and vendor organisations dedicated to the development of open standards to enable secure and boundaryless information flows across organisations. It is used to describe a model where applications take a more proactive role to securing their own information and interactions by using encryption and data-level authentication. This contrasts with the more traditional 'wall and moat' model commonly used by today's networks, that utilise *firewalls* and *demilitarised zones*.

DES (Data Encryption Standard)

An encryption algorithm widely used in e-commerce security solutions. The original algorithm has 56 keys and can be cracked, which has resulted in the development of Triple DES which has a 128-bit key and is at present unbreakable.

DHCP (Dynamic Host Configuration Protocol)

A communications protocol that is used to automatically assign an *IP address* to any device (such as a computer or VoIP phone) that needs one. Each machine that is connected to the Internet needs a unique IP address and, without DHCP, this address would have to be entered manually at each computer in the organisation and a new IP address would have to be entered each time a computer moves to a new location on the company network. DHCP enables the supervision and distribution of these IP addresses from a central point.

DHTML (Dynamic Hypertext Markup Language)

An extension to HTML, which allows a better user interaction and introduces dynamic web page creation. This enables web designers to create dynamic multimedia applications through the use of JavaScript and Cascading Style Sheets. It is of particular use in enabling the web site visitor to read the text on screen while the pictures or animation are building up. However many web designers have little knowledge in this area and therefore tend to use traditional multimedia tools such as Macromedia's Director or Flash.

Dialler

A computer program that creates a connection to the Internet for non-broadband, dial-up connections. These are commonly provided by *Internet Service Providers* to set up the user's Internet connection. However, rogue diallers are increasingly used for fraudulent purposes. Such diallers hijack the user's modem without their knowledge and dial up premium rate or long distance numbers when they log on. The creator of the dialler will generate significant revenues from such calls, often up to 90% of the cost of these premium calls.

Digital asset management

A system that creates a centralised repository for digital files such as documents, images, and audio and video elements, and allows the content to be archived, searched and retrieved. The digital content is stored in databases called asset repositories, whilst a workflow component allows for the structured movement of documents or media across an organisation. Digital asset management is also sometimes referred to as enterprise digital asset management or media asset management.

Digital cash

Electronic cash residing in an electronic wallet or purse. The transfers from a credit card or bank account can fill up the wallet or purse. When the customer uses digital cash their funds go into merchants wallets.

Digital certificate

A document signed with a *digital signature* by a Certification Authority which acts as electronic proof of identity by confirming that the holder of a specified public key is actually who they claim to be.

Digital signature

An electronic signature that can be used to authenticate the identity of the sender of a message or the signer of a document, and also ensure that the original content of the message or document that has been sent is unchanged. Digital signatures are easily transportable, cannot be imitated by someone else, and can be automatically time-stamped. The ability to ensure that the original signed message arrived means that the sender cannot easily repudiate it later. A digital signature can be used with any kind of message, whether it is encrypted or not, simply so that the receiver can be sure of the sender's identity. A *digital certificate* contains the digital signature of the Certification Authority so that the recipient can verify that the certificate is real.

Digital watermark

An identification code that is inserted into a digital image, audio or video file, and which identifies the file's copyright information (author, terms of use etc.). The name comes from the faintly visible watermarks imprinted on stationery that identify the manufacturer of the stationery. The watermark is invisible and permanently embedded into digital data for copyright protection and for checking if the data has been corrupted.

Disintermediation

The process of a company getting closer to its customers by cutting out the middleman. The middleman may well be an existing distribution channel, but equally it could be a time element (where, for example, e-commerce takes away the critical element of only being able to purchase specific goods during conventional shopping hours). Equally it could be a 'people' saving, for example where customers are able to make their own bookings, reservations and purchases via the web without the need for any intervention or assistance by a booking or sales agent.

DMZ (Demilitarised Zone)

A security zone with a separate security policy that is used to partition public servers such as e-mail and web servers away from internal networks. Typically this involves putting a firewall behind the servers that require expanded Internet access, so that if they are breached the remainder of the internal networks are still protected by a firewall.

Domain name

The name of a computer connected to the internet. The domain name is used to form the URL. The domain names are assigned by specific institutions in each country.

Domain kiting

A practice exploited by unscrupulous domain name registrars who take advantage of AGP (Add Grace Period) provision in ICANN, which is a five-day window period during which a newly registered domain name can be deleted or dropped with full refund of the registration fee. This allows the registrar to put up mini websites loaded with search engine links, for domains names for which they may never pay. An analysis of the amount of traffic generated by the individual domains can be undertaken and at the end of the five day period those that generate sufficient traffic can be retained or sold on at a premium to a third party.

Domain parking

A service offered by a domain name registrar to its clients as a way of securing a domain name for future use. The domain name registrar registers the domain name and 'parks' the domain name on a server, without updating any DNS information, until it is ready to be made active. By doing this, the registrar ensures the availability of the domain name for the client's future use so that another individual or company cannot register that same domain name.

Domain sniper

Refers to a person or company that locates and registers a web site domain name that has lapsed from registration. Typically they will purchase the domain name as soon as the original registration lapses, and then seek to sell it back to the original owner, or indeed anybody else who is interested, at a significantly inflated price. In an attempt to force the hand of the original registrant, they may set up a page of pornographic banners which has the effect of tarnishing the image of the original owner. The difficulty at present, is that, unless the owner has a trademark on the domain name, there is little that can be done. Nothing illegal has happened and the domain sniper is simply taking advantage of the original owner failing to stop the registration from lapsing.

Domain suffix

Designates on what network a specific domain name resides. For example .com refers to corporations, .org refers to non-profit organisations, whilst .uk typically refers to a UK company or a company predominantly trading in the UK.

Double auction

A type of auction in which buyers enter competitive bids and sellers enter competitive offers simultaneously. The auctioneer matches the sellers' offers (starting with the lowest price and then going up) to the buyers' offers (starting with the highest price and going down) until all of the quantities are sold.

Download

The process by which visitors to a web site access and save or pull down software or other files to their own computer from the web server, usually via a modem.

DRM (Digital Rights Management)

Software based technologies aimed at protecting the copyright of data that is made available via the Internet, by enabling secure distribution and/or disabling illegal distribution of the data. In its most common form, DRM protects intellectual property by either encrypting the data so that it can only be accessed by authorised users or marking the content with a digital watermark, or similar method, so that the content can not be freely distributed. Increasingly, DRM is also providing tracking capabilities to identify who is using what, where and when. Tracking allows the content owners to build up profiles of usage patterns and usage locations for both legitimate and illicit use, information which can then be used to identify potential revenue opportunities in the future.

Drive-by pharming

A new type of security threat where an attacker is able to change the DNS settings on a user's broadband router or wireless access point as a result of that user visiting a malicious website. This is made possible when a broadband router is not password protected or an attacker is able to guess the password - for example, most routers come with a well-known default password that a user never changes. From this point on, every time the user browses a website, DNS resolution will be performed by the attacker. This gives the attacker complete discretion over which websites the victim visits on the Internet. For example, the user may think they are visiting their online banking website but in reality they have been redirected to the attacker's site and when they enter their user name and password, the attacker can steal this information. The attacker will then be able to access the victim's account on the 'real' bank site and transfer funds or create new accounts. See also [pharming](#).

Dynamic pricing

The ability to update prices in real time within an e-commerce environment, according to the type of customer visiting the site and market conditions. The technology that is available to online businesses is crucial in both gathering user information and then changing prices with the minimal amount of time and effort.

E

Eavesdropping

The unauthorised intercepting and reading of messages and conversations by unintended recipients. Eavesdropping can be done over telephone lines, e-mail, instant messaging, and any other method of communication considered private. Communications can be protected from eavesdropping through the use of [encryption](#) techniques.

eBIS-XML

Interface developed by the Business and Accounting Software Developers Association (BASDA). Using XML technology, it was designed as a simple easy to use, many to many interface which will work with any business financial system, based on series of international standard business document formats. These provide the user with the ability to transmit a message over the internet to another application as well as viewing it as a document through a web browser. Software using the eBIS-XML messages ensures that orders or invoices can be generated and sent electronically from one business systems to another. Once received, the business document can be displayed or printed out as a hard copy.

EbMS (ebXML Messaging Services)

Refers to the secure, reliable method of transmitting electronic data that is defined as part of the ebXML specifications. It can use a variety of low level transmission protocols including HTTP and SMTP.

ebXML

ebXML (Electronic Business using eXtensible Markup Language), is a project to use the Extensible Markup Language (*XML*) to standardise the secure exchange of business data. ebXML was started in 1999 as an initiative of OASIS and the United Nations/ECE agency CEFAC. The modular suite of specifications enables businesses of any size and in any geographical location to conduct business over the internet. By using ebXML, businesses have a standard method to exchange business messages, conduct trading relationships, communicate data in common terms and define and register business processes. Importantly, as part of this, it seeks to build upon the experience and strengths of existing EDI knowledge, thereby enabling companies to complement current EDI investment and expand electronic business to both new and existing trading partners.

e-catalogue

An electronic version of the traditional paper catalogue. Originally e-catalogues were distributed on CD-ROM (with up to 100,000 products capable of being stored on a single CD) but increasingly the e-catalogue forms an integral part of a company's online e-commerce presence. Typically the software will provide a menu driven database program that enables the user to locate products by product code, description, page number or index. Ordering facilities are integrated so that the whole purchasing process can be completed online.

ECML (Electronic Commerce Modelling Language)

A standard for the universal acceptance of online payments. Provides a standard way of transferring billing, shipping and payment information to merchant sites regardless of what site the customer is purchasing from. If order forms are standardised, the customer's information can be imported directly into the form from a digital wallet, thus saving the customer from repeatedly filling out the same information on multiple order forms on multiple sites. Founding members of the ECML Alliance included American Express, Compaq, CyberCash, IBM, MasterCard, Microsoft, Novell, Sun Microsystems, and Visa U.S.A.

EDI (Electronic Data Interchange)

The transfer of structured business data (such as orders and invoices) by agreed message standards, from one computer to another, by electronic means. Standards were agreed before internet activities were established in a business context and so formed the forerunner of today's business to business e-commerce. Some of the EDI standards and systems have been upgraded for use on the internet – particularly in the area of XML/EDI.

e-GIF (e-Government Interoperability Framework)

A set of technical policies and specifications to enable information to flow seamlessly across the public sector and provide citizens and businesses with better access to public services. They cover interconnectivity, data integration, e-services access and content management.

e-GMF (e-Government Metadata Framework)

Sets out the Government's policies for establishing and implementing metadata standards across the public sector. These standards will be used across all government information systems.

e-Government

The use of IT to join up the public sector electronically and provide modern, improved public services. The intention is to achieve electronic delivery of services to the citizen and this is supported by the e-Government Unit which is the largest unit in the Cabinet Office. This unit is responsible for developing common IT components across government and delivering citizen-centred online services.

Electronic Ink

A liquid substance, in development at the Massachusetts Institute of Technology (MIT) media laboratory in partnership with a company called E Ink (eink.com) that responds to electrical impulses to enable changeable text and image displays on a flexible surface. Electronic ink will be used for applications such as electronic newspapers, e-books, and foldable, rollable displays. The actual displays written in electronic ink remain fixed until another charge is applied to change them. So, for example, if you were reading an electronic newspaper, you could download it section by section via a Wi-Fi connection and the display would be refreshed for each new section.

e-marketplace

A virtual online market where buyers, suppliers, distributors and sellers find and exchange information, conduct trade and collaborate with each other.

EMV standard

EMV is an international standard, developed in response to certain types of bank card fraud. The name EMV stands for the initiating organisations, namely the former Europay, and the international organisations MasterCard and Visa. In time, EMV will replace the magnetic strip with a chip on both credit cards and other bank cards, making EMV financial transactions more secure against fraud than traditional credit card payments. This is due to the use of encryption algorithms to provide authentication of the card to the processing terminal and the transaction processing centre.

Encryption

The translation of data into a secret code that cannot be easily understood by an unauthorised person. Encryption utilises algorithmic schemes that encode plain text into non-readable form or cyphertext, thereby providing privacy. The receiver of the encrypted text uses a 'key' to decrypt the message, returning it to its original plain text form. The stronger the cipher - that is, the harder it is for unauthorised people to break it, the better. However, as the strength of encryption increases, so does the cost. Initially, 64-bit encryption was considered quite strong, but today 128-bit encryption is the standard, and this will undoubtedly increase in the future. Web browsers will encrypt text automatically when connected to a secure server, as indicated by a web address beginning with https. E-mail correspondence can also be encrypted through the use of encryption programs that feature plug-ins or interfaces for popular e-mail clients, the most longstanding of which is [PGP \(Pretty Good Privacy\)](#). Encryption has become particularly important in wireless communications, since wireless circuits are easier to 'tap' into than hard-wired networks.

e-procurement

The automation of the procurement activity within an organisation. This can be limited to the purchase of items from some form of online catalogue, or extended to the sourcing of potential suppliers for subsequent tendering and awarding of contracts. In either case the full range of documentation including quotation or tendering requests, purchase orders, acknowledgements, shipping notices, invoices and payments can be processed electronically.

ERP (Enterprise Resource Planning)

A business management system that integrates all the major activities undertaken by a manufacturer or other business. ERP systems are usually broken down into modules such as financials, sales, purchasing, inventory management and manufacturing, and these are designed to work seamlessly and provide a consistent user interface. Typically an ERP system uses, or is integrated with a relational database system.

Escrow

In an e-business environment an escrow service is used to protect software application source code, or code relating to websites and web applications. An escrow agreement is typically made between three parties - the creator of the source code (a software supplier), the user of the software, and an escrow agent. The source code is deposited with the escrow agent and is only released to the user if a certain agreed event occurs, for example the software supplier entering into liquidation.

e-sourcing

The use of secure web-based collaborative tools to support all of the steps in the procurement process. This includes requirements definition, tendering, negotiation, award and contract management.

e-tailing

Online sales of retail-style goods. Many consumer and specialist goods are now available via such web sites, though many were also amongst the first victims of the dot com downturn.

Ethical hacker

An IT security expert who is employed by an organisation to undertake an attempt to penetrate their networks or computer systems using the same methods as a *hacker*. The intention is to identify vulnerabilities that a hacker could exploit and so enable the organisation to take preemptive measures against any possible malicious attacks. See also *penetration testing*.

E2E (Exchange to Exchange commerce)

Exchanges enable suppliers, buyers and intermediaries to come together in a *B2B* environment in order to offer products and services to each other according to set criteria. E2E describes the extension of this concept, whereby buyers and sellers conduct transactions not only within exchanges but also between them. The main benefit to the sellers is that they can frequently get a higher price for their products or services by having them offered on several sites simultaneously.

Evernet

Word used to describe the ability to be continuously connected to the web on any device in any location, sometimes known as the 'always-on' phenomenon. The convergence of wireless, broadband and Internet telephony technologies has enabled the Evernet state to emerge.

Exchanges

Term used in the *B2B* environment to describe a web site-based service that enables suppliers, buyers and intermediaries to come together and offer products or services to each other according to set criteria. A third party usually operates the exchange, stipulating what these criteria are and charging a fee for sales made. Buyers and sellers work interactively with the bids and offers. When a deal is made it is a match between the buyer and seller on variables such as price, volume, and delivery costs. There are a growing number of exchanges, trading products from livestock to car components.

Executable file

A file that contains a program which will run upon the file being opened. Executables in Windows usually have an .exe. or a .com extension, whilst in Unix and Macintosh environments they can have any name. Of particular concern in the e-mail environment are .exe and .com files which, when opened, cause the operating system to run the attached program. Users who receive such files as e-mail attachments should always be sure that they come from a trusted source and are not, in fact, carrying a computer virus.

Extranet

Making an intranet accessible for selected external partners (such as trading partners, members of working parties etc) for exchanging data and applications and sharing specific business information. The users of the extranet are a well defined group and access is protected by rigorous identification routines and security features.

e-zine

Online publication in the form of newsletters or magazines that allow for a new way of communication and interaction to occur on the internet. Many e-zines were developed specifically as web-only publications, whilst others have emerged out of traditional publications.

F

FAQs (Frequently Asked Questions)

Online document that provides visitors to a web site with a summary of questions and associated answers that are regularly asked about the site or the products/services that the owner of the site provides.

FDDI (Fibre Distributed Data Interface)

A high speed token-passing ring network (similar to token ring) that operates at 100Mbps over a fibre optic cable and is capable of extending up to a range of 200 kilometres. The FDDI set of standards was originally developed in the late 1980's by ANSI (American National Standards Institute) and is now in widespread use due to the increasing demand for higher bandwidth in networks. Much of its popularity is due to the fact that it is a fully fledged technology (compared to emerging technologies such as Fast Ethernet) that has standard interoperability and product availability. FDDI was originally developed to carry computer data, but FDD-11 is being developed to cater for a mix of voice, data and video traffic.

Firewall

A hardware or software security device that filters information passing between internal and external networks. Usually run on a specific server, it controls access to the internet by internal users, and prevents outside parties gaining access to systems and information on the internal network. In particular it protects the internal network from intruders or hackers who might try to use the internet as a means of breaking into those systems.

Folksonomy

A combination of 'folk' and 'taxonomy' used to describe an approach to categorisation that is increasingly used on websites whose content is user-created. Users are encouraged to tag information using freely chosen keywords so that they can come back to it themselves. These tags are also used to enable other users to find this information. This 'communal' approach to categorising information is in contrast to the centralised form of classification traditionally used by websites.

Forum

A discussion on a particular subject between visitors to a web site. The discussion is usually hosted by an online service such as a bulletin board service or a newsgroup. The contribution of each visitor is stored in a database and can be retrieved and presented to subsequent visitors. The general discussion can be broken down into specific threads and the various comments relating to each individual thread can be tracked and accessed.

Fulfilment

An element of the e-commerce supply chain that picks, packs and ships orders to customers.

FURL (Frame Uniform Resource Locator)

A free social book marking website that allows members to store personal copies of web pages on their own 5 gigabytes of storage space. They can find these pages again by book marking and annotating them and can also share them with other members of Furl. Each book mark can be assigned a rating to give greater weight in the searching process. Typical applications for Furl range from travel planning and recipe sharing to medical research. Further information can be found at <http://furl.net/learnMore.jsp>

G

Gateway

Architecture for bridging the gap between two otherwise incompatible applications or networks, working with different protocols, so that data can be transferred.

Gigabyte

A unit of measurement for physical data storage capacity on some form of storage device such as a hard disk or optical disk. It is equal to two raised to the 30th power i.e. 1,073,741,824 bytes, the equivalent to 1,024 *megabytes*.

GGF (Global Grid Forum)

A community of users, developers, and vendors dedicated to the adoption of grid computing in industry and research. Established in 1998, the community consists of thousands of individuals in industry and research, representing over 400 organisations in more than 50 countries. The intention is to define grid specifications that lead to broadly adopted standards and interoperable software, and build an international community for the exchange of ideas, experiences, requirements and best practices. See <http://www.ggf.org>

Glocalisation

A combination of the terms globalisation and localisation. It refers to the need of e-businesses to design their sites for global use whilst, at the same time, paying attention to local needs, cultures and business opportunities.

Grid computing

Term used to describe a model for solving large scale computational problems. Grid computing uses the resources of distributed computing and data resources, such as processing, network bandwidth and storage capacity to provide the user with a single, large virtual computer. This enables organisations to optimise their computing and data resources, pool them for large capacity workloads, and share them across networks.

Groupware

Software that supports collaborative working and the sharing of information. Document management and shared document databases are an important part of most groupware software application packages, as is the ability for the software to query user diaries and arrange meetings.

GSM (Global System for Mobile Communications)

A digital cellular telephone system that was developed in Europe and has since become a global standard. Launched in 1991, it achieved 100 million users in 1997, 250 million by the end of the last century and is set to reach one billion by 2003. Already, in many countries there are more mobiles than fixed telephone lines.

H

Hacker

Originally a term of respect for a highly proficient computer programmer who seeks to gain unauthorised access to systems without malicious intent. However, the press has increasingly used the term to describe individuals who gain unauthorised access to computer systems for malicious purposes. For the purposes of this glossary we will use the term in the same vein as a *white hat*, namely someone who helps fix badly written software programs and writes new programs for the greater good of the computing community. The term *black hat* or *cracker* is used to describe someone who breaks into systems, destroys data, steals copyrighted software, and performs other destructive or illegal acts with computers and networks.

Hacktivist

Term used to describe a hacker with a political or ethical axe to grind who seeks to exploit security vulnerabilities in those companies or organisations whose policies, political viewpoints or business activities they do not agree with. Victims of this form of social activism might include companies selling fur, tobacco or arms. Such companies would be included in the hacktivist's WDLY lists, where the acronym stands for 'We Don't Like You' and is generally seen as a sufficient motive for hacking a particular computer.

Heuristic scanner

An anti-virus program that detects viruses by applying general rules about the characteristics of viruses and how they behave. The program scans files and alerts the user if it deems the format of the file to be suspicious. Though this type of program does not require frequent updates, it can be prone to false alarms.

Hit

Term used to describe a request for data from a web page or file, it is often used to indicate the popularity of a web site. However, confusion can arise if the number of hits is equated to the number of visits or pages viewed. A single web page can include graphics, multimedia and the HTML file itself, with every element equating to one hit. So, the downloading of a single page will usually record several hits, and depending upon the page size and the browser used, the number of hits per page can also vary widely.

Honey pot

Term used to describe decoy servers or systems that are set up to gather information regarding an attacker or intruder to a company's systems. They are intended to tempt intruders into areas which appear attractive, worth investigating and easy to access, possibly taking them away from the really sensitive areas of the company's systems. They are designed to help a company learn how attacks are formed and identify who is attacking them. Honey pot traps can be set for internal, external and remote access systems.

Hostile applets

Small applications, written in Java, that are intended to surreptitiously access and transmit data on hard drives, including e-mail addresses, credit card records, and other account information. This contrasts with conventional applets that are designed to extend the capabilities of browsers or provide web site-specific functionality

Hosting

Hosting is the business of housing, serving, and maintaining files for a web site or a secure server for an e-commerce site. A critical element in any hosting solution is a fast connection to the internet. Whilst this can prove expensive for an individual business hosting its own site, using a hosting service lets many companies share the cost of a fast internet connection for serving files. This, together with the cost of providing security, database and administration functions, has led to a variety of different external hosting solutions. ISPs offer a number of standard packages, some of which include free space for a web site. However they can be basic and may not cater well for specialised needs. More sophisticated solutions are available from Application Service Providers who are capable of providing a hosting service, data management and the application in a single package.

Hot desking

Term used to describe the situation where employees do not have their own desks, but are allocated work space according to their needs. The system is best suited to firms in which staff spend a lot of time out of the office, for example sales people, so that space does not have to be kept permanently allocated for them. This is intended to have the effect of reducing desk space requirements and therefore cutting office space costs.

Hotspot

Any location where **Wi-Fi** network access (usually Internet access) is made publicly available. Hotspots can often be found in airports, hotels, coffee shops, and other places where business people tend to congregate. They are considered a valuable productivity tool for business travellers and other frequent users of network services; they enable a user with a laptop equipped for **Wi-Fi** to contact a local hotspot and get connected through its network to reach the Internet and their own company remotely with a secure connection. Some hotspots require payment of hourly, daily, monthly, or other subscription fees, though increasingly they are provided as a free service.

HTML (HyperText Markup Language)

The fundamental building block of the World Wide Web and a formal recommendation by the World Wide Web Consortium (WC3). HTML is the set of markup symbols or codes inserted in a file intended for display on a World Wide Web browser page. The markup tells the web browser how to display a web page's words and images for the user. Each individual markup code is commonly referred to as a tag. Some elements come in pairs that indicate when a display effect is to begin and when it is to end. Non-graphical HTML can be created by text editors such as Microsoft Word, though graphical HTML documents require a more sophisticated editor.

HTTP (HyperText Transfer Protocol)

The protocol used to transmit HTML files over the internet. Usually indicated in the web browser as *http://*

HTTPS

The secure version of HTTP. The URL line on the web will usually change to *https://* when secure details such as credit card information is presented. This usually accompanies the padlock symbol on the bottom right of the web browser status display.

Hub

The point on a network where circuits are connected. Hubs are commonly used to connect segments of a LAN and contains multiple ports. When a packet arrives at one port, it is copied to the other ports so that all segments of the LAN can see all packets.

Hub hardware can be either active or passive. A passive hub serves simply as a conduit for the data, enabling it to go from one device to another. An active hub includes additional features that enable an administrator to monitor the traffic passing through the hub and to configure each port. Hubs are not used in networks with wireless connections, since network devices such as routers and adapters communicate directly with one another in this instance.

Hyperlink

An electronic link that can be programmed so that it is possible to jump from one document or web page to another. Hyperlinks rapidly gained prominence as being the primary tools for navigating the internet.

Hypertext

A way of presenting information, usually accessed via a browser, in which text, sounds, images and actions are linked together in a way that allows the user to jump between them in whatever order is chosen.

ICANN (Internet Corporation for Assigned Names and Numbers)

A non-profit corporation that was formed to assume responsibility for the IP address space allocation, protocol parameter assignment, domain name system management, and root server system management functions previously performed under U.S. Government contract by IANA and other entities.

Identity management

An integrated set of processes, policies and technologies, including password management and access management, used to control user access to network resources and online applications. Identity management is responsible for identifying individuals in a system, and controlling their access to resources within that system by associating user rights and restrictions with the established identity. It also acts as a single point of administration for adding and deleting user accounts.

Identity theft

Identity theft occurs when somebody steals the name and personal information of another person for fraudulent purposes. This can pose serious risks at both the personal and, increasingly, the corporate level, as web technology enables the perpetrator to use this information to fraudulently misuse bank accounts and credit cards, or access sensitive corporate data.

IMAP (Internet Message Access Protocol)

A standard protocol for accessing and manipulating e-mail stored on a remote e-mail server. Using IMAP an e-mail client program can not only retrieve e-mail but also manipulate messages stored on the server, without having to actually retrieve the messages. So the user can view just the heading and the sender of the letter and then decide whether to download the mail. IMAP is gradually replacing **POP (Post Office Protocol)** as the main protocol used by e-mail clients in communicating with e-mail servers. POP and IMAP deal with the receiving of e-mail from your server and should not be confused with SMTP (Simple Mail Transfer Protocol), a protocol for transferring e-mail between points on the internet. SMTP is used to actually send the e-mail and a mail handler receives it on the recipient's behalf. The mail is then read using POP or IMAP.

Incubator

A company that provides support to a new business as it develops its e-commerce (or other business sector) capabilities. This support can be in the form of management guidance and technical assistance tailored to young growing companies. Incubators usually also provide clients with access to appropriate rental space and flexible leases, shared basic business services and equipment, technology support services and assistance in obtaining the financing necessary for company growth. Business incubators are set up by universities, non-profit groups, and increasingly by venture capitalists.

Infomediary

Term used to describe an organisation that aggregates and distributes information via the web. The information provided is usually of a specialist nature. Infomediaries can provide information for consumers, but the term is more frequently used to refer to those web sites that offer dedicated information services for businesses. Typically such sites require users to register and log-in in order to access the information.

Information extraction

Information extraction is a relatively new discipline within the more general field of natural language processing that selects, extracts and combines data from unrestricted text in order to produce structured information. This text might be from a variety of sources, often vital to decision-making, such as newspapers, web pages, radio and TV broadcasts, that are impossible for a human to read, understand and synthesise because of the megabytes of text that are added every day to their electronic stores of data. The goal is to extract from the various documents salient facts about pre-specified types of events, entities or relationships. These facts are then usually entered automatically into a database, which may be used to analyse the data for trends.

Instant messaging

Instant messaging allows you to maintain a list of people that you wish to interact with in real time. You can send messages to any of the people in your list, often called a buddy list or contact list, as long as that person is online and is using the same instant messaging service. Sending a message opens up a small window where you and your contact can type in messages that both of you can see. The intended recipient must also be willing to accept instant messages, since it is possible to set up the software to reject messages. Whilst primarily used for social purposes, instant messaging has a growing business usage since it allows for truly instant messaging, even during peak internet usage times, something that e-mail cannot guarantee.

Interface

A boundary across which two independent systems meet and act on, or communicate with each other. In computer technology this is conventionally either a software interface (the languages and codes that the applications use to communicate with each other and with the hardware) or the hardware interface (the wires, plugs and sockets that hardware devices use to communicate with each other). However, in e-business it is more commonly used to describe the customer interface (the way in which the customer interacts with the e-business system in terms of navigating around the web site, identifying the products or services to be purchased and making the actual payment). A well designed interface is seen as an integral part of the overall customer 'experience'.

Internet2

Internet2 is a collaborative effort by over 180 U.S. universities to develop advanced internet technology and applications vital to the research and education missions of higher education. Among the applications internet2 members say they hope to see are digital libraries featuring streaming high-fidelity audio and video content, collaboration environments that encompass virtual laboratory support, remote instrumentation, interactivity, and tele-medicine, including remote diagnosis and monitoring. Whilst primarily aimed at the requirements of educational institutions, the technology being developed for internet2 is expected to be 100 to 1000 times faster than the current internet infrastructure and will subsequently be utilised for commercial purposes.

Internet Aggregated Buying

Allows organisations to link their purchases through a buying co-operative or a consortium in order to take advantage of specially negotiated or bulk order deals. The growth of e-procurement has made it easier to create such co-operatives and subsequently source the best deal through the use of features such as reverse auctions.

Internet banking

Ability to perform transactions and make payments via the Internet through a bank's secure website. Typically such banking allows the customer to make payments electronically, automatically transfer money between their accounts and view online statements. All of these activities can be carried out at any time, from any location where Internet access is available. Security is a key issue and users are required to authenticate themselves to the bank's website by means of passwords and user names. This has resulted in hackers attempting to trick users into disclosing such details by means of *phishing* e-mails.

Interstitial

Literally meaning 'in between', this is an advertisement that appears in a separate browser window while you wait for a web page to load. Interstitials typically contain large graphics and streaming presentations and some studies suggest that users are more likely to click on them as opposed to banner adverts. An interstitial is usually designed to move automatically to the page the user requested after allowing enough time for its specific message to be assimilated.

Intranet

Private company networks that use the same underlying architecture and network protocols as the internet. They run over a private internal network and are protected from unauthorised users by a firewall. Without the firewall unauthorised users could gain access via the internet, since both are connected via a common gateway. Because they offer broad bandwidth they enable users to search for, retrieve and publish information far more quickly than over the internet. Their primary role is to enable users to search their own company's world wide knowledge and information store from their own desktop, regardless of location.

IP Number (Internet Protocol Number)

Sometimes called a dotted quad. A unique number consisting of 4 parts separated by dots, e.g.

147.192.405.2

Every machine that is on the internet has a unique IP number – if a machine does not have an IP number, it is not really on the internet. Many machines (especially servers) also have one or more Domain Names. These refer to IP numbers but are far easier for people to remember.

IPsec (Internet Protocol Security)

An *IETF* standard for TCP/IP layer security that provides encryption, host authentication, and data integrity. IPsec is most commonly used in the implementation of *VPNs (virtual private networks)* and for remote user access through dial-up connection to private networks. One of the major benefits of IPsec is that security arrangements can be handled without requiring changes to individual user computers.

IP telephony

Refers to the use of an internet protocol (IP) network for carrying voice calls, fax or e-mail messages. This may be as part of a private IP network or over the internet.

IRC (Internet Relay Chat)

A protocol that allows two or more users to type messages which appear on each other's screens in close to real time. If multiple users log into a 'chat room' they have access to other users' handles (names) so they can direct messages to them.

IRTF (Internet Research Task Force)

Coming under the auspices of the Internet Society, the IRTF is composed of a number of small Research Groups. These Groups focus on topics related to internet protocols, applications, architecture and new technologies. They are made up of individual contributors rather than representatives of organisations. The results of the research are referred through to the IETF. For more information on the IRTF visit their website www.irtf.org

ISDN (Integrated Services Digital Network)

A high capacity telephone network where all information is transmitted in digital format, thus removing the need for a modem. The standard bandwidth is 64 kilobits per second, but higher bandwidth is possible depending upon local implementations. Its speed, combined with the ability to handle digital information, make it a popular choice for supplying fast internet connection to homes and small businesses.

ISO (International Organisation for Standardisation)

International standards making body, based in Geneva, Switzerland, probably best known for its work in the data communications area where it developed the internationally recognised seven layer network model called the Open Systems Interconnection (OSI) Reference Model. It is also actively involved in establishing standards in optics, image processing and video. It sponsors both *JPEG* and *MPEG*.

ISP (Internet Service Provider)

A company that provides access to the internet for businesses or private individuals. ISPs that are accessed by modem and telephone are often called dial-up services.

ITU (International Telecommunication Union)

Originally established in 1865 as the International Telegraph Union and subsequently renamed the International Telecommunication Union in 1934. It is an agency of the United Nations, acting as an impartial, international organisation within which governments and the private sector work together to coordinate the operation of telecommunication networks and services. The ITU's standardisation activities have played an important role in the growth of mobile telephony and the Internet, and are now helping to define the building blocks of the emerging global information infrastructure, and designing advanced multimedia systems capable of handling a mix of voice, data, audio and video signals. For more information visit <http://www.itu.int/home/index.html>

iTV (interactive television)

Television programming that allows viewers to interact in some way with television content as they view it. This may involve, for example, voting for who should be eliminated from a contest, picking the next action on a programme, or choosing from a menu of content options. The viewer can return information to the broadcaster from their home via a touchtone telephone, the web or directly over a two-way cable system.

IVR (Interactive Voice Response)

A software application that automates the handling of telephone calls. The caller's touchtone or spoken requests are answered with spoken information that is either in the form of pre recorded voice responses or is derived from data that is extracted from a database. Common applications include bank account balances, flight-scheduling information and simple order entry transactions. The main benefits of an IVR system are that it eliminates the need for agents to answer repetitive questions and enables callers to get the information they need 24 hours a day, seven days a week.

J

J2EE

A platform-independent, Java environment from Sun Microsystems for developing, building and deploying web-based enterprise applications online. The J2EE platform consists of a set of services, APIs, and protocols that provide the functionality for developing multi-tiered, web-based applications. It simplifies application development and decreases the need for programming and programmer training by creating standardised and reusable modular components.

Java

Developed by Sun Microsystems, Java is a programming language expressly designed for use in the distributed environment of the internet. It was designed to have the 'look and feel' of the C++ language, but it is simpler to use than C++ and enforces an object-oriented programming model. Java can be used to create complete applications that may run on a single computer or be distributed among servers and clients in a network. It can also be used to build a small application module or applet for use as part of a web page. Applets make it possible for a web page user to interact with the page.

JavaScript

Netscape's cross-platform object based scripting language for client and server applications (despite the fact that it sounds similar to Java there is only a partial relationship between the two languages). It can be used to create client side applications that run inside a browser, or server side applications that are hosted by the web server. JavaScript can also be used to create dynamic HTML pages that accept user input and store data, perhaps using a relational database.

JIT (Just In Time) manufacturing

Tight integration of the supply chain, enabling the buying organisation to achieve significant reductions in the levels of stock held.

Joe Job

An e-mail spam attack aimed at tarnishing the reputation of the apparent sender and to possibly induce the recipients to take action against him. The victim's e-mail address is used as the 'sender's address' and, in most cases, their website URL is advertised. The e-mail will not only be sent to thousands or even millions of addresses, but it will be sent multiple times - possibly dozens or hundreds - to each recipient before the attack ends. The term derives from an attack on Joe Doll, proprietor of Joe's CyberPost (joes.com).

JPEG (Joint Photographic Experts Group)

An internationally agreed standard for still-image compression and decompression that was devised by the JPEG, a specialist group set up by the ISO and CCITT. It is particularly effective in compressing realistic images such as photographs, allowing for compression rates of up to 20:1 without visible loss in quality.

K

Kerberos

A trusted third-party authentication protocol developed at the Massachusetts Institute of Technology (MIT). Kerberos lets a user request an encrypted ticket from a third party authentication process that can then be used to request a particular service from a server. The server requires a Kerberos ticket before it will proceed with any request. Once the server receives the ticket, it accepts it (if it is valid) and then performs the required service. Key to Kerberos is the fact that use of the ticket system means there is no requirement for user passwords to be passed across a network. This is because it employs a single sign-on environment where a user needs only to enter their password once during login and from thereon uses the ticket system.

Key logger

A small program designed to record which keys are pressed on a computer keyboard. The key logger is commonly downloaded unwittingly as *spyware* and executed remotely. The key logger program records each keystroke the user types and uploads the information over the Internet periodically to whoever installed the program. This information may contain details of passwords, usernames and online banking services, all of which can subsequently be used for fraudulent purposes.

Kiosk

A small physical structure containing a computer and display screen that is designed to provide the public with information. A touch screen is usually the favoured option, enabling the user to select the information, rather like browsing through a web site. They are used to provide travel information, places to visit, and guides to shopping malls and museums, for example. The information may be obtained from local storage, such as CD-ROM or DVD, from information feeds (giving live updates), or from the internet.

L

Landing page

Term used to describe the part of a website that respondents to an online marketing campaign are automatically directed to. In effect it is a mini- home page, intended to be part of the sales process, leading the prospect through to the completion of the sales transaction. Careful thought, therefore, needs to be given to its design, and the marketing and sale messages it contains.

LDAP (Lightweight Directory Access Protocol)

A software protocol for accessing information directories holding details of organisations or individuals on either the public Internet or a corporate intranet. Although not yet widely implemented, LDAP should eventually make it possible for almost any application running on virtually any computer platform to obtain directory information, such as e-mail addresses and public keys. On TCP/IP networks (including the Internet), the domain name system is the directory system used to relate the domain name to a specific network address. However, the domain name may not be known, so LDAP allows the user to search for an individual or organisation without knowing where they are located. Because LDAP is an open protocol, applications need not worry about the type of server hosting the directory.

Legacy systems

Usually refers to existing mainframe systems that an organisation already has in place. The programming skills required to maintain and operate these systems, such as DB2, Cics and Cobol, are known as legacy skills. They are still important in many organisations in view of the requirement to integrate legacy systems with the emerging e-commerce systems.

List server

Software that runs a mailing list. This will usually take the form of distributing new messages, newsletters, or other postings to the entire list of subscribers as they occur or are scheduled.

Load balancing

Technique used by a web site that is generating high levels of traffic to ensure that it is able to provide acceptable performance levels to visitors. It does so by using special software that diverts traffic from a very busy server to a less busy server. Load balancing requires at least three servers to achieve such a level of performance, and these servers are frequently distributed over different geographic locations.

Location aware services

Mobile Internet devices and third generation mobile networks now enable the use of positioning technologies to provide a range of location aware services. Such services exploit the knowledge of the geographical location of the user to enable content providers to offer a range of customised information, content and services that might typically include points of interest near the location, local hotels or restaurants, or details of special offers from local suppliers that may be of interest.

Log file

A file stored on a web server that keeps track of all of the events taking place on a web site. It will provide detailed information on the habits of visitors to the site; for example the domain type, the time of access, the pages visited and/or downloaded, keywords used and the search engine used to actually locate the web site. The information provided by the log file can be used to help indicate the parts of the site that are particularly popular and those which need enhancement, as well as being a valuable tool for providing usage data to supporting marketing campaigns.

Logic bomb

Programming code, inserted surreptitiously or intentionally into the software of an application or operating system. This lies dormant for a predetermined period of time, or until a specific event occurs, at which point the code is triggered into action. A logic bomb is malicious in intent, and can be viewed as a delayed action [virus](#) or [Trojan Horse](#). They can perform such actions as reformatting a hard drive or deleting, altering or corrupting data.

M

Mail bomb

Term used to describe the sending, or urging of others to send, large amounts of e-mail (often with large files attached) to a single system or person. The intention is frequently to crash the recipient's system. A successful mail bomb may cause the victim's disk quota to be exhausted, the disk holding their mailbox to fill up, or their computer to spend a large proportion of its time processing mail. Recent mail bomb campaigns have been undertaken in the UK against specific Internet Service Providers.

Mail drop

A temporary e-mail address set up and used by spammers to receive replies to spam. The e-mail account from which the spam was sent is then cancelled by the spammer as part of their efforts to avoid detection.

MAS (multi-agent systems)

Term used in artificial intelligence research to describe a loosely coupled network of software agents that interact to solve problems that are beyond the individual capacity or knowledge of a single problem solver. Each agent is a sophisticated computer program that acts autonomously on behalf of its users to solve complex problems. Increasingly, however, applications require multiple agents that can work together.

Mash-ups

A website or application that combines or remixes the data and services of other sites. Since Google published its Maps API, numerous mash-ups have been developed that integrate customised data on top of Google's map interface. For example details from a housing rental company could be overlaid on the map of a region so that it is possible to display geographical information for the rental properties.

Masquerading

In a security context masquerading is when a user presents himself or herself to a system or network as another user. This may be done in order to gain unauthorised access to information or resources, to disseminate information in somebody else's name, or to block or deny a system from operating correctly. A masquerade may be attempted through the use of stolen log-on IDs and passwords, through finding security gaps in programs, or through bypassing the authentication mechanism.

Malware

Short for malicious software, it is a generic term that covers a range of software programs that are designed to attack, degrade, infiltrate or prevent the use of an IT system or network. Types of malware can include *viruses*, *worms*, *Trojan horses*, malicious active content and *spyware*.

Megabyte

A unit of measurement for physical data storage capacity on some form of storage device such as a hard disk or optical disk. It is equal to two raised to the 20th power i.e. 1,048,576 bytes, though it is normally referred to as 1,000,000 bytes.

Merchant server

A server configured for electronic commerce. It provides services such as acting as an interface between the trader's bank and the internet, enabling traders to set up merchant credit card agreements and providing secure software and hosting services. There are also third party merchant services which offer their own special merchant credit card agreement and can take credit card payments on behalf of other traders, acting as a bureau service and taking a commission from each transaction.

Mesh networks

Based around a network architecture in which each node has a dedicated connection to all other nodes. Implementations are typically leased line networks that provide a connection between each site and every other site. Advantages of mesh networking include high availability of efficient transmission links of high quality. Disadvantages include high cost and the difficulty of configuration and reconfiguration. Recent developments have seen the emergence of wireless mesh networks. These are capable of handling many-to-many connections and dynamically updating and optimising these connections as, for example, the mobile devices utilising them move around.

Metamediary

An agent that represents a cluster of manufacturers, e-tailers and content providers, who are all organised around a life event (such as a wedding) or major asset purchase (such as a car). Information about such events is assembled by the agent from all the selling firms, who in turn pay commission to the agent for any referrals. From the consumer's viewpoint, the metamediary reduces search times for the product or service in question and provides relevant and unbiased content information about any proposed purchase.

Meta tag

The keyword and description commands used in web page code to help search engines index the web pages. The meta tag is placed near the top of the HTML in a web page as part of the heading. The most common content of meta tags are page descriptions and keywords. The page description tag should list the words or phrases that best describe the contents of that specific page. This will be used on the search engine displays so must be carefully chosen. The key word tag provides the opportunity to add relevant words that a customer might use in their search. The creator of a web page should, therefore, ensure that meta tags with appropriate keywords and description are included to help make the page rank higher in search results.

Metcalfe's Law

Robert Metcalfe founded 3Com Corporation and designed the Ethernet protocol for computer networks. Metcalfe's Law states that *the usefulness, or utility, of a network equals the square of the number of users*. This is best illustrated by the example of the telephone, which is of very limited use if only you and your best friend have one. If a whole town is on the system, it becomes much more useful. If the whole world is wired, the utility of the system is phenomenal. Therefore telephone use had to reach a critical mass, or number, of users and so it is with any technology. Until a critical mass of users is reached, a change in technology only affects the technology. But once critical mass is attained, social, political, and economic systems change. This is true of the internet which reached critical mass in 1993, when there were roughly 2.5 million host computers on the network. By November 1997 the vast network contained an estimated 25 million host computers.

Micro fuel cells

Micro fuel cells are intended to address the inadequacies of conventional batteries in meeting the needs for the increasing power and complexity of portable electronic devices such as cell phones, laptop computers, and video recorders. Currently under development, they are designed to be compatible replacements for conventional cellular phone battery packs. Better, smaller, less-costly, environmentally safe, and much more efficient, the micro fuel cells are expected to drive a digital cellular telephone on standby for six months as opposed to two weeks with lithium ion batteries. In addition, they will provide one week of talk time instead of the current five hours that lithium ion battery-powered cell phones now provide.

Micropayment

Online transactions for amounts as low as one US cent, or even lower. They can be used for billing systems for banks, financial institutions and telecom companies, but the main demand is from content and entertainment providers who might want to charge, for example, per image viewing from a photo library or per minute on online gambling.

MID (Merchant Identification Number)

A number provided by a financial institution to identify the merchant in an e-commerce transaction. The MID is synonymous with the bank account, and is the way in which the acquiring bank or financial institution associates secured funds with a particular online merchant. The number is provided by the financial institution at the time that a merchant account is initially approved and obtained.

Middleware

A general term for any programming that serves to act as a conduit between two separate and often already existing programs. A common application of middleware is to allow programs written for access to a particular database to access other databases. Middleware programs also frequently provide messaging services to enable different applications to communicate.

MIME (Multipurpose Internet Mail Extension)

An internet protocol that allows the user to send binary files across the internet as attachments to e-mail messages. These files include spreadsheets, audio data, pictures, animated graphics and video.

Mirror sites

Web sites that are an exact replica of the original site and have been copied to other servers in order to spread the load on the original server. They can assist in reducing network traffic, provide improved access to the files held on the web site and speed up the download times for customers. Mirror sites are particularly useful when the original web site is geographically distant from large numbers of users who may either wish to access it on a regular basis or have a requirement to download large volumes of files from the site. For example heavily used USA sites will frequently be mirrored in the Europe, the Far East and Australasia.

MMS (Multimedia Messaging Service)

Similar to **SMS** (Short Messaging Service), but in addition to plain text, MMS messages may include multimedia elements such as pictures, video and audio. These multimedia elements are included in the message, not as attachments as with e-mail.

Mobile commerce

The delivery of electronic commerce capabilities directly into the consumer's hands, anywhere, via the use of wireless networks. Increasingly the emphasis is on providing personalised services to the user, typically based upon their location. So, for example, on arrival at a railway station the user might wish to be provided with details of hotels rooms and restaurants within a two mile radius.

Molecular transistors

Transistors are the basic building blocks of today's microelectronics industry, underpinning a range of diverse applications from FM radios to the PC. Molecular transistors hold great promise for super-quick switching, and are potentially capable of revolutionising the electronics field. A molecular transistor uses a single molecule as its active region. The amount of current which can flow through the miniscule volume of the molecule is determined by, among other things, the electronic structure of that molecule. If tiny changes can be induced in the electronic structure of a molecule, then the current carried by that molecule can be manipulated. Such a device would be an order of magnitude smaller than the current cutting edge technology and could increase dramatically the switching speed. Transistors of this size would allow the equivalent circuitry of a current PC to fit in an area smaller than a sugar cube.

Moore's Law

Gordon Moore, founder of Intel Corporation, based his business on the law that he developed. Moore's Law states that *every 18 months, processing power doubles while cost holds constant*. His law has been true through the years, and it appears that it will remain true for the foreseeable future. Telecommunications bandwidth and computer memory and storage capacity are experiencing a similar fate. This makes it very affordable for individuals and small businesses to be equipped with the electronic means to conduct commerce and transfer information as fast and freely as large corporations can.

MP3

MP3 is an acronym for MPEG layer 3, which is a compressed audio format. A compression ratio of up to 12 to 1 is possible, which produces high sound quality and has made it the standard file format for the compression of music. Since it is relatively easy to create MP3 files from CD selections and make them available on websites for downloading, companies and sites that promote the MP3 format are sometimes accused of encouraging copyright violations. However, other developments have seen some music publishers providing sample cuts in the MP3 format as a way to entice users to buy a CD.

MPEG (Moving Pictures Experts Group)

An industry committee that is developing a set of compression standards for moving images (i.e. film, video and animation) that can be downloaded and viewed on a computer.

MSP (Managed Service Provider)

A company that delivers information technology infrastructure management services over a network to multiple clients on a subscription basis. With most MSP offerings, the MSP maintains a set of monitoring and management tools that monitor a client's network and systems. Embedded software agents are used to obtain the required performance information. The collected information is then sorted, archived, and logged into a database for further processing and action as required by the particular customer. A critical area is the MSPs ability to monitor and report on IT network and systems performance and take defined actions that are customer-specific.

Multichannel marketing

Marketing approach that offers customers more than one way to buy something, for example website, retail outlet and catalogue. This approach is increasingly used by companies such as Argos, where the online and offline brands are consistent in terms of content and overall visual appearance, and the customer has the option of different purchasing environments with little variation in terms of price and product availability.

Munging

Term used to describe the deliberate modification of one's e-mail address, with the intention of making the address unusable for the junk e-mailers who build up mailing lists from the internet for spamming purposes. *Spambots* are used to scour the internet, particularly newsgroups and discussion groups, for e-mail addresses. Anything with an @ sign is usually considered to be an address. Therefore munging is a technique used to ensure such programs are unable to pick up your correct e-mail address. Examples might include:

yourname(AT)example(DOT)com

see_my_sig@for.my.real.address

A key factor in munging is to ensure that anybody reading the address can easily work out what the correct address should be.

mWare (mobileware)

Generic term used to describe computer software that is specifically designed to run on mobile devices. Google is leading the way with mobile versions of Google Maps, Gmail, SMS, and News.

N

Nearshoring

Form of offshore outsourcing where the outsourced labour force is located within 500 miles of the outsourcing customer. This offers the customer the benefits of similar time zone and culture over conventional outsourcing arrangements. See also *offshoring*.

Non-repudiation

The ability to prove irrefutably to a third party that an action has occurred. Within e-business this relates to the ability to prove that a document can only have been sent by a named originator. *Digital signatures* can be used to provide non-repudiation of origin. Since only the originator should be able to access the private key, the signature is unforgeable evidence that the originator generated the message. For actions to be legally valid, they need to be bound in time to the parties involved. A digital signature contains a date and time stamp, but this may not be reliable since it is taken from the computer's clock which may be set incorrectly. Moreover if a private key is compromised and has to be revoked then the time-stamp would show whether the document was signed before or after the revocation. Therefore the digital signature needs to be used in conjunction with a certified time-stamping service or in an environment where falsification of date and time is not possible.

Nominet

Nominet is the .uk domain registry that registers all UK domain names. It is a not-for-profit company limited by guarantee and has members who act as shareholders. Anyone can become a member, but most are *ISPs (Internet Service Providers)*. In addition to maintaining the register of all .uk domain names it also offers a range of associated services, including renewing registrations every two years and administering transfers of domain names between parties. The Nominet website also incorporates the WHOIS service, which is an electronic directory that provides details on domain names that have been registered under .uk. For more information visit <http://www.nominet.org.uk/>

O

OASIS (Organisation for the Advancement of Structured Information Systems)

A not-for-profit, global consortium that drives the development, convergence and adoption of e-business standards. OASIS produces worldwide standards for security, web services, XML conformance, business transactions, electronic publishing, topic maps and interoperability within and between marketplaces. It has more than 400 corporate and individual members in 100 countries around the world. OASIS and the United Nations jointly sponsor ebXML, a global framework for e-business data exchange. It also operates XML.org, a community clearinghouse for XML application schemas, vocabularies and related documents. More information can be found at www.oasis-open.org

OBI (Open Buying on the Internet)

A standard built around a common set of business requirements and supporting technical architecture, specifications and guidelines. The intention is to create a standard that will enable companies to integrate their various e-commerce applications.

OCR (Optical Character Recognition)

A means of identifying text characters in a digitised image. Now commonly used in organisations to extract data from printed documents for further processing or electronic archiving.

Offshoring

Shortened term for offshore outsourcing, this involves the relocation of business processes using labour that is normally based in a remote overseas location, taking advantage of advances in, and greater reliability of, communications technologies. Telemarketing, call centres, software development and business process outsourcing are common candidates for offshore outsourcing. The services may be contracted directly to a local outsourcing supplier, or to an outsourcing company which has set up a subsidiary company for operation in the remote location. See also *nearshoring*.

OLAP (Online Analytical Processing)

Software and applications that provide fast access to multi-dimensional data in order to address complex analytical and ad-hoc queries. OLAP data is stored in a multi-dimensional database, thereby enabling the user to easily and selectively extract and view it from different points-of-view. The OLAP Report describes the concept of OLAP as Fast Analysis of Shared Multidimensional Information (FASMI).

OLED (Organic Light Emitting Display)

A display technology used in cellular phones, digital video cameras, DVD players, personal digital assistants and notebooks. The fact that these types of display do not require backlighting means that they are thinner and weigh less. They also have a wide viewing angle up to 160 degrees even in bright light, and they use only two to ten volts to operate. It is envisaged that developments in this technology, including the flexible organic light-emitting display (FOLED), will result in the availability of portable, roll-up displays in the next few years.

Online revenue contribution

Term used to describe the direct contribution of the Internet or other digital media to the overall sales of a business. It is usually expressed as a percentage of the overall sales revenue.

Ontology

An ontology is a controlled vocabulary that describes objects and the relations between them in a consistent way for knowledge sharing. This network of relationships is self-describing and used to track how items or words relate to one another. Ontology is the framework of the semantic web, and permits intelligent navigation.

Open source

Open source software is software whose original source code is publicly available and may be freely modified or enhanced by developers. The software is usually developed as a public collaboration, with projects of any size and weight tending to collect communities around them. No licence fees are charged for using or changing open source software. However, it should be noted that licensing is still important in open source, because the principle is based on everyone being able to use, modify and redistribute software without paying licence fees, providing they make their modifications available under the same licence or a compatible licence. The aim is to use copyright law to protect the rights of users, rather than those of the developer. Most open source projects are free of royalties or fees, but open source is not completely free of charge. Rather, it is free as in unconstrained and freely available. Open source is sometimes, therefore, referred to as free-licence software, rather than free software. Popular open source software includes Apache, PHP, Mozilla Firebird and the Linux kernel.

Operating system

The computer program that controls the components of a computer system and manages all the other programs running on the computer. An operating systems provides a software platform on top of which application programs can run. It is used for starting the computer and performing important tasks such as receiving input from the keyboard and mouse, sending information to the screen, keeping track of files and directories on the disk, as well as controlling the various units such as disks and printers. Examples of operating systems are Windows XP, Mac OS, UNIX and Linux.

OSI (Open Systems Interconnection) Reference Model

A reference model developed by the *ISO (International Organisation for Standardisation)* that is the only internationally accepted framework for communication between different IT systems from different vendors. It creates an open systems networking environment where, theoretically, any vendor's IT system, connected to any network, can freely share data with any other IT system on that network. The communications process is divided into seven different categories with Layers 1 to 3 dealing with network access and Layers 4 to 7 dealing with the end-to-end communications between the message source and the message destination.

P

P-card (purchasing card)

A multi-purpose payment card aimed at streamlining the traditional order and payment processes within businesses for low value transactions. Such a card gives individual managers within the ability to make multiple purchases at their discretion, whilst reducing the administrative cost associated with authorising, tracking, paying, and reconciling those purchases.

Page hit

Often referred to simply as a *hit*, it refers to each single file request for data from a web page or file. A single web page usually contains an HTML text file and a number of graphic or image files, each of which equates to a hit. So the number of hits resulting from the download of a single web page can total around 15. It should not be confused with 'page views' which is the actual number of pages that a visitor views during a website visit and which is, therefore, a more meaningful way of measuring the level of usage of a website.

Page impression

A unit of measurement used for banner advertisement. Each unique visitor who views a page on which a specific advert is located is counted as a one page impression. Total page impressions, therefore, are the total number of visitors who land on a particular web page within a site. Advertisers will agree to pay a rate based upon the number of page impressions, though the more popular model has tended to based upon click throughs.

Passive tag

An *RFID* tag without its own power source and transmitter. When radio waves from the RFID reader reach the chip's antenna, the energy is converted by the antenna into electricity that can power up the microchip in the tag. The tag is able to send back information stored on the chip. Such tags have practical read distances ranging from about 2mm up to a few metres. The cost can vary from around 15p up to a few pounds, depending on the amount of memory on the tag, packaging and other features. See also *active tag*.

Password

A secret series of characters that enables a user to gain access to a file, computer or program and prevents unauthorised use. It is important that users are encouraged to set passwords that contain letters, non-letters, numbers and uppercase letters and are used in a combination that is difficult to guess, as poorly set passwords can compromise the security of the computer system. A password is usually used in conjunction with a *user ID*.

Patch

A small piece of software that is designed to update or fix problems with a computer program. It will usually be free to download and is intended to be installed on top of the existing program. The patch may be intended as an upgrade to add new features, as a quick repair job to fix a known problem, or as a measure to address an identified security vulnerability with the computer program.

PDA (Personal Digital Assistant)

A small mobile hand-held computer that typically provides calendar, address book and note taking applications for both personal and business use. Increasingly, web browser and media player applications are also included. Small key boards and pen-based systems are used for input. A variation of the Microsoft Windows operating system, known as Windows CE, is also offered by some PDAs. A recent trend has been to combine PDAs with telephones and paging systems. This only serves to reinforce the view that PDAs will form an integral element of the mobile commerce marketplace, where e-business services will be made available to users who are on the move.

PDF (Portable Document Format)

A type of file created by Adobe Systems that captures all of the elements of a printed document as an electronic image that can be viewed, navigated and printed. It also enables these fully formatted high resolution images to be easily transmitted across the internet and viewed on any computer that has Adobe Acrobat Reader software. A proprietary reader is available free of charge at the Adobe web site (www.adobe.com). PDF files are especially useful for documents such as magazine articles or product brochures in which you want to preserve the original graphic appearance online. A PDF file contains one or more page images, each of which you can zoom in on or out from as well as being able to page forward and backward.

Penetration testing

Refers to the use of 'tiger teams' or groups of ethical hackers that an organisation can hire to perform a variety of tests on the security of their network. The intention is to identify any potential vulnerabilities in the security of the network (including those that could be exploited by any Denial of Service attacks) before a potential hacker is able to do so.

PERL (Practical Extraction and Reporting Language)

A robust programming language, developed by Larry Wall, that is frequently used for creating CGI programs on web servers. This is because it is a script language that can read and write binary files, is able to process very large files and has good text manipulation facilities. It combines some of the best features of C and also includes a number of popular UNIX facilities. In general though, PERL is easier to learn and faster to code than the more structured C language.

Permission marketing

Describes the situation where customers agree (or opt in) to be involved in the marketing activities of an organisation. There is frequently some form of incentive offered in order to get the customer to initially agree, with additional incentives offered over a period of time to ensure that they continue to do so. Examples include airlines offering customers details of special low fares, or ticket agencies providing advance notification of forthcoming events.

Petabyte

A unit of measurement for physical data storage capacity on some form of storage device such as a hard disk or optical disk. It is equal to two raised to the 50th power i.e. 1,125,899,906,842,600 bytes, the equivalent to one thousand *terabytes*.

PGP (Pretty Good Privacy)

An e-mail security program. It is available free of charge on the internet and works on a variety of platforms. It uses public key cryptography and gives users privacy and authentication. Since it was introduced in 1991 it has become somewhat of a standard for encryption on the internet, largely because of its availability.

Pharming

A scamming practice in which the perpetrator redirects a user from a legitimate website that they intend to visit and leads them to a malicious one. The bogus site to which the user is redirected looks the same as the genuine site and will encourage the user to provide personal information such as a credit card number, bank account number or a password. Once obtained, this can be used for identity theft. One of the more common techniques used in pharming is known as DNS poisoning, in which the domain name system table in a server is modified so that someone who thinks they are accessing a legitimate website is automatically directed toward a fraudulent one without their knowledge or consent. See also [phishing](#).

Phishing

Term used to describe the use of bogus e-mails and websites to trick the user into supplying confidential or personal information. Typically the user receives an e-mail that purports to come from a reputable organisation such as a bank. The e-mail includes what appears to be a link to that organisation's website. However, if the user follows this link, they are connected to a replica of the website, where they are encouraged to provide personal financial details such as account numbers, PINs or passwords. Once obtained, these details are then used for fraudulent purposes by the hackers who created the bogus site.

Piconet

A small, low bandwidth Bluetooth network, with up to eight devices connected in an ad-hoc fashion. When a piconet is formed, one device acts as the master while the others act as slaves for the duration of the piconet connection. It can be used for tasks such as the wireless synchronisation of laptop computers with desktop computers, and wireless printing from laptops, PDAs or mobile phones.

PKI (Public Key Infrastructure)

The application of public key technology in e-commerce to help identify people and secure transactions. This uses cryptography to support a variety of functions, including: the ability to confirm the identity of an individual or company as established by an intermediary (the Certification Authority) trusted by your company; the ability to prove that a transaction originated with that individual or company, so it cannot subsequently be denied (often called non-repudiation); the ability to seal data, such as transactions, to prevent the contents being altered; and the ability to encrypt data to prevent it being seen by unauthorised people.

Plug-in

A specialised software program that is used to expand the capability of a web browser. It is generally used to provide interactivity and functions (such as moving and animated objects and live audio) that make use of the computer's sound or video cards. Some of the more popular examples include Shockwave from Macromedia and Real Audio which reads sound files. Most users wait until they need a particular plug-in before downloading it. If one is required to access a particular file, then there is usually a link enabling the download from that web page.

Podcasting

A term that derives its name from the iPod™ manufactured by Apple Incorporated. The name podcast is no longer specifically related to the iPod but is used to describe any web feed of audio or video files placed on the Internet for anyone to subscribe to. Podcasters' websites also may offer direct download of their files, but the subscription feed of automatically delivered new content is what distinguishes a podcast from a simple download. For example the BBC is currently running a podcasting trial as a way to subscribe to radio programmes and have them delivered to your personal computer.

PoP (Point of Presence)

The telephone exchange from which the services of an ISP can be accessed. In regions with good coverage the POPs should be distributed in such a way that all customers can dial in and gain internet access with a local call.

POP (Post Office Protocol)

The most common internet standard for e-mail. POP3 is a client/server protocol in which all new incoming messages are downloaded from the server as soon as the e-mail account is accessed. All POP e-mails are stored on the server until the user checks their mailbox. It should not be confused with IMAP, an e-mail client program that can not only retrieve e-mail but also manipulate messages stored on the server without having to actually retrieve the messages.

Portal

A web site that acts as a gateway and starting point to access the WWW. Examples of large industry-wide portals include AltaVista, AOL, Lycos and Yahoo, with the typical services offered being directories of web sites, facilities to search for other sites, news, weather information, stock quotes and online shopping. There are also **B2B** portals that address specific business groups or communities and which commonly facilitate business transactions between the member organisations.

PPTP (Point To Point Tunnelling)

A standard protocol, sponsored by Microsoft, that allows organisations to extend their own corporate network through private 'tunnels' over the public internet. Effectively an organisation uses a wide area network as a single local area network. An organisation no longer needs to lease its own lines for wide area communication but can securely use the public networks. This kind of interconnection is known as a Virtual Private Network.

Privacy policy

Any organisation engaged in online activities or electronic commerce has a responsibility to adopt and implement a policy for protecting the privacy of individually identifiable information. A privacy policy must be easy to find, read and understand. The policy must be available prior to or at the time that individually identifiable information is collected or requested. The policy must state clearly: what information is being collected; the use of that information; possible third party distribution of that information; the choices available to an individual regarding collection, use and distribution of the collected information; a statement of the organisation's commitment to data security; and what steps the organisation takes to ensure data quality and access. Individuals must be given the opportunity to exercise choice regarding how individually identifiable information collected from them online may be used when such use is unrelated to the purpose for which the information was collected. At a minimum, individuals should be given the opportunity to opt out of such use.

Private key

A secret value used in public key cryptography for deciphering a message enciphered by a public key, or for enciphering a message to be deciphered by a public key.

Profiling

The collection and analysis of personal data to generate digital dossiers on the shopping and buying habits of e-business customers. The information gathered through profiling can be exploited by marketers to generate special offers and 'personalised' marketing messages to customers, as well as enabling the opening screen of the web site to be customised according to the customer's identified preferences.

Proxy bid

A method of bidding commonly used on online auction sites such as eBay in which a predetermined maximum bid is submitted by the bidder, and this bid is automatically incremented each time the bidder is outbid until they either win or their maximum bid is reached. This eliminates the need for bidders to constantly watch the auction listings.

Proxy server

A server that acts as an intermediary between a company's internal network and the Internet. The internal network is protected by firewall software installed on the proxy server. This software enables the proxy server to keep the two worlds separate. All outward *HTTP* requests from the internal network pass through the proxy server and similarly all information retrieved comes back in via the proxy server and is then passed back to the client. Benefits of using a proxy server include stopping employees from accessing undesirable websites, improving performance by storing web pages locally, and hiding the internal network's identity in order to make monitoring more difficult for external users.

Public key

A publicly known value used in public key cryptography for deciphering a message enciphered by a private key or for enciphering a message to be deciphered by a private key.

Pull technology

The type of technology used on the internet where visitors to web sites search for and request information for subsequent downloading to their computer.

Push technology

Technology that enables information to be delivered from the web site to the customer. Typical examples include where the customer wants to be updated with new content on the server and registers for information, or where the customer receives content updates regularly and automatically. This contrasts with pull technology where the user initiates the downloading of content.

R

Red hat

Red Hat is a company dedicated to *open source* software. Founded in 1993, the company now has more than 700 employees and 22 locations worldwide and is the largest distributor of the Linux operating system. Red Hat provides operating system platforms along with a range of support, training, and consulting services.

Registration Authority

A component of Public Key Infrastructure that verifies requests from its customers for a *digital certificate* through the provision of a trusted link to a Certification Authority, with whom they can register to obtain the certificate.

Reintermediation

The creation of new web-based intermediaries between customers and suppliers providing services such as supplier searches and product evaluation. E-business was initially viewed as an opportunity for selling direct to consumers, leading to the rise of *disintermediation*. However, it was subsequently realised that purchasers of products and services still needed assistance in the actual selection processes, hence the recent growth in reintermediation.

Repositories

In e-business terms this is a component of Public Key Infrastructure, that holds signed documents and other items securely for preservation over long time periods.

Reverse auction

Generally speaking B2B auctions reverse the traditional auction formula where the aim is to help the seller get the best price. A reverse auction is buyer-controlled and is used to attract bids, with the lowest bid winning. Buyers post details of the goods they want to buy and suppliers compete to provide them. The buyer, in effect, pits the suppliers against each other in a bidding war. The buyer reviews the bids, considers factors such as the location of the supplier and the cost of delivery, and then selects the preferred bid. Reverse auctions are used as a means of carrying out large corporate purchases, for example a major motor manufacturer buying wing mirrors. They are used to drive down prices for the buyer whilst, at the same time, expanding the range of choice among suppliers.

Reverse link checker

A website management tool that checks on other sites with which the owner of a website has entered into a link exchange programme in order to ensure that link exchange partners are fulfilling their obligation in terms of including a link back to the owner's website.

RFID (Radio Frequency Identification)

A system for tagging and identifying mobile objects such as store merchandise and postal packages. RFID allows objects to be labelled and tracked as they move from place to place and works by using small pieces of hardware called RFID chips. These chips feature an antenna to transmit and receive radio signals. So-called passive RFID chips do not have a power source, but active RFID chips do. RFID chips may be attached to objects, or in the case of some passive RFID systems, injected into objects. Whenever a reader within range sends appropriate signals to an object, the associated RFID chip responds with the requested information, such as an identification number or product date. Passive RFID systems derive their energy to send responses from the incoming signal. The reader, in turn, displays the response data to an operator. RFID systems were created as an alternative to barcodes. Advantages over barcodes include the fact that RFID allows objects to be scanned from a greater distance, supports storing of data, allows more information to be tracked per object, and does not necessitate line of sight scanning.

RFID tag

A microchip attached to an antenna that is packaged in a way that it can be applied to an object. The tag picks up signals from, and sends signals to, a reader. The tag contains a unique serial number, but may have other information, such as a customer's account number. Tags come in many forms, such as a smart label that can have a barcode printed on it, or the tag can simply be mounted inside a carton or embedded in plastic. See also [active tags](#) and [passive tags](#).

Rogue dialler

A malicious piece of software that is aimed at defrauding those Internet users who still access the web via a telephone line and 56K modem. When accessing the Internet, the dialler changes the dialled number to one belonging to a premium rate service, with the Internet user thinking they are still connected to their normal dial-up service. The dialler software is usually installed without the knowledge of the user, typically via infected or malicious attachments that are received and executed by e-mail, malicious software that is embedded into a surfed web page, or through downloads where the software purports to be something else. In all cases the result is an unexpectedly large telephone bill.

Router

A device that connects two similar networks having the same network protocol. It operates at the network layer and forwards packets based upon their network layer address. It also chooses the best route between two networks when there are multiple paths between them. In e-commerce terms it will select the best physical connection to the server where a web site is stored

RSA

The most commonly used encryption and authentication algorithm, developed in 1977 by Ron Rivest, Adi Shamir, and Leonard Adleman. The algorithm is included as part of the web browsers from both Microsoft and Netscape. The encryption system is owned by RSA Security and the company licenses the algorithm technologies and also sells development kits. The technologies are part of existing or proposed web, internet, and computing standards. The mathematical details of the algorithm used in obtaining the public and private keys are available at the RSA web site www.rsasecurity.com

RSS (Really Simple Syndication)

A lightweight XML format designed to automate the sharing of headlines and other web content, making it easier for websites to share content and stories from other sites. It was originated by UserLand in 1997 and subsequently used by Netscape. RSS has evolved into a popular means of sharing content between sites, with users including the BBC, CNET, CNN, Disney, Motley Fool, Wired, Red Herring and ZDNet. It helps to solve the myriad of problems webmasters commonly face, such as increasing traffic, and gathering and distributing news, and can also be the basis for additional content distribution services. In addition web surfers can use sophisticated news readers to surf headlines using RSS aggregators.

S

SaaS (Software as a Service)

A model of software delivery where the client organisation pays for using the software rather than owning it. The software provider provides the maintenance, technical operation, support and disaster recovery for the software, which is delivered to the client via the Internet. The client pays an agreed monthly subscription fee for the use of the software which is hosted on the software provider's server.

Safe harbour

An agreement signed between the European Union and the United States in 2000, whereby U.S. companies that agree to uphold European privacy laws are allowed to export and handle personal data (such as names and addresses) of European citizens. The agreement was set up in response to the fact the US privacy laws were less stringent than the European Laws. In particular the 1998 European Directive on Data Protection required that the subjects of personal data should have a right to know how that data is being used and be given opportunities to review and correct it. Safe Harbour therefore stipulates that U.S. companies collecting personal data must inform the subject that the data is being gathered, and tell them what will be done with it; they must obtain permission to pass on the information to a third party; they must allow people access to the data gathered; in addition data integrity and security must be assured.

Sandbox

A security measure used in the Java development environment. The sandbox is a controlled environment which is used when creating an applet. The environment imposes strict limitations upon what system resources the applet can request or access, thereby limiting any potential problems that it may cause to the system. In an anti-virus context, sandboxes can also be used when executable code comes from unknown or untrusted sources, enabling the user to run the untrusted code safely.

Scalability

Refers to the ability of a computer application or product to continue to function effectively as it is changed in size or volume to meet a user need. Typically the rescaling is to a larger size or volume. For example an e-business venture may start out with a small number of customers and then attract a rapidly growing number as the product or service it is selling becomes increasingly popular. The key factor is that the technical infrastructure has the capability to respond quickly to the changing requirements in order to fully meet the demands of the growing customer base. This may involve employing more powerful processors or additional servers to handle the increased demand.

Search engine

A software tool that creates indexes of web sites based upon their titles, key words or the full text of files. The search engine has an interface that allows the user to key in specific search terms and then presents them with a list of those web addresses that meet the specified requirement. The list is presented in hypertext form which means that the user can click on any item in the list and go directly to that web site.

Section 419 scam

A type of scam in which an e-mail from Nigeria, or other overseas country such as Sierra Leone or the Philippines, offers the recipient the 'opportunity' to share in a percentage of large amounts of money that the author, a self-proclaimed government official, is trying to transfer illegally out of that country. The recipient is encouraged to send information to the author, such as blank letterhead stationery, bank name and account numbers and other identifying information. In reality, the money does not exist and the victim eventually ends up with nothing but loss. Such schemes originated in Nigeria and violate section 419 of the Nigerian criminal code, hence the 'section 419 scam'.

Secure payments system

The means by which a customer (be it a business or a consumer) is able to pay securely for goods or services purchased from an e-commerce provider. The key to this is the ability to exchange secure transactions across the internet for payment details such as credit card numbers. *SSL (Secure Socket Layers)* is the most widely used data for encrypting data on the internet. Meanwhile the *SET (Secure Electronic Transaction)* specification is used for handling funds transfer from credit card issuers to a merchant's bank account. It uses a variety of *encryption* techniques, *digital signatures* and *certificates*.

Semantic web

A concept developed by Tim Berners-Lee, the man credited with the invention of the World Wide Web. Currently the web's search engines provide lists of links to information resulting from keyword searches. The idea behind the Semantic web is to make it more intuitive to users needs, giving exact results each time. This would be achieved through the use of context-understanding programs that can selectively locate the actual web pages containing the information that a user requires.

Server

The hardware on which a web site is stored. Servers can be accessed remotely, via routers, in order to view the contents of the web site. Also the maintenance of the web site can be undertaken remotely. The software for the administration of the web site also constitutes part of the server.

Server farm

A single physical location where a group of computers performing server functions are housed. A server farm streamlines internal processes by providing centralised access control, file access, printer sharing, and back-up for users. The servers may have individual operating systems or a shared operating system and may also be set up to provide load balancing when there are many server requests. When one server in the farm fails, another can act as a back-up.

Session cookie

A type of cookie that is stored temporarily during a website visit and is then erased when the user closes the web browser. Session cookies do not collect information about the user's computer and are stored in temporary memory rather than on the hard drive.

SET (Secure Electronic Transaction)

A standard for secure transactions developed by industry giants such as Visa, MasterCard, Microsoft and IBM. The customer sets up a valid account and then receives a *digital certificate* validating their identity. Similarly merchants also need to be certified, being issued with a digital certificate as part of their agreement. Once the price and product information are processed, the merchant verifies the customer's *digital signature* and sends the order to the bank with its own certificate and payment information. At the end of the process the bank verifies the merchant's signature and payment component of the message and then authorises payment so the merchant can fulfil the order.

Set top box

Device connected to (or increasingly integrated with) a television set to provide additional cable, satellite or internet services.

SGML (Standard Generalised Markup Language)

An internationally agreed language intended for implementing formatting information in documents. XML is a direct descendent of SGML in that it is used to describe computer data in a standard way.

Shareware

Software that is made available to users, by the developers, at no costs. Manufacturers of shareware may ask users to review the applications as part of the agreement, often as the prelude to a commercial launch of the product. Others use the concept to gain a wide user base that can be exploited at a later date when a new version of the software, or a related product, is made commercially available.

Shill bidding

A process found on online auction sites where the seller, or someone associated with the seller, bids on the items they are trying to sell in order to inflate their price and desirability. Such bids damage the buyers' faith in the integrity and fairness of the marketplace and for that reason are a forbidden practice on established auction sites such as eBay.

Shopping cart (or basket)

Software that facilitates easy selection and payment for multiple products purchased by a customer from an e-commerce web site. The analogy with the supermarket shopping trolley is intended to make the selection and purchasing of goods as intuitive as possible.

Signature line

A set of typically between four to eight lines placed at the end of an e-mail message that identifies the sender's details. This might include full name, contact details, job title, web site address and some short personal statement. The content only needs to be written once and it will then be placed in the e-mail's signature file for automatic appending.

SIP (Session Initiation Protocol)

An Internet Engineering Task Force (*IETF*) standard protocol that sets up, manages and then terminates a multimedia session. The session itself can be used for video, chat, gaming, virtual reality and voice. This latter use is particularly important in the area of *Voice over IP (VoIP)* and SIP is becoming the de facto standard in this area.

Site analysis tool

A piece of software that enables the owner of a web site to measure the usage patterns of the site. It does this in terms of statistics such as the number of visitors, the number of new visitors, if visitors are returning, which search engines they are finding the site through, and which parts of the site they are making particular use of.

Skyscraper advert

A type of banner advert that appears on the side of a web page and remains visible to the user as they scroll down through the page.

SLA (Service Level Agreement)

A contract between a service provider and a customer that specifies, in measurable terms, what services the provider will deliver to the customer. In addition to being used by commercial service providers such as ISPs and outsourcing companies, many internal IT departments in major organisations have also adopted the concept of an internal service level agreement, so that services for their customers (internal users in departments within the organisation) can be measured, justified, and perhaps compared with those of outsourced providers. Typically the metrics of an SLA include the percentage of time that services should be available, specific performance benchmarks against which actual system performance can be measured, and the expected response times for dealing with a variety of technical issues and problems.

Smartphone

Generic term used to describe a phone with a microprocessor, memory, screen, and built-in modem. The smart phone combines some of the capabilities of a PC in a handset device and typically includes Internet connectivity

SMS (Short Message Service)

A service for sending brief text messages of up to 160 characters to mobile phones that use GSM communication. The mobile handset displays the message in much the same way as a pager would. However SMS messages do not require the mobile phone to be active and can be held for a number of days until the phone becomes active. Equally the phone does not have to be within a certain range of the sender in the way that a pager does. Whilst increasingly popular with teenagers, SMS services also have a number of practical business applications such as notifying staff on the road of appointments or enquiries

Sniffer

A program that monitors data travelling over a network. It can be used as a legitimate network management tool to detect bottlenecks and problems and ensure that traffic flows efficiently. However, it can also be used for illicit purposes, since it may be able to read the data in a packet as well as the source and destination addresses. It can, therefore, be used by a hacker to steal information off a network, and is increasingly used for the purpose of stealing a user's password or credit card number.

Sniping

The practice of placing a bid as close to the end of an auction as possible in order to minimise the amount of time your competitors have to increase their bid. You can manually snipe (enter your bid manually before the end of an auction), but there are also automated services in which a computer automatically places your bid just seconds before the close of an auction. Such automatic sniping can be achieved with special software that runs on your computer, or there are companies that will provide the sniping service for you.

SOA (Service Oriented Architecture)

A solution to the requirement for different services such as distributed software, application integration, varying platforms, varying protocols and various devices to communicate with each other. This communication can involve either simple data passing, or two or more services coordinating some activity. Some means of connecting services to each other is needed. The adoption of SOA addresses the issue of different protocol and platforms and enables applications to be integrated seamlessly.

SOAP (Simple Object Access Protocol)

A W3C standard, SOAP is a lightweight XML-based protocol for exchanging structured information in a decentralised, distributed environment. It enables a program running in one kind of operating system to communicate with a program in the same or another kind of an operating system by using HTTP and XML as the mechanisms for information exchange. Since these protocols are incorporated into all major operating system platforms, they provide a readily available solution to the problem of how programs running under different operating systems in a network can communicate with each other.

Social engineering

A means of obtaining confidential information with a view to gaining illicit access to a computer system. The perpetrator tricks legitimate users into revealing sensitive information or breaking normal security procedures through human interaction, typically via a telephone conversation. Alternatively information can be gathered through eavesdropping or shoulder surfing and subsequently exploited. It is sometimes referred to as the modern day version of a confidence trick.

Social network analysis

The mapping and measuring of relationships and flows between people, groups, organisations, computers or other information/knowledge processing entities. The nodes in the network are the people and groups, while the links show relationships or flows between the nodes. The results of social network analyses can be used at the level of individuals, departments or organisations to identify teams and individuals playing central roles, identify isolated teams or individuals, detect information bottlenecks, spot opportunities for knowledge flow improvements, accelerate the flow of knowledge and information across functional and organisational boundaries, and improve the effectiveness of formal communication channels.

Social networking

Social networking refers to a category of Internet applications that are intended to help connect business partners, or other individuals together using a variety of tools, and subsequently enable them to work more effectively together. Members build profiles of their interest and skill sets which are then searchable by other members. Other applications such as project management, document sharing and community management are intended to assist in collaborative working once the initial contact has been made.

Soft launch

A website that is implemented in stages, rather than all at once. Unlike other publishing media, such as a book or CD-ROM, which require the entire project to be completed before they are distributed, a website can easily be deployed in stages. The preliminary versions of the site can be used to provide initial feedback and testing prior to the launch of the full site.

Spam

Junk mail on the internet, usually in the form of unsolicited and unwelcome e-mail messages. The term was originally used most frequently in the context of newsgroups, referring to the same article being posted repeatedly to different newsgroups. It is now increasingly used to describe the sending of bulk e-mail, with addresses provided by companies that specialise in creating e-mail distribution lists. It is generally perceived by the recipient as junk mail (much the same as the unsolicited mail shots that come through our letterbox everyday) and is considered poor netiquette. The term is believed to have originated as a reference to the famous Monty Python 'spam, spam, spam' sketch where spam is served with everything.

Spambot

A program that specialises in gathering e-mail addresses in order to build mailing lists that are subsequently used to send *spam*. It basically follows links and saves any e-mail addresses it finds as it goes along. A spambot usually gathers e-mail addresses from the web, or from newsgroups and discussion groups. A number of specific programs have been written in an attempt to foil spambots. In addition a technique known as *munging* has been developed to disguise e-mail addresses from spambots.

Spearphishing

Term used to describe any highly targeted *phishing* attack. Phishers are now sending more targeted e-mails to businesses and these are designed to appear as though they were sent by another member of staff at the same company, typically from somebody in authority within the IT or HR departments. The intention is to fool the recipient into revealing their user names or passwords, and so enable the phisher to gain access to confidential data on the company's IT systems.

Spend management

Generic term used to describe the way in which a company manages how it spends its money in the most effective manner. It involves cutting operating and other costs associated with doing business. Spend management incorporates all of the main activities associated with acquiring goods or services including spend analysis, sourcing, procurement, receiving goods and services, payment and accounts management.

Spider

A program that roams the internet collecting data and looking for new and updated pages. Spiders are frequently programmed to visit sites that have been submitted by their owners as new or updated. The results are fed into a database, which can then be searched using a search engine. Spiders play a vital role in the successful use of search engines because of the huge rate at which new pages are put online, a rate that couldn't possibly be handled by manual indexing.

SPIM (Spam over Instant Messaging)

Delivery of *spam* through instant messaging (IM) rather than via the more conventional e-mail messaging. This type of spam is a growing threat, not least because it bypasses firewalls and anti-virus software and is therefore a relatively easy means of passing on viruses and other malware.

SPIT (Spam over Internet Telephony)

Describes the unsolicited broadcast of voice mail via *VoIP* to phones connected to the Internet. This type of *spam* is not a major problem at present, though its threat is likely to grow as IP telephony becomes increasingly common.

Splog

A fake *blog* website that the author has created solely for the purpose of promoting an affiliated website. The content of a splog is essentially an advert for the affiliated website, containing little or no original content and with the intention of boosting the number of visitors to that site or increasing the indexing results arising from web crawlers. A number of splog reporting services such as SplogReporter and SplogSpot have been set up, partly to help ensure that the splog URLs are excluded by search engines. See also [blog](#).

Spoofing

A term used to describe an imposter who is pretending to be someone or something they are not. The most common form of spoofing is the forging of an e-mail header so that the message appears to have come from someone other than the actual source. This approach is frequently used by distributors of spam. However such messages can also pose security risks if, for example, they claim to be from a financial organisation and request sensitive data such as credit card numbers or bank account details which are then used for criminal purposes. Spoofing is also used to describe the practice of setting up a fake web site, with a view to deceiving visitors into believing that it is the authentic site that they were in fact looking for.

Spyware

Technology that covertly gathers web user information and activity without the user's knowledge. This information, which can include keystrokes, passwords, and other confidential and private information, is then transmitted to advertisers or other interested parties and can be exploited for marketing purposes or for more malicious uses such as identity theft. A spyware program will usually be installed unintentionally by the user, often by piggybacking on a piece of desirable software.

SSI (Server Side Includes)

Commands that are included into HTML pages and are executed before the web page is sent to the client. The commands are special kinds of HTML tags that are interpreted by the web server. They offer a simple way of customising a page, for example by defining a variable that is replaced by the name of the site visitor (identified by IP address, login/password, or via a cookie). This would enable every single visitor to be welcomed to the site individually without the need for different web pages on the server.

SSL (Secure Socket Layers)

A protocol designed to provide privacy between a web client and a web server. The protocol begins with a handshake phase that negotiates an encryption algorithm and keys, and authenticates the server to the client. Once the handshake is complete and the transmission of data begins, all data is encrypted using the keys negotiated during the handshake.

Standard punchout

Term used to describe the situation where the user of an internal e-procurement service is directed to the e-commerce site of an approved supplier and is able to use the standard search and browse facilities on that site to select items they wish to purchase. This has the advantage of offering the user the sophistication of the supplier's website from within the purchaser's own e-procurement solution and also avoids the need to maintain a local catalogue that lists the available products. The supplier is able to maintain its own item information and reduce the maintenance costs of managing the catalogue for the customer. See also [transparent punch-out](#).

Stateless connection

A connection between a sender and a receiver over the Internet in which each transmission of information is independent and no information is retained by either sender or receiver. The sender transmits a packet to the receiver and does not expect an acknowledgment of receipt. The recipient receives the packet without any prior connection set-up.

Stickiness

Term used by web marketers to describe the length of stay of a visitor on a website. Sites that are able to hold a visitor's attention for a longer period of time may generate more advertising sales. Contests, sweepstakes and rapidly changing content are all used to encourage visitors to move from page to page on a website, thus increasing its stickiness. The site's web log files are used to track a visitor's movements through it and, therefore, measure its stickiness.

Supply chain

The linking of activities such as design, procurement, manufacture, inventory management, warehousing and transportation between business partners in order to manage the flow of goods and information from the point of design to the delivery of the product or service to the end customer.

SWIFT (Society for Worldwide Interbank Financial Telecommunication)

A bank-owned co-operative that supplies secure messaging services and interface software to over 7000 financial institutions in 194 countries. It carried 1.2 billion messages in 2000. The average daily value of payment messages on SWIFT is estimated to be above USD 5 trillion.

Syndicated selling

An arrangement in which the operator of an e-commerce site rewards a referring website by paying a commission on any purchases that are made to the visitor who has been referred. See also [affiliate](#).

T

Tablet PC

A type of notebook computer that has a touch screen on which the user can write using a special-purpose digital pen or stylus. The handwriting is digitised and can be converted to standard text through handwriting recognition, or it can remain as handwritten text. The device also incorporates a keyboard and/or a mouse for input. The popularity of such devices is increasing, largely due to today's extended battery life, improved display resolution, handwriting recognition software, larger memory and wireless Internet access.

Tarpitting

The process of monitoring e-mail traffic in order to identify addresses that are sending suspiciously large volumes of e-mail. This can be an indication that the address is being used for the purposes of sending spam.

Taxonomy

The science of classifying or categorising things. Initially it focused upon living organisms, but more recently the term has also been applied to the web. A web taxonomy is the development of a scheme that classifies sites on the web into a hierarchy for searching purposes.

TCP/IP (Transmission Control Protocol/Internet Protocol)

Protocol governing communications between all computers on the internet. TCP/IP is a set of instructions that dictates how packets of information are sent across multiple networks. Also included is a built-in error-checking capability to ensure that data packets arrive at their final destination in the proper order.

Terabyte

A unit of measurement for physical data storage capacity on some form of storage device such as a hard disk or optical disk. It is equal to two raised to the 40th power i.e. 1,099,511,627,776 bytes, roughly the equivalent to one trillion bytes, one million megabytes, or one thousand gigabytes.

Thin client

A network computer without a hard disk drive that has the ability to process information independently but relies on a server for applications, data storage, and administration. The key characteristics are that it is designed in such a way that it has only the minimum specification, it is therefore low in cost, and the bulk of the processing occurs on the server.

Thought recognition

The capability of inputting to, and controlling, computer processes through the system's ability to recognise neural patterns in the user's brain. Paralysed and handicapped people have, for some time, been able to communicate with a computer through sensing devices that are able to detect other forms of biophysical activity, such as muscular activity and eye movement. Much work has been done on using the thought command as an even more direct form of computer input, though to date the success has been limited.

TIFF (Tag Image File Format)

A common format that is designed to promote the interchange of digital (bitmapped) images. The tag (or header) typically holds information such as the size of the image and the resolution at which it was captured. A TIFF file can be identified as a file with a '.tiff' or '.tif' file name suffix.

Trojan Horse

A program that appears to be legitimate but actually contains another program or block of undesired malicious, destructive code, deliberately disguised and intentionally hidden in a block of desirable code. The Trojan Horse program is not itself a *virus* but a vehicle in which viruses can be concealed.

Transparent punchout

Term used to describe the situation where the user of an internal e-procurement service is able to search for products or items on the e-commerce site of an approved supplier without leaving their local e-procurement environment. The user does not necessarily know that the details of any items meeting their search criteria come from an external site. It avoids the need for the customer to maintain a local catalogue that lists the available products. The supplier is able to maintain its own item information and reduce the maintenance costs of managing the catalogue for the customer. See also *standard punch-out*.

Trusted Computing Group

A not-for-profit organisation formed to develop, define, and promote open standards for hardware-enabled trusted computing and security technologies, including hardware building blocks and software interfaces, across multiple platforms, peripherals, and devices. TCG specifications enable more secure computing environments without compromising functional integrity, privacy, or individual rights. The primary goal is to help users protect their information assets (data, passwords, keys, etc.) from compromise due to external software attack and physical theft. For further information visit <http://www.trustedcomputinggroup.org>

Trusted Third Party

An entity that provides one or more of the services in which you place your trust as part of the Public Key Infrastructure, the bedrock security infrastructure for doing global electronic commerce. This may include, for example, acting as a Certification Authority, Registration Authority or Secure Repository.

Two factor authentication

Term used to describe any security authentication mechanism where more than one thing is required to authenticate a user. The two factors are frequently referred to as 'something you have' and 'something you know'. A common example is the chip and pin card, where the card is the physical item and the PIN is the number known to the user. Increasingly in e-business the 'something you have' is provided by a small token card that is a compact electronic device displaying a number on a small screen. By entering this number, which changes frequently, when attempting to log onto a system, the user proves that they are in possession of the card.

Typosquatting

A form of *cybersquatting* that relies upon the Internet user misspelling a popular domain name and being directed to an alternative website. The typosquatter will generate advertising revenue by selling adverts on the site to which accidental traffic arrives, or by redirecting such visitors to other web pages offering related products or services. Google has recently won a ruling from the National Arbitration Forum giving it control of several domains including google.com, ghoogle.com, gfoogle.com and gooogle.com which had all been registered by a typosquatter in Russia.

U

UML (Unified Modeling Language)

A programming language that is used for object-oriented software development. To organise program code more efficiently, programmers often create 'objects' that are sets of structured data within programs. UML, which has been standardised by the Object Management Group (OMG), was designed for this purpose. It simplifies the complex process of software design by using 'blueprints' for software construction and has become a standard language for visualising and constructing software programs.

UMTS (Universal Mobile Telecommunications Service)

A third generation GSM-based service integrating wired and wireless technologies and increasing data transmission rates. UMTS will offer location services, broadcast services and a variety of quality levels upon which to build a range of applications. It is therefore not just a mobile voice system which can also offer some data services, it is a flexible mobile data system that can also offer voice. So the terminal is unlikely to be a simple phone.

Unified communications

Often referred to as the second generation of unified messaging solutions, unified communications encompasses all forms of call and multimedia message-management functions controlled by an individual user for both business and social purposes. In essence it offers more dynamic real time access to messages, providing real time find me/follow me call management (where dialing a single number will enable the caller to get in touch with you no matter where you are or what device you are using), more integrated communications such as listening to e-mails using text to speech (TTS), and the ability to send instant responses to an e-mail by a variety of devices including telephone or computer. The Unified Communications Consortium (www.unified-communications.org) focuses on the global unified communications market, both for public services and enterprise systems.

Unix

A powerful operating system that was developed at Bell Telephone Laboratories in 1969. It provides multi-tasking, multi-user capabilities that allow multiple programs to be run simultaneously and multiple users to use a single computer. UNIX is one of the most common operating system for servers on the Internet. The present owner of the trademark UNIX® is *The Open Group*, an industry standards consortium. Only systems fully compliant with and certified to the Single User Specification qualify as 'UNIX®'. For more information visit http://www.unix.org/what_is_unix.html

URL (Uniform Resource Locator)

The standard form for addresses on the internet. Each URL is a globally unique address within the entirety of the internet.

User ID

Short for user identification. A short and cryptic string of characters (usually eight or fewer) that identifies a user to a system. User IDs are unique on a given computer or network - no two users can have the same user ID. Commonly used in conjunction with a password for logging-on purposes.

V

VANs (Value Added Data Networks)

VANs offer an alternative to building networks by leasing circuits from common carriers. VANs provide additional services over and above those normally provided by common carriers, such as network management, e-mail, EDI, standardisation and security features. Within the e-commerce arena VANs have played a particularly significant role in the way in which they have provided trading partners within specific trading communities with electronic post boxes and then collected and distributed EDI electronic envelopes. They provide security to ensure the safety and integrity of transactions, and charge an annual subscription fee, plus a usage fee for their services.

vCard (virtual card)

A standard defining the format of an electronic business card. vCards are often attached to e-mail messages, but can be exchanged in other ways, such as on the web. They can contain name and address information, phone numbers, URLs, logos, photographs, and even audio clips. Because the vCard standard pertains to the data, different programs have different ways of storing vCards. Some let you drag and drop the vCard icon directly into the program, and others require you to save the vCard to disk and then import it to the program. Others automatically detect when you are receiving a vCard and will prompt you for your address book location. The vCard standard is now maintained by the Internet Mail Consortium. For more information visit <http://www.imc.org/pdi/>

Viral marketing

Term coined in a 1997 Netscape newsletter to describe word of mouth publicity on the internet. Essentially it is a marketing technique that induces web sites or users to pass on a marketing message to other sites or users, creating a potentially exponential growth in the message's visibility and effect. Perhaps the best example of viral marketing is Hotmail.com, one of the first free web-based e-mail services, who included their own marketing message on every free message sent out. Other popular viral marketing techniques include treasure hunts and jigsaw puzzles, both designed to encourage participants to visit a predefined sequence of web pages.

Virtualisation

Process of helping an organisation to share IT resources. Virtualisation enables resources to be pooled in logical groupings or subsets, making them appear to be individual devices that are managed centrally. These can be accessed irrespective of geographic location or the physical configuration of the underlying resources, thereby optimising utilization and lowering costs. Three specific areas where virtualisation is used successfully are storage virtualisation, server virtualisation and network virtualisation.

Virtual reality

Computer simulation that allows the user to interact with data that gives the appearance of a three-dimensional environment. Special interfaces give the user the feel, sound and view of the virtual system, so that they can 'enter' the '3-D world' portrayed as graphic images, and change viewpoint and interact with object in that world. Such interfaces can include wrap-around display screens and actual rooms augmented with head mounted displays. Applications for virtual reality are the simulation of real environments for training or education, and the development of imagined environments specifically for games.

Virtual team

A group of people brought together electronically to work on a problem or project, working remotely from their separate locations and organisations.

Virus

A special kind of computer program capable of reproducing itself in systems other than the one on which it was created. It spreads across disks and networks by making copies of itself. As it spreads it is said to be infecting the system. It always requires a trigger or external request for execution, and when executed it can produce a range of side effects including serious corruption and destruction in the computers in which it is active.

Vlog

A vlog is a type of *blog* that uses video as its main presentation format. It is primarily a medium for distributing video content. Vlogs or videoblogs are created by vloggers or videobloggers, while the act itself is referred to as vlogging. It is becoming more common as equipment becomes cheaper and supporting software and aggregation sites become more prevalent. Both Yahoo and Google feature video sections and many MP3 players support video.

VoIP (Voice over IP)

The ability and process of carrying voice over an IP network. One of the main drivers is the fact that data traffic is overtaking voice traffic, so utilising packet networks for voice and data is becoming increasingly attractive. Call centres are already making use of VoIP to enable the web site visitor to contact them directly from a web page.

VPN (Virtual Private Network)

A VPN is a private data network that makes use of the public telecommunications infrastructure. VPNs maintain privacy through the use of tunneling protocol (which provides a secure point to point 'tunnel' for data transfer) and other security procedures, particularly data encryption.

VSP (Vertical Services Provider)

A type of *Applications Service Provider (ASP)* that provides software and services for a specific vertical market or industry sector such as banking or education. Also referred to as a Vertical Solutions Provider, a VSP can provide access for companies to more specialised software and services that relate specifically to the field that they are involved in.

W

W3C (World Wide Web Consortium)

Created in 1994 to develop common protocols for use on the web and to ensure interoperability. It currently has around 480 member organisations from around the world, drawn from the IT industry and public and private sector organisations through to academic institutions and user associations.

WAP (Wireless Application Protocol)

An open global specification that enables mobile users with wireless devices to access web-based information and services. The types of devices that will use WAP are handheld wireless devices such as mobile phones, pagers and two-way radios. Because it was designed for small devices with low specifications, WAP presents the end user with text information only, thereby speeding up the downloads.

War driving

Term used to describe the practice of searching for unsecured wireless LAN (WLAN) signals within a geographic area. Whilst some computer hackers are content to simply map any open, unsecured WLANs they find, others have adopted the practice of war chalking, tagging nearby pavements to allow others to tap in and either steal bandwidth from those networks or attempt to gain access to corporate networks. War driving is a controversial practice but it has, nevertheless, helped raise awareness of some of the basic problems associated with WLAN security.

Web 2.0

Web 2.0 is a phrase originally coined by O'Reilly Media to describe the second generation of web-based services that are aimed at improving online collaboration and sharing between users. Such services will include *social networking* sites and *wikis*.

Webcasting

The use of the Internet as a transmission medium for the broadcasting of live or delayed versions of either sound or video. The broadcast is achieved by 'streaming' audio and/or video, and users are able to access it by connecting to the webcast server. In order to view the webcast, the user must have an appropriate video viewing application which can usually be downloaded from the site offering the webcast. It is also possible to webcast to a selected group of recipients, which is commonly referred to as either 'narrowcasting' or 'multicasting'.

Webify

To convert a piece of material from its original content into a format that is capable of being displayed on the web. In the early days of the web this usually meant converting some hard copy documents (typically a company's PR brochures) into HTML for display on a static, promotional web site. Today it is more likely to include the conversion of hard copy files into **PDF** format, Word documents into HTML and image files into a **GIF** or **JPEG** file.

Web ring

A reciprocal link network that connects together web sites with a common theme or within a specific industry sector. They benefit the participating sites by enabling visitors to move from one site to the next automatically, eventually ending up back where they started. The great strength of a web ring is its ability to create an online community that works on the principle of mutual benefit. Probably the largest web ring organiser is the former Yahoo! Web Ring now simply known as Web Ring (<http://dir.webring.com>).

Web Services

Web Services is a standards based initiative (primarily using **XML**) that aims to bring together existing protocols and standards and tie them together in a way that allows the delivery of components using the Internet as the backbone method of delivery. Applications can be assembled from different components across heterogeneous platforms and delivered without the necessity for predetermined agreements to be put in place before the use of the Web Service is offered. Typical Web Services include storage management and **customer relationship management**.

WEEE (Waste Electrical and Electronic Equipment) Directive

The WEEE Directive is the European Community directive 2002/96/EC on waste electrical and electronic equipment which sets collection, recycling and recovery targets for all types of electrical goods. The directive imposes the responsibility for the disposal of waste electrical and electronic equipment on the manufacturers of such equipment who are required to establish an infrastructure for collecting this equipment. The regulations came into force on 2 January 2007, with producers required to join a compliance scheme by 15 March 2007 and to mark electrical and electronic equipment (EEE) by 1 April 2007.

WEP (Wired Equivalent Privacy)

A security protocol for Wireless LANs (see **Wi-Fi**) defined in the IEEE 802.11b standard. WEP is designed to provide the same level of security as that of a wired LAN. However, LANs are inherently more secure than WLANs because they are protected by their physical environment, having some or all of their parts inside a building that can be protected from unauthorised access. WLANs, which transmit over radio waves, do not have the same physical structure and therefore are more vulnerable to tampering. WEP aims to provide security by encrypting data over radio waves so that it is protected as it is transmitted from one end point to another. However, it has been found that WEP is not as secure as once believed, since it is used at the two lowest layers of the OSI model – the data link and physical layers, and therefore does not actually offer end-to-end security. Increasingly, therefore, **VPNs** are being used to provide such end-to-end security for Wi-Fi installations.

WfMC (Workflow Management Coalition)

Founded in August 1993, this is a non-profit, international group of companies including workflow vendors, users, analysts and university/research groups. The purpose of the group is to promote and develop the use of workflow through the establishment of standards for software terminology, interoperability and connectivity between workflow products. For more information visit www.wfmc.org

White hat

An ethical *hacker* who identifies a security weakness in a computer system or network but, instead of taking malicious advantage of it, exposes the weakness in a way that will allow the system's owners to fix the breach before it can be exploited by others. This contrasts with a *black hat* who would seek to exploit such a weakness for their own purposes or gain.

Wi-Fi

A popular term (adapted from the home entertainment term 'Hi-Fi') used to describe the high-frequency wireless data networking protocol generally used to connect PCs and laptops to a network. Also known as 802.11b and WLAN (Wireless LAN), it is the most common means of wireless networking. It operates at 2.4 GHz, offering speeds of up to 11 megabits per second. The major concern associated with the use of Wi-Fi wireless LANs is that their security can be compromised by anyone within broadcasting range if appropriate security measures are not taken. The more common countermeasures include the use of *WEP (Wireless Equivalent Privacy)* and *VPNs (Virtual Private Networks)*.

Wiki

A server program that allows users to collaborate in forming the content of a website. Using a simplified interface, the users can each view the pages of a website and edit the content from their own computer. This includes the creation of new content, the editing of text and hyperlinks, and changes to the organisation of existing content. All of this is undertaken without any requirement to know *HTML (hypertext markup language)* or perform work in HTML code. Given the ability of any user to change the content, the operation of a wiki website is based heavily upon a principle of collaborative trust. The term comes from the Hawaiian word 'wikiwiki,' meaning 'fast'.

WiMAX

A wireless industry coalition formed in 2001. The group's aim is to promote and certify compatibility and interoperability of devices for broadband wireless access networks and to develop such devices for the marketplace.

WiMedia Alliance

The WiMedia Alliance was formed in 2002 to promote a single, cross industry, specification for wireless multimedia connectivity. Based on IEEE radio standards (IEEE 802.15.3 and .3a), the WiMedia Alliance is assembling a portfolio of technologies to enable connectivity for consumer electronics, PC and mobile communications products. The mission of the organisation is 'to promote wireless multimedia communication and interoperability among devices within a personal operating space'. For more information visit <http://www.wimedia.org>

WinZip

A compression program for Windows that allows you to zip and unzip ZIP files as well as other standard types of archive files. Zipping files allows them to be stored or distributed more efficiently in their compressed format. Further information and an evaluation copy of the program can be obtained from www.winzip.com

WML (Wireless Markup Language)

Formerly known as HDML (Handheld Devices Markup Language) this is a dialect of HTML that enables text portions of web sites to be displayed on mobile phones and personal digital assistants (PDAs) via wireless access. WML is part of the Wireless Application Protocol. Filter programmes are available that offer the capability of translating HTML into WML.

Workflow

The term used to describe the analysis of tasks, procedures, sequences of steps and required information that should be taken under specific conditions to support a business process. Workflow software can be used to automate the creation of a workflow model and the associated components, and then support the business procedures by ensuring that the correct steps are followed and providing the correct forms and information to support the individual tasks. A frequently cited example of a successful workflow application is the handling of a mortgage application, where the workflow software ensures that each person in the process completes their specified activity prior to handing it on to the next stage and ultimately to its final completion.

Worm

A malicious program that replicates itself over a computer network. Worms reside in parts of the operating system that are usually invisible to the user, so they are frequently not noticed until the effects of their propagation consumes system resources to such a extent that tasks are slowed or completely halted.

WORM

An acronym for **w**rite **o**nce, **r**ead **m**any, an optical disk technology that allows information to be written onto a disk just once, thereby preventing the erasure of the data. After that, the data is permanent and can be read any number of times. They are, therefore, well suited for archiving applications. However, unlike CD-ROMS, there is no single standard for WORM disks, which means that they can only be read by the same type of drive that wrote them. This has tended to hamper their acceptance.

WSS (Web Services Security)

Specification for incorporating security information into **SOAP** messages. Developed at **OASIS**, the WSS specification describes enhancements to the existing SOAP messaging to provide quality of protection through the application of message integrity, message confidentiality, and single message authentication to SOAP messages. These basic mechanisms can be combined in various ways to accommodate building a wide variety of security models using a range of cryptographic technologies. WSS also provides a general-purpose mechanism for associating security tokens with messages. It is designed to support multiple security token formats in order to accommodate a variety of authentication and authorisation mechanisms.

X

X.400/X.500

X.400 is a set of seven standards that define how e-mail is to be processed by user agents and mail transfer agents. It defines what is in an electronic address and what the electronic envelope should look like. X.500 is a subsequent standard that acts as the directory service for X.400 mail users. However there are few standard application software packages that conform to X.500, making widespread use problematic.

XBRL

XBRL is an XML-based, royalty-free and open standard being developed by a consortium of over 400 companies and agencies. The objective is to facilitate the electronic communication of business and financial data, and offer cost savings, greater efficiency and improved accuracy and reliability to all those involved in supplying or using financial data. For more information see <http://www.xbrl.org>

XML (eXtensible Markup Language)

A standard for data formats that is greatly facilitating the growth of e-commerce. It is designed to enable different computer programs, including business software packages, to share and process data. XML uses a tag system, where words enclosed in parantheses are used to describe the elements of a document. However, unlike HTML, these tags are extensible and hence unlimited and self-defining. This enables companies or trading communities, wishing to exchange business information, to agree upon a standard or common way to describe, for example, individual products and elements. This exchange of information can then take place irrespective of the different software or hardware platforms that may be in place. The next generation of office tools will be XML based.

XML Schema

The definition of content used in an XML document, incorporating business process information and information about different data types. This definition is used by developers to translate the nature of the data within the XML document in the integration of e-commerce systems. It is essential for smooth data transfer that systems use the same schemas to translate XML tags. Currently developers and XML standards bodies are defining which schemas to use for data transfers in a variety of applications. As and when standard schemas are agreed they are typically placed in repositories on the web so they can be picked up and adopted by application developers.

XrML

Short for Extensible Rights Markup Language, XrML is a *digital rights management* markup language for expressing rights and conditions associated with digital content, web services or any digital resource. The XML-based language was developed at Xerox Palo Alto Research Center (PARC), which invented the digital rights language concept, and backed by patented technology, XrML is currently governed by ContentGuard, Inc. The potential importance of XrML lies in the fact that a single DRM language would do much to facilitate the buying and selling of content over the web, whilst at the same time protecting the content from unauthorised use. For more information visit www.xrml.org

Z

Zombie

Term used to describe a computer system, typically connected to a broadband connection, that is maliciously infected by some form of remote control software without the owner's knowledge. Zombies are often used in a co-ordinated attack to launch an overwhelming number of requests towards a website which is then unable to service legitimate requests from its users. This is also known as a Distributed Denial-of-Service attack. See also *bot-infected computer*.